ANNUAL REPORT

OF THE

COMMANDANT

U. S. INFANTRY AND CAVALRY SCHOOL, U. S. SIGNAL SCHOOL, AND STAFF COLLEGE

FOR THE

SCHOOL YEAR ENDING AUG. 31, 1906

STAFF COLLEGE PRESS, FORT LEAVENWORTH, KANSAS

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INFANTRY AND CAVALRY SCHOOL

Fort Leavenworth, Kansas, August 31, 1906.

The Chief of Staff,
United States Army,
Washington, D. C.

Sir:

I have the honor to submit the following report on this School for the year commencing August 25, 1905, and ending August 24, 1906:

COMMANDANT

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

PERSONAL STAFF

1st Lieutenant William N. Hughes, jr., 13th Infantry.
1st Lieutenant Clarence O. Sherrill, Corps of Engineers.

Lieutenant Sherrill having entered the class of the Infantry and Cavalry School on September 1, 1905, was, at his own request, relieved from duty as Aide-de-Camp, to date November 30, 1905, per Orders No. 15, dated November 28, 1905.

2d Lieutenant Frederick Mears, 5th Cavalry, was directed to report for duty as Aide-de-Camp per paragraph 5, Special Orders No. 282, War Department, dated December 5, 1905, and was announced as Aide-de-Camp per Orders No. 18, dated December 18, 1905.

Lieutenants Hughes and Mears were relieved from duty as Aides-de-Camp per paragraph 19, Special

Orders No. 189, War Department, dated April 14, 1906, General Bell having been appointed Chief of Staff.

ASSISTANT COMMANDANT

Major Eben Swift, 12th Cavalry.

Major Swift performed the duties of Commandant from August 15 to November 21, 1905, and from April 4 to June 25, 1906, in absence of the commandant.

SECRETARY AND DISBURSING OFFICER

Captain Milton F. Davis, 10th Cavalry.

Captain Davis, on May 1, 1906, availed himself of leave of absence, granted per paragraph 11, Special Orders No. 76, War Department, dated March 30, 1906.

1st Lieutenant William N. Hughes, jr., 13th Infantry, performed the duties of Secretary during the absence of Captain Davis on leave, in obedience to Orders No. 14, dated April 30, 1906.

DEPARTMENT OF MILITARY ART

Major Charles H. Barth, 12th Infantry, Instructor.
Captain Matthew F. Steele, 6th Cavalry, Asst. Instructor.
Captain Charles Crawford, 20th Infantry, Asst. Instructor.
Captain John D. L. Hartman, 1st Cavalry, Asst. Instructor.
Captain John P. Ryan, 6th Cavalry, Asst. Instructor.

Major Barth, was, on October 11, 1905, severely injured by his horse falling upon him, during the progress of a field maneuver, necessitating his being confined to quarters until December 18, 1905, when he availed himself of leave of absence on account of sickness, granted per paragraph 11, Special Orders No. 288, War Department, dated December 12, 1905. His leave was extended two (2) months, on account of sickness, per paragraph 13, Special Orders No. 82, War Department, dated April 6, 1906. Major Barth was relieved from duty at Service

Schools and Staff College per Orders No. 15, dated May 1, 1906, to enable him to comply with instructions from office of the Military Secretary, dated April 28, 1906.

Major Daniel H. Boughton, 11th Cavalry, was transferred from the Department of Law to the Department of Military Art and announced as Instructor, on January 8, 1906, per Orders No. 2, dated January 8, 1906.

Captain Ewing E. Booth, 7th Cavalry, Captain Oliver L. Spaulding, jr., Artillery Corps, Captain H. A. White. 11th Cavalry and 2d Lieutenant Frederick Mears, 5th Cavalry, Aide-de-Camp, were, on February 6, 1906, in addition to their other duties, detailed as assistant instructors, Department of Military Art, per Orders No. 5, February 6, 1906.

Lieutenant Mears' relief from duty as Aide-de-Camp terminated his detail on April 14, 1906. Veterinarian Sidney L. Hunter, 6th Cavalry, served as assistant instructor in Department of Military Art during the entire year.

DEPARTMENT OF ENGINEERING

Major Lansing H. Beach, Corps of Engineers, Instructor.
Captain Edwin T. Cole, 6th Infantry, Assistant Instructor.
Captain Harley B. Ferguson, Corps of Engineers, Assistant Instructor.

DEPARTMENT OF LANGUAGES

Captain Peter E. Traub, 13th Cavalry, Instructor.
Captain Francis Le J. Parker, 12th Cavalry, Asst. Instructor.
Captain Oliver L. Spaulding, jr., Artillery Corps, Assistant Instructor.

DEPARTMENT OF LAW

Major Daniel H Boughton, 11th Cavalry, Instructor.
Captain Herbert O. Williams, 5th Infantry, Asst. Instructor.

Captain Herbert A. White, 11th Cavalry, Assistant Instructor.
Captain Charles F. Bates, 25th Infantry, Assistant Instructor.

Major Boughton, was transferred to Department of Military Art, January 8, 1906 and Captain H. O. Williams, 5th Infantry, announced as Instructor, per Orders No. 2, dated January 8, 1906.

DEPARTMENT OF CARE OF TROOPS

Major Edward C. Carter, Medical Department, was, on November 15, 1905, detailed as Instructor, Department of Care of Troops at Infantry and Cavalry School, in addition to his duties as Surgeon, Fort Leavenworth, Kansas.

Major Carter had no assistants in the department during the school year.

STUDENT OFFICERS

Akeley, Charles E., First Lieutenant, 6th Infantry, Massachussetts National Guard.
Archer, Deas, Second Lieutenant, 26th Infantry.
Baldwin, Theodore A. , jr., First Lieutenant, 24th Infantry.
Ball, Collin H., First Lieutenant, 4th Infantry.
Baltzell, George F., Captain, 5th Infantry.
Barnard, Joseph H., Second Lieutenant, 5th Cavalry.
Barnes, John B., Second Lieutenant, 29th Infantry.
Bowen, Burton E., Captain, 2d Infantry, Washington National Guard.
Campbell, Staley A., Second Lieutenant, 17th Infantry.
Carr, Irving J., Captain, 28th Infantry.
Chiles, Seaborn G., Captain, 11th Infantry.
Coburn, Harol D., First Lieutenant, 8th Infantry.
Cocke, John, Second Lieutenant, 11th Cavalry.
Conger, Arthur L., First Lieutenant, 18th Infantry.
Cox, Creed F., Second Lieutenant, 11th Cavalry.
Crusan, Clyde B., First Lieutenant, 4th Infantry.
Eames, Henry E., Captain, 10th Infantry.
Foulois, Benjamin D., Second Lieutenant, 17th Infantry.
Gleaves, Samuel R., First Lieutenant, 1st Cavalry.
Greer, Allen J., First Lieutenant, 28th Infantry.
Hanna, Matthew E., Captain, 3d Cavalry.
Hawkins, Frank B., First Lieutenant, 27th Infantry.

Heidt, Grayson V., First Lieutenant, 14th Cavalry.
Hennessey, Peter J., Second Lieutenant, 5th Cavalry.
Hickok, Howard R., Captain, 15th Cavalry.
Hunt, Ora E., Captain, 18th Infantry.
Johnson, Bertram P., First Lieutenant, 25th Infantry.
Knowles, Alden C., First Lieutenant, 13th Infantry.
Krueger, Walter, Second Lieutenant, 30th Infantry.
Leasure, Shelby C., Second Lieutenant, 14th Infantry.
Lindsay, David A., First Lieutenant, 1st Infantry.
Long, John D., First Lieutenant, 12th Cavalry.
McCabe, E. R. Warner, Second Lieutenant, 6th Cavalry.
McCleave, Edward G., Second Lieutenant, 29th Infantry.
Major, Duncan K., jr., First Lieutenant, 14th Infantry.
Mayo, Charles R., Second Lieutenant, 12th Cavalry.
Merry, William T., First Lieutenant, 23d Infantry.
Murphy, Ernest Van D., First Lieutenant, 27th Infantry.
Nowlen, Edwin J., First Lieutenant, 11th Infantry.
Pate, Joseph B., Captain, 3d Infantry, Tennessee National Guard.
Price, George E., Second Lieutenant, 10th Cavalry.
Riggs, Kerr T., Second Lieutenant, 14th Cavalry.
Rubottom, E. Holland, First Lieutenant, 9th Cavalry.
Ryan, James A., Captain, 15th Cavalry.
Selkirk, Wyatt O., First Lieutenant, Artillery Corps, Texas National Guard.
Shaw, Frederick B., Captain, 30th Infantry.
Sherrill, Clarence O., First Lieutenant, Corps of Engineers.
Smith, Walter H., Second Lieutenant, 13th Cavalry.
Standiford, William R., First Lieutenant, 2d Infantry.
von dem Bussche, Carl F., Second Lieutenant, 18th Infantry.
Wieser, Gustave A., First Lieutenant, 15th Infantry.
Winters, William H., First Lieutenant, 13th Cavalry.
Young, Frederick S., First Lieutenant, 23d Infantry.

The following officers of the foregoing list graduated as

HONOR GRADUATES

Captain M. E. Hanna, 3d Cavalry.
Captain H. R. Hickok, 15th Cavalry.
First Lieutenant S. R. Gleaves, 1st Cavalry.
Captain J. A. Ryan, 15th Cavalry.
First Lieutenant S. C. Leasure, 20th Infantry.
First Lieutenant C. O. Sherrill, Corps of Engineers.

DISTINGUISHED GRADUATES

First Lieutenant C. F. Cox, 11th Cavalry.
First Lieutenant D. K. Major, Jr., 14th Infantry.
Captain S. G. Chiles, 11th Infantry.
Captain G. F. Baltzell, 5th Infantry.
Captain O. E. Hunt, 18th Infantry.
Captain H. E. Eames, 10th Infantry
First Lieutenant Walter Kruger, 23d Infantry.
First Lieutenant K. T. Riggs, 14th Cavalry.
First Lieutenant W. T. Merry, 23d Infantry.

The foregoing officers together with

First Lieutenant W. H. Smith, 8th Cavalry.
First Lieutenant J. B. Barnes, 12th Infantry.
First Lieutenant, E. H. Rubottom, 9th Cavalry.
Captain W. O. Selkirk, 1st Infantry, Texas National Guard.
First Lieutenant W. H. Winters, 13th Cavalry.
First Lieutenant F. S. Young, 23d Infantry,
Captain T. A. Baldwin, jr., 8th Infantry.
Captain A. L. Conger, 29th Infantry.

were retained at the School, pursuant to the provisions of paragraph 39, General Orders No. 140, War Department, series of 1905, for the Staff Class 1906-7, and were subsequently detailed per paragraph 7, Special Orders No. 167, War Department, July 17, 1906.

The following officers were retained on duty at the post to enter the Signal School Class of 1906-7, and were, together with Lieutenant W. N. Hughes, jr., 13th Infantry, detailed per paragraph 9, Special Orders No. 167, War Department, dated July 17, 1906:

Captain I. J. Carr, 28th Infantry.
First Lieutenant A. C. Knowles, 13th Infantry.
First Lieutenant W. R. Standiford, 2nd Infantry.
First Lieutenant E. J. Nowlen, 1st Infantry.
First Lieutenant D. A. Lindsay, 1st Infantry.
Second Lieutenant B. D. Foulois, 17th Infantry.

The remaining members of the class, having made proficient grades, were graduated, excepting

First Lieutenant Bertram P. Johnson, 20th Infantry, who was furnished with certificate of proficiency in the subjects in which he passed successfully.

1st Lieutenant C. B. Crusan, 4th Infantry has been confined to hospital since May 22d, because of a broken leg, sustained in line of duty. He will be granted sick leave when convalescent and examined in Strategy, Field Maneuvers and Field Engineering late in November, when he will doubtless be graduated.

1st Lieutenant Allen J. Greer, 28th Infantry, was, because of sickness, relieved from duty at the school, per paragraph 12, Special Orders No. 237, War Department, dated October 12, 1905, and left to rejoin his regiment on October 15, 1905.

2nd Lieutenant Peter J. Hennessey, 5th Cavalry, was, because of sickness, relieved from duty at the school per paragraph 26, Special Orders No. 279, War Department, dated December 1, 1905. Left school on sick leave November 26, 1905.

1st Lieutenant Grayson V. Heidt, 14th Cavalry, was directed to report without delay as student at the Infantry and Cavalry School, per paragraph 10, Special Orders No. 186, War Department, dated August 12, 1905. Reported at school September 22, 1905. Lieutenant Heidt, was, because of sickness, relieved from duty at the school per paragraph 26, Special Orders No. 279, War Department, dated December 1, 1905.

Discipline during the year has been excellent.

As with the submission of this report I will close my connection with the Infantry and Cavalry School as its commandant, I deem it advisable to here refer, for the possible benefit of my successors, to certain experiments and experiences which have been made and had during my administration.

First: During the year 1903-04 the experiment was tried of arranging the class in the order of class standing at the end of the first semester in December and then dividing it into sections, thus bringing all student officers with the highest class standing in the first section and ranging down to the lowest section which included all those with the lowest standing. It was supposed that by this means each student officer would be afforded opportunity to hear those standing nearest him in class rank recite and be thereby satisfied that they had earned their rating.

At the end of the year it was unanimously considered by the faculty of the school, and so far as I know by the student body, that this plan was very objectionable from many points of view and had few or no advantages. The plan was therefore abandoned and student officers were never thereafter arranged according to class standing, but always according to initial, until their graduation, when they were arranged as required by regulations. All of my experience at the school has tended to confirm the wisdom of the abandonment of that experiment.

Second: From time to time, questions have been raised by various parties as to the propriety of requiring certificates from officers in connection with each examination, certifying that no undue advantage has been taken, etc. Though this is in accordance with the universal custom of the War Department in connection with examinations held pursuant to its orders, it was not uniformly observed by the different departments in the Infantry and Cavalry School in 1903-04. As time passed by and additional experience was had it was clearly demonstrated to be advisable to adopt a uniform system and to apply this requirement to all the departments alike. A

form of certificate was therefore devised that would apply to all the work in each department and a requirement for its invariable use was embodied in a regulation. This requirement is not alone in accord with the uniform practice of the War Department, but is also a valuable expedient in removing any possible temptation from the path of student officers.

Third: Modifications which have taken place in the system of marking have been numerous and radical, but as this subject is quite fully discussed in Appendix "A," I shall only briefly refer to it here.

At one time the papers of student officers were divided among the assistant instructors, each assistant instructor marking the entire papers of an equal portion of the class. When competition for entrance to the Staff class was instituted, this was discovered to be a very faulty system and then a uniform rule was adopted requiring either that the same instructor or assistant instructor should mark every paper in a given examination or problem, or if divided at all that the marking of papers should be so divided that the answers made by every student in the class to any given question should be marked by the same instructor or assistant instructor. This plan has worked satisfactorily and succeeds in eliminating the inequity which might otherwise result from the varying personal equation of different assistant instructors. Some assistant instructors are close markers and others liberal markers. If the close marker marked all the papers of the first half of the class and a liberal marker all the papers of the second half, it is apparent that the latter half would have an advantage over the former half. But when the close marker marks the first half of the questions of all of the papers and the liberal marker marks the second half of the questions of all the papers it is apparent that every man in the class has fared alike.

Fourth: There have at times been instructors and assistant instructors who have failed to realize the advantage of issuing, prior to each examination, written, mimeographed, or printed instructions or rules for the regulation of examinations.

The greatest difficulty I have ever encountered in my own experience during active operations in the field was to get officers to carefully read and interpret their instructions with discrimination and intelligence. The next greatest difficulty was to secure a thorough and accurate compliance with the same. It is impossible after war has broken out to inculcate such habits in officers. It must be done in times of peace and there is only one way to accomplish it, namely, by practice. The course of instruction in the Infantry and Cavalry School affords most valuable opportunities for practice in these regards, and every such opportunity should be embraced.

It has been found that issuing printed instructions or rules for each examination was most excellent practice in requiring students first to read and carefully digest the meaning of their instructions; second, to exercise painstaking care in fully and accurately complying therewith. At one time there was no uniform practice in this regard among the different departments. In order to institute a rule, which should be applicable to all departments alike, a system of instructions and rules for the conduct of examinations was adopted which should be uniform so far as practicable. With added experience I have come to the conclusion that it was a mistake to have ever made a uniform rule for all the departments. The more they vary the better for the purpose, inasmuch as uniform rules are soon known by heart and need never be consulted at all, whereas if they differ somewhat in each department, and in each examination in each department, student officers would be

compelled to carefully consult them every time and exercise care in complying with them. In other words, they would be compelled to practice, practice, practice, and the only way to properly learn military art in time of peace and to acquire an automatic habit of observing proper principles and methods therein is by *practice.*

Fifth: Another thing which was developed by experience and which the undersigned considers of great importance is the giving of numbers to student officers on examinations for their use in identifying their examination papers, instead of signing them. This is one of the factors which contributes in no small degree toward confidence in the fairness of marking on the part of the student body. These numbers should be given them by the secretary or the chief clerk and not by those who are conducting the examination. Numbers should be changed for each examination and each problem or exercise.

Sixth: There was a time when blackboard recitations were held in the Infantry and Cavalry School, but happily this academic method has long since given way to methods of the university, which have placed the instruction on a broader and more dignified basis. It is hoped that the blackboard instruction will never be reverted to again.

Seventh: Of one thing the institution always has and probably always will stand in danger, and that is of retrogression in the present system of accurately marking written examinations, problems and practical work. It is so much easier to mark on daily recitations or to devise some system in order to avoid the terrible labor of marking written work that a constant temptation exists toward endeavor to secure a change in the system of marking student officers. Complaint is loud, and not without cause, at the ex-

cessive labor imposed on assistant instructors under the present system.

To best promote the success and proficiency of the school, the commandant should be rigid in his refusal to enter into compromises on this subject. No backward step should be taken in the efficiency of the system, but when it is found that the great number of papers to be marked imposes an unreasonable degree of labor upon assistant instructors every effort should be made to increase their number. The system of marking should never be relaxed.

Eighth: Because much difference of opinion always has existed and always will exist concerning the advisability of posting marks, a number of experiments have been tried in this line. Numerous suggestions have been made, among them:

(1) That it was necessary to post marks, because every student naturally desired to know his relative standing, in order that he might struggle harder when falling behind.

(2) That posting the marks was a violation of the spirit of the regulations of the school, which prohibited publishing the same.

(3) That in order to avoid said violation each student could be furnished with his own mark alone and thereby have all the information necessary to prevent any fear on his part that mistakes had been made in recording marks, or that they had been tampered with.

(4) That when class standing was figured out during the term and this standing became known to the faculty, its members would unconsciously be influenced by said standing in marking papers.

(5) That marks should never be posted at all. Being confidential memoranda made by the instructors, to assist them in properly grading student officers, the latter had no right to see these confidential data.

(6) That marks should never be posted until the school year was entirely completed, when the record made by each student officer in every subject should be posted for their information.

There were other suggestions, which were merely variations of these.

At one time marks upon each paper submitted in a subject were separately posted as soon as the marking was completed. Subsequently, no marks were posted until the entire subject was completed, but then they were posted in such a way as to show the mark obtained upon each separate paper or problem comprised in the subject. Experience leads me to believe that this latter is the preferable plan.

It is not believed that posting marks is publishing them, and therefore it is not thought that regulations are violated by doing so.

The plan of furnishing each student with his own mark was given a trial, but it was found that within fifteen minutes after the said marks had been thus distributed students were called together from all over the garrison, their marks were obtained and turned into a committee which figured out the relative standing. Some of the student officers who had obtained low marks gave them up reluctantly, but none of them could withstand the pressure imposed by his classmates. The clamorous determination of the large majority to have a record of relative standing effectually squelched all opposition. It had *previously* been observed that certain students lost a great deal of valuable time in making and keeping individual records of class standing. In order to minimize this injurious loss of time it was announced that marks would be posted as usual, and in order to save student officers the trouble of figuring standing it would be figured out for them by the secretary and posted on a bulletin board, which they could consult on Fridays and Saturdays. To preclude as far as practicable the injurious effect upon study during the week of the mental demoralization and distrac-

tion which was consequent upon seeing marks, it was found by experience to be best not to post them until after the week's work on Friday afternoons or early on Saturday mornings. In this way mental disturbance had a chance to subside before the beginning of the next week's work on Monday.

It is firmly believed that considering the marks as confidential data and never publishing them at all would completely destroy the confidence of the student body in the impartiality of the grading, besides completely eliminating one of the strongest incentives to effort.

To keep the marks and relative standing secret until the end of the term would be almost impossible, so anxious would student officers become to know their relative standing and such efforts would they make to ascertain it. Even if it were possible it would not, in my judgment, be in the slightest degree advisable. Where all student officers study so hard and do so well it would not be in accordance with human nature if a large majority of them did not form an impression that their relative standing was higher than it really was. When they came to discover their actual standing at the end of the term there would, of course, be much disappointment, and it is absolutely certain, in my judgment, that many of the student officers would never become thoroughly convinced that they had not deserved to be graded higher than they had been. On the contrary, when they see their grades and relative standing in each subject as it is completed, they note the fluctuations from time to time, and observing the great variation in standing in different subjects as the course progresses, also observing that some student officers always come out high and others always low, they become reconciled to their own relative position,

and finally, when the course is over, it is a rare occurrence where any student officer is not satisfied that, generally speaking, he came out where his relative industry and aptitude naturally brought him. No one can possibly deny that knowledge of relative standing is a strong incentive to increased effort. But be this as it may, I am thoroughly convinced it would be very dangerous either to conceal the marks altogether or to conceal them until the course is completed.

So long as competition for entrance into the Staff College is maintained in the Infantry and Cavalry School, the accuracy and fairness of the system of marking is of the utmost importance. In order to render it practicable to do the marking in as scientific a manner as possible, and in order to assist in eliminating the personal equation of the individual marking the papers, a system of dividing the subject into elements and marking each element separately has been gradually developed at the school. This system is such as to make it impossible to go far wrong in estimating the true value of the paper. The system is also such as to almost preclude the possibility of carelessness in marking.

It goes without saying that the course of instruction will develop and vary as the perfection of instruction develops in garrison schools. When the army is full of graduates of the Infantry and Cavalry School and Staff College, who will naturally pursue the methods they learned at these schools while teaching in garrison schools, many subjects now taught in service schools will be thoroughly covered in garrison schools, and then some subjects can be dropped out of the course at Fort Leavenworth and other subjects substituted.

Should the light artillery ever be separated from the seacoast artillery, it is hoped that an adequate

course of instruction in field artillery can be included in the Infantry and Cavalry School. In fact, when such a reorganization of the army has come about it would, in my judgment, be advisable to change the name of the Infantry and Cavalry School to some such title as "School for Officers of Mobile Forces," and regularly detail the proper proportion of engineer, cavalry, field artillery and infantry officers thereto each year. In the above contingency such officers of seacoast artillery as might desire to enter the school, and as are recommended by the Chief of Artillery, should be permitted to do so in numbers not exceeding an equitable proportion for that branch of the service. Officers of the signal corps, a branch of the staff whose tactical duties are closely connected with those of the line of the army, should be given the same privilege, under similar conditions.

In case the plan proposed this year by the President and the Secretary of War, to convert Fort Riley into a brigade post by adding two regiments of infantry, one battalion of engineers and one company of signal corps, should be finally accomplished, a school of practice could be constituted at Fort Riley, consisting of all these troops together with the cavalry and field artillery now at that post, and its name could then be appropriately changed to "School of Practice for Mobile Forces." There could thus be two great schools for mobile forces near together, the one for practice exclusively and the other for theory and practice combined. With a brigade at Fort Leavenworth and two others at Forts Sill and Riley, these three brigades could annually assemble at a suitable time for field instruction on the reservation at Fort Sill, the courses of instruction at the schools being so timed as not to be interfered with by such concentration of troops.

Major Charles H. Barth, 12th Infantry, is now engaged on the translation of the latest edition of Applied Tactics by Griepenkerl, in which he is introducing the tactical units of the United States Army. The edition of Griepenkerl at present used in this school is an English translation of an earlier edition which deals with English tactical units. It is hoped that Major Barth's translation may be found more suitable for use as an American text-book.

The Department of Military Art also has under consideration the preparation of a book upon the subject of Security and Information, following the same system as that employed in Applied Tactics by Griepenkerl.

It is hoped that after the system of instruction has become more thorough in garrison schools the above two text-books may be used therein and dropped from the course of instruction in this school, thereby affording opportunity of substituting for them in the curriculum more advanced instruction of a similar kind.

Too much care cannot be exercised in the administration of the service schools at Fort Leavenworth to have everything thoroughly and accurately done. Too much effort cannot be exercised in inculcating thoroughness and accuracy in the habits of officers. The administration cannot expect excellence in this regard from student officers unless it be very careful to set an example itself. Therefore everything should be systematically and promptly attended to. Plans for every feature of the instruction should be carefully thought out and fully prepared prior to the time when they are to be put into execution. So far as practicable all plans and schedules covering practical details should be published and distributed to student officers sufficiently in advance to give them

ample warning. Nothing is so disturbing to a student undergoing instruction as uncertainty concerning what is expected in the future.

Very respectfully,

J. F. BELL,

Brigadier General, U. S. Army,

Commandant.

[APPENDIX A.]

Marking Daily Recitations—Pro and Con.

In conducting the administrative work of this institution, the commandant always has had and probably always will have brought frequently to his attention two subjects on which there has always been very considerable divergence of opinion—the marking system and the competition based thereon which is conducted in the Infantry and Cavalry School.

Where such variety of opinion exists, no one should assume the attitude of an oracle on these subjects, but it is also perfectly certain that no changes should be inaugurated in the present system not dictated by actual experience and by anxious, painstaking, thorough, and comprehensive deliberation upon all the considerations which have a bearing thereon.

I reported for duty at this institution on July 1, 1903, with verbal instructions to study the needs and organization of the General Service and Staff College with a view to making a report desired by the War College Board. On the last day of that month I made a report from which I quote the following paragraphs:

2d. 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 recita-

tions 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 at 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.

When I wrote the foregoing lines so many weighty arguments had been made in favor of a return to the daily marking system that I was really favorably impressed with that system but afraid to make any change because of a lack of personal experience. Since that time, three years ago, my convictions have been steadily undergoing a change, with accumulating experience, until now I have become thoroughly convinced that the present marking system—on practical work and written examinations alone—is preferable to any combination of this system with daily marking.

I think it might be valuable to my successors to here record, for their convenient reference, all of the arguments pro and con which have been dictated by experience on the subject of the marking system and the competition in the Infantry and Cavalry School.

In the annual reports of the various commandants of the school for past years, on file in the college library, will be found the following extracts on the marking system:

Lieut-Colonel Jacob Kline, 9th Infantry, instructor, Dept. of Mil. Art, July, 1892.

At the examinations at the end of the term four officers failed to pass, and at the reexamination two of the four were recommended as deficient. Of the four officers who failed on the examinations, only three were in both of them. I submit that some action is necessarry, and I recommend a *return* to the latter clause of the regulations prepared by a board of officers under G. O. No. 17, headquarters of the army, A. G. O., March 27, 1888. The regulation referred to is embodied in the last part of paragraph 49, regulations of 1888, prepared to meet cases of this sort. It reads: "Officers who have failed at examination in any of the departments may, upon the recommendation of the staff, approved by the commandant, be reexamined in such subjects after the close of the entire course, and, if successful, shall be placed in relative merit in the particular subject and in general merit, *below* all those who, in the *first* instance, were found proficient by the staff." In one of the cases of reexamination, the failure to pass was not due to want of knowledge in the subject, but to carelessness, and yet, the reward for this carelessness under the *present* regulations (which combine daily marks with examination marks), is the taking of standing over other officers, who have performed hard and faithful work. I think the loss of standing for failure at examination, especially when this failure is due to neglect, just. A student officer whose proficiency in any subject has been questioned and in whose case an answer favorable to him has only been reached by a reexamination, certainly should not in the merit roll stand above any one whose proficiency in said subject has never been doubted. In this connection I desire to say that to my mind the best evidence of an officer's proficiency is the test afforded by an examination, and not the combined marks of the term and the examination. The term marks should only be used to arrive at the standing at the end of the course and for the inspection of the commandant, who thereby can keep himself informed of the work done by the officers during the term. *Failure at reexamination is deficiency* (regardless of daily marks) and the officer should be at once reported and recommended to be returned to his regiment.

1st Lieutenant W. D. Beach, 3d Cavalry, instructor, Dept. of Engineering, July, 1892.

There is one point in the system of marking in vogue, as required by paragraph 27, school regulations, that could, I believe, be changed with much benefit to this department, and that is, the system of daily marks. This subject has been given careful consideration, and its advantages and disadvantages appear to me to be about as follows:

ADVANTAGES

1. It requires of the student a continuous and careful attention to the work in hand during the term, in order to retain class standing.

2. It tends to inculcate self-reliance by demanding thought and study of the student in the preparation of a lesson, especially in the solution of knotty points that, under other circumstances, might be left to the instructor to explain.

3. It is a material aid in classifying the student on graduation; and may prevent a student who has neglected his work during the term but who has the faculty of "cramming for examination," from attaining a higher standing than one whose continuous daily work shows him to be more deserving of honors.

DISADVANTAGES

1. It makes each recitation partake, more or less, of the character of an examination, instead of being, what it should be, an hour devoted to instruction and explanation.

2. The instructor is continually hampered, in imparting information, by the fact that his mind must at the same time be diverted from the main issue, that of instruction, to that of assigning a numerical value to the student's knowledge of the subject.

3. It is a well established fact that the majority of students will, for the sake of a good mark, avoid asking questions, or evade direct answers on points that are not quite clear to them, thus defeating the very end for which instruction is furnished.

4. It is unjust to officers promoted from the ranks (in the majority of cases) to place them, from the start, on the same footing with graduates of the Military Academy, and expect them to compete for marks on equal terms; whereas, on review, after the subject has been gone over, explained, and discussed they would stand a more equal chance.

The disadvantages under the third heading are more marked where the students differ greatly as to previous training and knowledge of the subject (as is the case with the students here) for the reason that it is mortifying to a man's pride to show ignorance on a subject, that may not de displayed by keeping silent.

It is believed that if the system of marking were done away with and the recitation mark confined exclusively to the partial and general reviews of the subject, it would secure more uniform justice, besides allowing instructors to devote their entire attention to instruction, and induce student officers to, in all cases, have doubtful points cleared up, on the advance lessons.

The method and relative value of examinations are very satisfactory.

Colonel H. S. Hawkins, 20th Infantry, commandant, Aug. 1895.

The abolishment of daily recitation marks is strongly recommended. The student should be encouraged to ask for information from the instructor on points he does not clearly understand. This is often carefully avoided from the fear that, by showing such need of ex-

planation, he will be cut one or more tenths in his mark for the day.

At the Military Academy the system would seem to be a necessary stimulus to exertion and the only means of accurately estimating the daily progress of the students. But to the commissioned officer there should be a higher motive in the sense that the government is investing a certain capital in fitting him to make profitable return through increase of capacity for useful service

The cadet congratulates himself if on any one day he has been so fortunate as to recite upon the only portion of the lesson which he studied to the exclusion of all the rest. The idea never enters his head that the neglected portion is a positive loss to himself, unless, at some later day or at examination, such neglected subject should happen to be given out to him, in which case he merely looks upon his case as unfortunate. The officer instead of jealously watching for tenths should look upon the school course as a mine of knowledge wherein he is at work for acquiring all he can to enable him to make proper return to the government when called upon.

Captain W. D. Beach, 3d Cavalry, instructor, Dept. of Engineering, July, 1895.

After three and a half years' experience as an instructor at this school, I am more than ever confirmed in my belief that the abolishment of the daily recitation marks in the department of Engineering would be of lasting benefit. In this department, more than any other, the student should be encouraged to ask questions on points he does not clearly understand, for the reason that the course is progressive and a failure to fully comprehend elementary principles makes each succeeding step the harder. It is a fact, apparent to all the instructors and acknowledged as well by the student, that the latter will avoid displaying ignorance before his fellows, and, as he presumes, prejudicing his case before the instructor, by asking to have some knotty point cleared up, whereas if he were to be graded solely on practical work and examinations it would be to his interest to ask questions during the term and thus allow the recitation hour to become one mainly of instruction instead of examination.

Colonel H. S. Hawkins, 20th Infantry, commandant, August, 1896.

From the experience of the school year just closed it may be safely asserted that the abolition of the system of marking for daily recitations has proved to be a wise measure. The following remarks of the instructor in the department of Engineering cover the subject so thoroughly that they are given here rather than embodied in the printed copy of his report:

"The experience in this department has been almost entirely beneficial, for while we realize the fact that some students have made occasional careless recitations which the spur of the daily mark might have obviated, still, on the other

hand, the immense advantage to the student of having the instructor's mind free to impart instruction, answer questions, and make suggestions, more than outweighs the disadvantage referred to.

"From an instructor's as well as a student's standpoint, I can say confidently that absolute fairness in making oral recitations is impossible. One instructor will place a higher value on certain points of a demonstration than others; then again, one student will talk more fluently than another and deceive an instructor by avoiding points on which he is weak; while the further fact that one man may draw an easy subject to recite upon and another a difficult one, cannot be avoided.

"Under the marking system, my experience was that the student, especially if striving for honors, felt himself to be on the defensive, while the instructor acted as inquisitor; now there is more freedom for both, the student does not fear losing his place in the class by a possible accident, and the instructor does not have to divert his own mind from the matter under discussion to think of 'tenths.' In this connection it is pertinent to state that in the examination just concluded, and which covered the subjects of map construction, map reading, and miltary topography in general, more thoroughly than any previous one since the organization of this school, there was but one man who got less than eighty-three per cent; while in the corresponding examination two years ago there were fourteen with a lower per cent than eighty-three, or, to put the statement in another way, the examination just closed showing a general average of ninety-two per cent, while the class before, in the corresponding examination, attained an average of eighty-six per cent, and the class before that eighty-eight per cent. The reason for this remarkable advance in the general average of the examination is not obvious—the average ability of the present and the two previous classes being about the same; so that the reason must be due to different methods in instruction. The new text-book being fuller and more comprehensive probably accounts for most of the advance, but it is believed that part of the gain may justly be attributed to the freedom on the part of the instructor to give his entire attention to instructing, instead of having his mind diverted from that object in his endeavor to give the student a just mark on his recitation.

"Whether this conclusion is fully justified or not, I am satisfied that the doing away with the daily marking system has, on the whole, been a distinctive advance to this school."

The instructor in the department of Military Art remarks upon this point as follows:

"In the recitations during the past year the new regulation abolishing the recitation marks was carried into effect, with excellent results. It was formerly practicable for an officer to pass an indifferent examination and still take a respectable standing in class rank by virtue of a high aggregate of recitation marks. This is now impossible, as the result depends entirely upon the knowledge of the subject retained by the officer at the end of the term of instruction. It was feared that the abolition of recitation marks might materially affect

the quality of the recitations, but such does not seem to be the case. The recitations during the past year were, on an average, fully equal to those of the preceeding classes, and the examinations were, on the whole, the most satisfactory ever held at the school."

Captain W. D. Beach, 3d Cavalry, instructor, Dept. of Engineering, June, 1896.

The effect upon the welfare of the school caused by the radical departure in the new school regulations from the former system of marking the daily recitations, is worthy of note.

Captain H. A. Greene, 20th Infantry, instructor, Dept. of Law, June, 1896.

In my opinion, the experience of the last school year has demonstrated the fact that the system of not marking the daily recitations possesses advantages far outweighing any possible disadvantages.

Captain H. A. Greene, 20th Infantry, instructor, Dept. of Law, June, 1897.

The experience of the last year has confirmed me in the belief that the doing away with the system of marking the daily recitations and grading the student officers upon the results of the examinations has been beneficial; but the examinations should be very full and complete and great care exercised in weighing and marking each answer.

Colonel C. W. Miner, 6th Infantry commandant, July, 1903.

It is believed by the majority of the instructors and assistant instructors, as well as others connected with the college, who have given the subject much thought, that, under a different system of marking, some deserving and efficient officers who failed would have been graduated; under a system that compels a man to stand or fall on his examinations alone, these men simply could not "cram" sufficiently to pass, though their work in the recitation rooms throughout the year had been markedly better than many who graduated. There were several officers in the class who attracted attention in this respect. Two of them worked hard and faithfully from start to finish. They worked Saturdays, Sundays, holidays, evenings, and all the time. Their daily recitations were up to the average, and they apparently had a good knowledge of all subjects. Whatever they had to do, they did well, and stood well in the estimation of their instructors. But when it came to memorizing all of the book for examination, they simply could not do it, and failed to get their diplomas.

In another case, the man's daily recitation work was poor. His recitations were seldom, if ever, satisfactory to the in-

structor, though hardly poor enough to be called "unsatisfactory" in a technical sense and to be reported. In brief, his daily work for the year was indifferent, yet when it came to examination he was able, by "cramming" night and day, on general review and during the examination period, to pass successfully all of his examinations, and got his diploma.

For the above reasons, as well as because it is believed to be a fairer method, it is recommended that the system of marking be changed to one in which daily work shall count two thirds and final examination one third on graduation standing, and it is further recommended that if at the close of a school period any man has passed over ninety per cent in daily work he shall not be required to pass examination. It is believed that the above system will be conducive to excellence in daily work on the part of the students, and will be a more just one for all concerned.

WEST POINT, KENTUCKY,
September 24, 1903.

My Dear Bell:

I observe that Colonel Miner in his last report, has made adverse comment on the system of marking at Fort Leavenworth. In this connection, I would state that the old system of daily marks counting on examination was tried at the Infantry and Cavalry School for a number of years, and was found to possess more objections than advantages. It was finally overturned and the result was found very satisfactory. We thus oppose on the one hand a number of years of experience and careful observation to a single year under new conditions. I was so strongly impressed with the evils of the old marking system, and of the superiority of the one now in use, that I cannot help thinking that if the new system now seems unsatisfactory it must be due to other conditions in regard to either recitations or examinations which could be and should be remedied. I certainly hope that you will not take any action in the shape of approval of Miner's recommendation until I have an opportunity of talking the matter over with you.

Sincerely yours,
ARTHUR L. WAGNER.

Brigadier General J. Franklin Bell,
Fort Leavenworth, Kansas.

Captain Thomas H. Rees, Corps of Engineers, instructor, Dept. of Engineering, July, 1904.

The instructors 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, dem-

onstrations, 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 another 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		90
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.

INFANTRY AND CAVALRY SCHOOL,
SIGNAL SCHOOL AND STAFF COLLEGE,
FORT LEAVENWORTH, KAS.
March 20, 1906.

Major T. H. Rees,
Corps of Engineers,
Fort Leavenworth, Kansas.

Sir:

Referring to the views expressed by you in your annual report upon your department in the General Service and Staff College for the year ending June 30, 1904, concerning the system of marking then in vogue, and your recommendation that certain of the daily recitations be marked and that these marks be counted in figuring the standing of student officers, I have the honor to ask that you give further consideration to this subject in view of the following circumstances which did not exist, and therefore could have no bearing on your views, at the time they were expressed in the said report:

1st. The Staff College and Signal School have both been established since that time, and a competition is now conducted in the Infantry and Cavalry School with a view to determining which of the members of the Infantry and Cavalry class are to be designated for further instruction in the Staff College and in the Signal School. In order to create and maintain confidence on the part of the student body in the fairness and equity of this competition it has become more necessary than formerly that the system of marking should be as scientific and accurate as possible. In some institutions instructors act more in the capacity of judges to determine just how much each student officer knows of the subject being recited upon than as instructors to explain and teach to them what they do not understand or do not seem to know. In this institution the latter function is considered the more important of the two obligations resting upon the instructor. If he does his full duty as an instructor and enters into a full discussion with student officers, as it is desired he should do, it is thought it would be rather difficult for him to mark the daily recita-

tions of student officers accurately and equitably, inasmuch as it would be difficult for him during the discussion to give any considerable attention to determining what portion of the subject the student actually knew and what he did not know. Fixing his mind upon such an effort as this would materially hamper his freedom of mind in giving instruction. If, disregarding his obligation as a judge, he entered enthusiastically and freely upon his obligation as an instructor, the mark he would be called upon to assign the recitation would necessarily be more or less of an estimate or guess as to the real comparative value of the student's actual knowledge. This would tend to render daily marks less accurate than the marks upon papers submitted in written examinations and deliberately marked after careful and accurate comparisons with the text-book as a standard. This remark applies with equal force to the marking of written solutions of problems or other practical work recorded in such a manner as to admit of accurate comparison with a fixed standard.

2d. Daily recitations have now been abandoned in the law course, which consists exclusively of the conference or lecture and quiz system, supplemented by written solutions of certain practical law problems. Marking is, therefore, exclusively done on written examinations and on the written solutions of these problems.

In the department of languages the same system as the above is also employed, with the addition of marking on phonograph records which are accurately compared with standard records, and also marking on certain oral tests (a part of the examination system) in which the instructor sits exclusively as a judge.

A part of the instruction in the other departments, namely, Military Art. Engineering, and Hygiene, is also now given by lectures to which it is not practicable to apply any daily marking system whatever.

3d. This triple-headed institution (composed of the Infantry and Cavalry School, Signal School, and the Staff College) now tends more strongly than it did at the time you wrote your report to resemble universities, where daily marking systems are never employed. It is thought that to adopt any kind of daily marking system under such circumstances might be deemed a step in retrogression rather than in progression.

It is respectfully requested that you take the above circumstances into consideration with a view to determining and reporting whether, under the changed conditions above set forth, your views and recommendations are considered as applicable to the new system as to the old which you had under consideration at the time you made the report in question.

Very respectfully,

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

HEADQUARTERS,
THIRD BATTALION OF ENGINEERS,
FORT LEAVENWORTH, KANSAS,
March 21, 1906.

Brigadier General J. F. BELL, U. S. Army,
Commandant Infantry and Cavalry School and Staff College,
Fort Leavenworth, Kansas.

General:

With reference to the system of marking applied to the courses of instruction in the Infantry and Cavalry School and to my recommendations thereon made in July, 1904, I desire to state that those recommendations were based on the methods of instruction that obtained at that time and that were prescribed by the regulations governing the school, and requiring that each recitation period should be of one hour's duration, that actual instruction consisting of explanation of the lesson and answering questions on parts of the lesson not understood by the student officers should be confined to the first ten minutes of the hour and that the remainder of the hour should be devoted entirely to the hearing of the recitations of the student officers and pointing out their errors, without further elucidation or explanation. Under that system of instruction the marking of daily recitations was a natural and logical consequence. Even at that time, however, the methods of instruction had undergone some change, and it was recognized that academic and pedagogic methods of instruction were not applicable to the officers who composed the classes of the Infantry and Cavalry School. The school had already developed beyond the hopes or expectations of its founders, because it had been reorganized on principles and laws that were basic and fundamental, and therefore self-operative. A law is not a *law* unless it carry within its own terms the certainty of fulfillment. A law that is a *law* requires no regulations, no orders, to effect its execution. Regulations, conditions, and orders that are not based on fundamental law are inoperative and futile. Arbritrary force may for a time compel compliance with such regulations, but the law that is transgressed will most certainly oppose greater and greater resistence to transgression and will ultimately prevail. This is what has happened in the service schools at Fort Leavenworth. The school regulations first applied did not take cognizance of the natural tendency to growth and development that was inherent in the wise laws upon which the schools were founded. Academic and pedagogic regulations failed because they were opposed to the law of development, and the methods of the university naturally took their place.

Instruction by study and recitation is now rather the exception than the rule, having been replaced largely by instruction by lectures, demonstrations, explanations, problems, discussions, and practical work.

Under these new and improved methods of instruction the marking of daily recitations, would, in my opinion be a

distinct step in retrogression, and I am now in favor of continuing the present method of marking only on examinations, problems, and practical work.

Very respectfully,
THOS. H. REES,
Major, Corps of Engineers,
Commanding Battalion.

Maj. W. W. Wotherspoon, 6th Infantry, instructor, Department of Tactics, June, 1904.

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 far 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.

1. 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 the 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 con. It is not proposed to review these arguments here, but to record my individual belief that it would be more just 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.

2. 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 committed 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 con-

vey 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 ommissions 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.

3. 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 students 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 mark 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 the 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 quickly 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 mark 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.

The same letter as was addressed to Major Rees (see page 10 of this appendix) was sent to Colonel Wotherspoon and the following reply was received thereto:—

FORT LEAVENWORTH, KAS.,
June 29, 1906.

Brig-General J. F. BELL,
Commandant Infantry and Cavalry School and Staff College, and Chief of Staff, U. S. Army.

Sir:

In reference to the marking system used at the Infantry and Cavalry School at Fort Leavenworth, Kansas, an opinion on which I submitted in June, 1904, and further consideration of which has been invited by you in view of the changed conditions at the school since that opinion was given, I have the honor to state that this subject has been one to which I have given much thought since I was first connected with the Infantry and Cavalry School. It is so difficult to develop a system that will meet all objections that it is in my opinion better to allow time for the approximately perfect system to develope itself. The school is growing and developing steadily and rapidly. The character of the students is improving under stimulating conditions and it is reasonable to suppose that

in time progress will be made toward the solution of this vexed question. Meanwhile, until opinion has crystalized, it is best to maintain a system which, while not ideal, has produced excellent results if, as it must, the steady improvement in the character of the work done is to be taken as a test.

In my former opinion, given in 1904, I stated that there was an indication that to attain an approximate idea of the proficiency of the students some consideration should be given to the character of their work in the period during which they were preparing for the examination in any subject and stated that this indicated in my opinion the need a return to the system of marking daily recitations. The development in the school since that opinion was given, particularly in the direction of more intimate relations between the instructors and students in the section room by which the formal recitations are gradually being superseded by discussions, quizzes and lectures, causes me to change that opinion and to now state that I do not believe a return to the marking of recitations is desirable or would be for the advantage of either the student or the school.

Whilst stating that I do not now believe a return to the marking of daily recitations would be advantageous I do not wish to be understood as having changed my views as to the need of developing some just method of recognizing the exertions made by student officers to prepare themselves for an examination. The standing of each student should not in my opinion depend entirely on the marks attained in an examination; some allowance should be made which would compensate a good and earnest student for any loss that might, after months of hard study, result from physical or mental exhaustion or derangement. I am not prepared at this time to suggest what that allowance should be—it is a most difficult matter to determine, but I am convinced that in the course of time some equitable means of adjusting this difference will be found.

Very respectfully,
W. W. WOTHERSPOON,
Lieut.-Col., General Staff.

Daily Marking System.

Resume of Extracts from Annual Reports of Commandants of the School for Past Years Pros and Cons.

Advantages of daily marks.

Beach July, 1892.

1. Requires of student continuous and careful attention to work during term in order to retain class standing.

2. Tends to inculcate self-reliance by demanding thought and study of student in place of having knotty points explained by instructor.

3. Is a material aid to classifying students and prevents one who has cramming faculty from coming out higher than one who has done more deserving work during the term.

Disadvantages of daily marks.

1. Instead of being devoted to instruction and explanation, each recitation becomes more of the character of an examination.

2. The instructor, in place of imparting information, is continually hampered by trying to assign a numerical value to the student's knowledge of the subject.

3. To avoid a possible poor mark the majority of students will not ask questions and have points cleared up.

4. Unjust to the officers from the ranks to place them from the start on the same footing with Military Academy graduates. Therefore recommends doing away with marks except on practical and general review.

Hawkins August, 1895.

Recommends abolition of daily marks, because the student should be encouraged to ask for information on points he does not understand. This is often carefully avoided for fear of being cut one or more tenths.

Beach July, 1895.

A failure to ask questions on points not clearly understood makes each succeeding step the harder; whereas if graded solely on practical work and examinations it would be to the student's interest to ask questions during the term and thus allow the recitation hour to become one mainly of instruction instead of examination.

Hawkins August, 1896. Quotes from instructor in engineering after abolition of daily marks was put into effect:

"Absolute fairness in marking oral recitations is impossible. One instructor places a higher value on certain points than another; one student will talk fluently and avoid points on which he is weak; one will draw an easy subject, another a hard one."

(It might also have been added as a reason why it is impossible to mark oral recitations with absolute fairness that a number of different instructors participate in marking oral recitations whose personal equations differ. One may be a very liberal marker, another a very close marker. Unless each instructor marked the same number of recitations for each man in the class, which is impracticable, the record of marks would not be equitable. J. F. B)

"Owing partly to different methods of instruction, as necessitated by abolition of daily marks, the general average of the class in the examinations in the department of engineering was raised in 1896 from 86% for preceding year to 92%."

Quotes also from report of instructor in military art:

"Formerly it was practicable for an officer to pass an indifferent examination and yet have good class standing by virtue of a high aggregate of recitation marks, whereas now result depends entirely upon the knowledge of the subject retained by the officer at end of term of instruction."

"Recitations proved to be fully equal to those of preceding years, and the examinations were, on the whole, the most satisfactory ever held at the school."

Greene June, 1897. The doing away with daily marks has been very beneficial, but the examinations should be very full and complete and great care exercised in weighing and marking each answer.

(Examinations cannot possibly be too full and complete nor can too great care be exercised in weighing and marking each answer. J. F. B.)

Miner July, 1903. Recommends daily mark count $\frac{2}{3}$, final examination count $\frac{1}{3}$, and that 90% in daily work should exempt from examination.

Two student officers were deficient on examination whose term work had been satisfactory, but they couldn't cram whole

books for examination, whereas one officer, who did poor daily work, crammed for examination and got his diploma.

(When a student officer, whose term work has been satisfactory, fails on an examination, it simply indicates one of two things, either that he did not study for the examination, or could not retain in his memory what he memorized for daily recitation. Inability to cram for an examination may be a misfortune, but it is nothing to be proud of, neither is ability to cram anything to be ashamed of. An officer who does poor daily work but is able to learn for his examination simply indicates a brightness of intellect and readiness of memory which is very creditable to him.

As showing the tendency away from daily marking even at West Point the following is quoted from the annual report of this year made by the Superintendent of the Military Academy:

"During the past academic year the experiment was tried in the department of mathematics of not marking the fourth class on advance—that is, the first time over the subject. In this department each subject is covered three times—by advance, review, and general review, respectively. Marks were given only on review and general review. *This left the instructor free, the first time over the subject, to give in the section room all necessary assistance.* The concensus of opinion among the instructors of the department making the experiment was strongly in its favor."—J. F. B.)

Rees July, 1904. Officers should get credit for sustained and continued efforts in section room in place of hazarding all on a final examination that some can and others cannot cram for.

Recommends recitations and practical work count $\frac{2}{3}$ and examination count $\frac{1}{3}$ of total.

(Position receded from under new and changed conditions).

(Sustained and continued efforts in section rooms always result in better preparation for examinations,

and therefore an officer does get credit for it. As is well known, no officer can stand well in the Infantry and Cavalry School who neglects daily work. It is absolutely impossible for him to cram so well for examinations as to make up the handicap imposed by neglect of daily work.

As Colonel Kline suggests, it certainly seems incongruous to graduate a student officer who fails, not only on examination, but also on reexamination. Yet this might become necessary were a return made to any kind of daily marking system in which a proportionate value was to be allowed for the credit gained by daily marks. J. F. B.)

Gen. Bell March, 1906. Owing to competition determining who of Infantry and Cavalry School shall become members of Staff College and Signal School, it is more necessary than ever that the system of marking should be as accurate and scientific as possible.

Instructor's function is to instruct, not merely to act as judge of what each student officer knows or doesn't know. Performing his proper function, it becomes impossible for instructor to mark daily recitations accurately and equitably.

The university system of teaching in some of the departments has done away with the possibility of giving equitable daily marks.

Wotherspoon June, 1904. Any slight indisposition at the time of examination or a lack of capacity to write steadily for a number of hours (8) consecutively might place a student who had made excellent recitations throughout the course at a disadvantage compared with a fellow student who, having made indifferent recitations for months, was in good physical condition at the time of his examination, or who was able to write without undue strain for a number of hours consecutively.

(Though this argument certainly seems reasonable, speaking from practical experience there does not appear to have been a case in three years where any student officer has seriously suffered in *standing* from the danger here apprehended.

Colonel Wotherspoon receded from above position except principle that a student should get something for his good term work.—J. F. B.)

Aside from differences as to marking methods, there always has been and probably always will be numbers of officers who believe that any marking system whatever is objectionable. Perhaps the general objections to any marking system whatever have been as well and comprehensively stated by the Acting Inspector-General, in the report of his inspection of the school during June of this year, as they have ever been. For this reason I shall take up the comments made by the Acting Inspector-General in that report, and comment upon them seriatim:

1. "The system of instruction in the Infantry and Cavalry School * * * * with its close marking and keen competition, is undoubtedly the one best adapted to secure from student officers the most work, but in my judgment it is not the system best adapted to secure to the class as a whole the most valuable results. In my own experience as instructor and somewhat extensive experience as student, I have observed that under this close marking system commonly known as 'specking,' students are inclined to work for tenths instead of working for a comprehensive knowledge of the subject."

A marking system does result in keen competition, and competition which sometimes has become so desperate in the Infantry and Cavalry School as to be regrettable; but it is my conviction, reinforced by ample experience, that with the class of students who have thus far been matriculated in the Infantry and Cavalry School some marking system is absolutely essential as an incentive to study and as a means of insuring conscientious and faithful work. It is perfectly true that with at least half of every class no marking system would be necessary to call forth conscientious effort to acquire knowledge; but effort on the part of the other half would just as certainly not be satisfactory.

With reference to all marking systems which have been used in the Infantry and Cavalry School, much has always been made, by those who oppose marking,

of so-called "specking" and of working for tenths rather than for knowledge. To a liberal mind there can be no question that *any* marking system will tend toward encouraging and developing both of these objectionable features in the efforts of student officers; but as circumstances alter all cases, so in this instance have special circumstances and measures tended to reduce to a minimum the ill result which usually follows upon "fly-specking" and working for tenths.

In the first place, to clarify the atmosphere, it is necessary to analyze and bear in mind what it really is that causes "fly-specking" to be objectionable. No one will pretend that merely memorizing something which is clearly understood is any disadvantage other than possibly an unwise use of time or a possible crowding of the mind with unimportant details. These are not serious objections *per se*, provided there be sufficient time, for unimportant details will generally be crowded out by more important ones subsequently learned.

The real and serious objection to "fly-specking" is the learning, parrot-like, by constant repetition, something which is not understood at all, which, being glibly repeated in the class room, misleads the instructor and causes him to give to the student a greater degree of credit than he really deserves. This objection is more or less minimized, first, by the system of instruction in the class room at the Infantry and Cavalry School, which is directed specially to the question of understanding. Positive methods are adopted for the purpose of determining whether the student officer understands what he repeats and to explain where necessary. Furthermore, recitations are not, as is frequently erroneously assumed, marked at all. The entire time of the instructor can, therefore, be

given to elucidation, and as the student officer is not marked, and is given no credit whatever for parrot-like recitations, he has no incentive to memorize for tenths, but as he must subsequently apply what he remembers in the solution of practical problems, it is absolutely essential that he shall understand what he studies. There is, for this reason, every incentive to acquire, during the recitation hour, a clear understanding of what he has learned. In examinations, papers *are* very closely marked, and it might be assumed that here ability to "fly-speck" would count too much and give undue advantage. So it has in the past; but, as experience has accumulated, methods have been adopted in examinations to test the student officer's actual understanding by so framing questions as to require him to apply all knowledge gained, rather than repeat words which have previously been memorized. Thus many examinations become in reality a series of problems rather than a collection of questions admitting of memorized answers.

When all is said and done, however, it must be acknowledged that there is no way to eliminate the advantage consequent upon a good memory or capacity to memorize. And now pray let us ask, why should this advantage be eliminated? Is a good memory a fatal defect? Is it such a defect in military matters as to cause a soldier to scorn its possession? In fact, to be frank and direct, is there one single quality more valuable to a staff officer, we will say—for the purpose of conservative limitation—than a good memory? Then why underrate the value of its cultivation? If one officer has a greater capacity to memorize—even for temporary use—what he wants to know, is there any one who can demonstrate that this is not a valuable advantage which he possesses over one who has less capacity in this line.

Memorizing cultivates the memory, and in my judgment the ability to remember details is a possession of exceeding value to any officer, be he serving in the staff or line.

There is also opportunity, freely embraced in the Infantry and Cavalry School, to withhold undue credit from mere capacity for "fly-specking," unaccompanied by corresponding ability to understand and apply, in the assignment of values to the different classes of work. For instance, in the department of military art, which counts for more than any other department in the institution, the value allotted to theoretical work, in which examinations are held, amounts to about one third of the total value assigned the department. The rest is allotted to practical work, in which there is no advantage in "fly-specking" except that which arises from ability to impress principles upon the memory so they can be accurately recalled in applying them to the solution of problems.

Now as to the tendency to work for tenths rather than for comprehensive knowledge:—If the daily recitations were marked this disadvantage would have a seriously injurious effect, but as recitations are not marked at all, there is, as above stated, no incentive to work for tenths in them. A student can't work for tenths in an injurious way on written examinations of such character as the majority of those had in the Infantry and Cavalry School, where they consist mainly of problems requiring the application of knowledge which is clearly understood and retained in the mind. I would not be interpreted as denying that student officers work for tenths. They do; but not, in my judgment, in an injurious way. If measures are adopted which cause the student officer to work four or five time as hard for tenths as

he would for knowledge pure and simple, and if these measures guard against his merely memorizing like a parrot, is there any one who can demonstrate that he will not actually acquire more knowledge than if merely working one fifth as much for the love of knowledge alone?

The character of the knowledge it is intended he should acquire in the Infantry and Cavalry School also has an important bearing on this discussion. There he is learning elementary principles, both by study and application, which he will later be called upon to utilize and apply more extensively in the Staff College. In my judgment it is of the utmost importance that he shall learn these principles thoroughly and should remember them so well that he will not be continually searching through text-books in quest of principles which he is constantly required to utilize in practical work in after service. This is so important that a student in the Infantry and Cavalry class cannot possibly acquire too thoroughly and permanently the knowledge there imparted. There are many who have claimed that the "time wasted" in the endeavor to "fly-speck" the course in the Infantry and Cavalry School could be better spent by its student officers in the acquirement of general knowledge in the library. In view of the importance of remembering and clearly comprehending the elementary principles taught in this school, I doubt if this claim be true; but even if it is, it can safely be asserted that no student officer in the Infantry and Cavalry School will ever endeavor to acquire any knowledge outside of the course in that school so long as a competition for entrance to the Staff College is conducted therein. Every minute of this time, on the contrary, will be devoted to perfecting his knowledge of that course, even to "specking" it.

The system of marking in the Signal School has already been abandoned, because deemed unnecessary to the purpose of securing conscientious, faithful work therein.

In my opinion, the close marking and consequent competition in the Infantry and Cavalry School is that system, all things considered, which is best adapted to secure to the class as a whole the most valuable results.

2. "Another important consideration in this connection is the spirit of dissatisfaction aroused by the one system and the opposite spirit developed by the other. It is believed that this system must of necessity impress upon the new student officer the feeling that he is more or less of a schoolboy, a feeling distasteful to any officer, especially so to an officer of several years' service, and to one who has presumably been selected for this duty because of special qualifications and ambition. The officer who, under this system, secures the highest marks, is not necessarily the best man for the Staff College, nor is he the best qualified for the performance of delicate and important duties."

Poor students the world over are always better satisfied when not marked than when they are; but this is no argument for the abandonment of a marking system, if circumstances make such necessary or advisable. Furthermore, save in exceptional cases, dissatisfaction exists only while undergoing the ordeal, under heavy pressure—not after it is all over, when results only are considered. We should not judge a system by dissatisfaction on the part of the unsuccessful. We should rather be guided by the opinion of the successful after the ordeal is over.

It is not believed that the system now employed in the Infantry and Cavalry School will cause any earnest student officer to feel like a schoolboy. The officer who secures the highest marks is not, it is true, *necessarily* the best man for the Staff College, but the marking system is, in my judgment, better calculated to develop and display all his qualities to his instructors, and affords a better means of deciding

fitness for the Staff College, than the judgment of the instructors alone, unaided by any marking system. That the officer who secures the highest mark may not be the one best qualified for the performance of delicate and important duties is not conclusive proof that a marking system is wrong *per se*. It is my deliberate and well-considered conviction, based on three years' experience with the marking system in the Infantry and Cavalry School, that it is also better calculated to determine the relative fitness of officers for delicate and important duties than would be the unaided judgment of instructors.

The main endeavor of the Infantry and Cavalry School is to fit officers for duties which are important but not *especially* delicate.

3. "It is held by advocates of the present system that set recitations and a close system of marking on the work done, generally, are essential to proper grading and equitable selection of students for the Staff College."

It is not understood what the inspector means by "set recitations." If he means recitations at the blackboard which are marked, such are no longer employed in the methods of instruction in the Infantry and Cavalry School, and I know of no one who advocates them.

The methods of instruction now employed at Leavenworth are closely allied to those in use in modern, progressive *universities* the world over.

It is my conviction that a close system of marking, on the work done generally, *is* absolutely essential to proper grading and equitable selection of students for the Staff College. No system of selection for the Staff College, influenced by personal judgment, could possibly be devised which would be satisfactory to officers of the army at large. If we are going to have any marking system at all, there is no reason why it should not be close, impartial and

thorough, and be the sole means of selection for the Staff College. A competition fairly conducted appeals to the sense of justice and satisfaction of everyone. No competition could be fairly conducted without a close marking system For the commandant, assistant commandant, and heads of the various departments to undertake, in their judgment, even aided by confidential marks, to select students for so high an honor as admission to the Staff College, would speedily result in destroying the confidence of the student body in them and ruin the Infantry and Cavalry School. The selection of a student for the Staff College by the faculty would necessarily rest upon the relative degree of favorable impression he had managed to make upon them. They would naturally select those students who had made the most favorable impression, and such a system of selection would open wide the door to sycophancy and favoritism of every kind. No one would any longer have confidence in the intellectual qualifications of matriculants to the Staff College, and the prestige which attaches to the winners in the competition as now conducted would be gone forever. The honor of being a graduate of the Staff College would be very materially diminished, and much animosity and bitterness would certainly be engendered.

4. "It appears to me that, under this system, the main object of the Infantry and Cavalry School, viz: 'The instruction of specially selected officers' (presumably, this means all officers selected for the Infantry and Cavalry School) 'in the higher branches of military art and science not embraced in the garrison school course; to improve its students as to their qualification as instructors; to offer them exceptional advantages for professional improvement and opportunity for distinction,' has, in a measure, been subordinated to the idea of preparation and selection of officers for the Staff College."

The main object of the Infantry and Cavalry School has not been *subordinated* to the idea of prep-

aration and selection of officers for the Staff College, but this idea has become an important consideration in conducting the work of the Infantry and Cavalry School. As elsewhere indicated, it is believed that the requirements of all of the objects of that school are better met by this system than they would be by the system the inspector advocates.

5. "The most far reaching and beneficial results of a professional school for officers must be looked for not from a system which crowds into the student's mind the most information in the limited period allowed, but from that system which cultivates fondness for study and ambition for investigation and advancement and which best equips the student for such future work."

Ambition for advancement needs no cultivation. We are not especially trying to create *students* or ambition for *investigation*. We think we have more important aims than merely fitting officers for such future work as *study* and *investigation*. We are mainly trying to teach them how to do well any practical duty assigned them. There has never been a time when the army has had a need for students and investigators—too often mere theorists—so great as that it always has for laborers in the vineyard who do things—for staff officers who spend their time "delivering the goods" instead of studying, investigating, and telling others in service periodicals how things *ought* to be done. I fully agree with the superintendent of the Military Academy "that a thoro knowledge of fundamental principles and how to apply them is a higher standard of scholarship than a shallow knowledge of wider scope." The Leavenworth system does incidentally promote a love of professional reading and study, because it creates an ability to thoroughly understand and appreciate the interesting points of strategy and tactics as illustrated in military history and the contemporary productions of military authors.

Borrowing and paraphrasing some of the sentiments found in a recent address by an American statesman:

We try to arouse at Leavenworth the divine spirit of achievement, the noble art of getting things done. We have no objection to men who dream, provided they dream practically, but we strive to create a conservative atmosphere—not the bourbon conservatism of chronic objection and carping criticism toward everything new, but the progressive conservatism of practical common sense. We recognize that we must deal with men as they are and not with men as we would have them, that we must accept conditions as they exist in order to make those conditions what they should be. We try to develop in officers whatever endowment God has bestowed upon them of practical genius, of iron hand, of energy, fortitude and submission, of thoughtful tact, of kindly consideration, and of human qualities to moderate the rest. Such men are requsite to write into workable orders and regulations needed reforms, to get those things done that the army wants done, to build into real structures the army's aspirations and to secure by something more than words and preachments the army's progress. We have no crying need of idealists, of theorists in the army. Like the poor they are ever with us in sufficient numbers. We need practical men with the skill and knowledge that enables them to use for the army's good the qualities of human nature as they find them; men with the common sense which compounds for the welfare of the army not only the strength but also the weakness of those with whom they work.

The idealist is never satisfied with the stones he finds on the river's bank but insists they shall be perfectly cut and polished for his sling; the doer takes the stones he finds, puts them in his sling and slays his Goliath. The idealist insists that his shall be made to fit before he begins; the doer begins with those he finds. The one never begins at all, but spends his time agitating for suitable plans and ammunition; the other finds interest in using the plans and ammunition prescribed for him and is content with improvement developed by practical use; and therein lies the difference between the dreamer and the achiever. Both are necessary; both are conscientious. One is, too often, a pessimist who never finds anything as it ought to be and consumes his energy in ill-digested criticism and impractical suggestions; the other a cheerful optimist who finds contentment in doing what he is told to do. One is satisfied with nothing not achieved in accordance with his own ideal plan; the other attributes to others motives and abilities as good as his own and is satisfied with results however achieved.

Let us pray that the Leavenworth spirit may be practical, modest, industrious and optimistic—too busy to sour the atmosphere with fault-finding pessimism.

Even if it were practicable to give every infantry and cavalry officer a two years' course in the Infantry and Cavalry School, there are always liable to be a few officers in each class on whom it would be almost a waste of time to expend a second year of instruction. But it is *not* practicable to give two years of instruction in the Infantry and Cavalry School, and it is desired to give to the student officers therein as thorough and comprehensive a course in one year as possible. It cannot be disputed that what they learn under the present system is very valuable to them without the higher and finishing course in the Staff College. More than half of each Infantry and Cavalry class has a second year of instruction, under such circumstances as to cultivate fondness for study and ambition for investigation. The Infantry and Cavalry School should not be judged alone, but as an integral part of the Leavenworth system.

An educational system must be judged as a whole and by its results, and not by an isolated few of its features wherein may be found possible disadvantages. No system can be ideal. All are subject to some disadvantages. The real solution of the problem lies in contrasting the advantages with the disadvantages and adopting that system in which the former outweigh the latter to the maximum degree.

The three schools at Fort Leavenworth are coordinated and inseparable parts of one system. They afford to the body of student officers an admirable opportunity to differentiate themselves and determine relative merit in a fair and equitable competition. This is the only way in which an opportunity can be given them for achieving distinction, and the results afford the War Department the best obtainable means of judging comparative intellectual merit and usefulness.

6. "It is believed that under the other system of instruction these results would be more nearly realized, less discontent on the part of the student officers would exist, a grading of a more general—yet of equally valuable nature—would be practicable, and selections for the Staff College could be equitably made by the commandant, assistant commandant and heads of the various departments."

As already stated, any possible system of selection for the Staff College would create greater discontent on the part of student officers than now exists, and, for reasons already given, it would be exceedingly inadvisable and unfortunate for the school if selections for the Staff College were left to the judgment of the commandant, assistant commandant, and heads of the various departments.

In all that has been said by the inspector on this subject it does not seem to have occurred to him that there are any advantages whatever connected with the competition conducted in the Infantry and Cavalry School for entrance to the Staff College. Judging from experience I know of no attributes more valuable to a professional soldier than patience, perseverence, fortitude, determination, tenacity of purpose, industry, and capacity for labor. All of these are more potent in bringing about great achievements in the world than are either exceptional intellect, fondness for study and investigation, or genius alone. These latter qualities never accomplish anything without a mixture of the others. The competition for admission to the Staff class affords an admirable opportunity for the cultivation of all of the former traits of character. It affords such a test thereof that it can safely be asserted that those who win in the competition, absolutely possess them to a greater degree than those who lose. Opportunity for officers to demonstrate their possession of them is not only valuable to themselves but also to the War Department.

7. "It is understood that, hereafter, artillery officers who contemplate entering the Staff College, will first be required to take the course in the Infantry and Cavalry School. This, to my mind, is undesirable; the year so spent in school could, for an artillery officer, be spent elsewhere with more benefit to himself. Without the advantages of the course in the Infantry and Cavalry School, the artillery officer will doubtless be somewhat handicapped in his college work, but this he should be able to overcome, especially if he is an honor graduate of the Artillery School, which should be the case."

Artillery officers *will*, hereafter, be required to take the course of instruction in the Infantry and Cavalry School and to win in the competition in order to enter the Staff College. This puts them on an equal footing with officers of engineers, cavalry and infantry, and they should neither expect nor desire more. It is a matter of opinion, as indicated by the inspector, whether an artillery officer could derive more benefit to himself by spending a year elsewhere than in the Infantry and Cavalry School; but if he ever expects or has any ambition to command troops of a mobile army there should not be any difference of opinion among intelligent men as to the question of comparative benefit. An artillery officer without the advantages of the course in the Infantry and Cavalry School is *seriously*, not "somewhat", handicapped in his college work, and is rarely if ever able to overcome this handicap (no matter whether he be an honor graduate of the Artillery School or not) so successfully as to achieve a high relative degree of efficiency in the work of the Staff College. Every artillery officer who has thus far graduated from the Staff College has felt the effect of this handicap. The handicap is naturally more serious in the beginning of the course in the Staff College, and as it is gradually overcome its degree becomes less and less, and thus it is that toward the end of the course in the Staff College the artillery officers can begin to feel relieved and

on an equal basis with their more fortunate comrades who are graduates of the Infantry and Cavalry School. My reasons for advocating requiring artillery officers to take the Infantry and Cavalry School course as a preparation for the course in the Staff College are fully set forth in the following letter, which is worthy of publication here:

STAFF COLLEGE,
Fort Leavenworth, Kansas,
March 16, 1905.

The Military Secretary,
War Department,
Washington, D. C.

Sir:

I have the honor to recommend that hereafter artillery officers recommended, under the provisions of paragraph 230, General Orders No. 115, War Department, series 1904, by the Chief of Artillery for instruction in the Staff College, be required to take the course in the Infantry and Cavalry School prior to entering the Staff College. This recommendation is based on the following considerations:

1. The instruction given in the Infantry and Cavalry School and the Staff College is so closely co-ordinated that no officer, however apt or intelligent he may be, can get the full benefit of the Staff College course without having previously taken that of the Infantry and Cavalry School, on which much of the instruction in the Staff College is based.

2. In the near future, graduates of the Staff College will probably figure prominently among those officers from whom selections for the War College and General Staff are made. Without a comprehensive and definite knowledge of the organization and tactics of infantry and cavalry (the largest components of armies in time of war) officers cannot be fully qualified for every class of work in the War College or General Staff.

A thorough knowledge of security and information, and considerable *practice* therein, is also exceedingly valuable, if not essential, to any officer in time of war. Few artillery officers have, in time of peace, opportunity for as adequate instruction and training in this duty as is given in the Infantry and Cavalry School. I know of no other place where facilities exist for giving it so thoroughly or satisfactorily.

3. During a portion of each year the student officers in the Staff College are utilized to assist in giving practical instruction to student officers of the Infantry and Cavalry School *in the departments of military art and engineering.*

Though most any bright officer who has recently studied engineering and been given practical instruction therein is

fairly competent to assist in giving practical instruction in that art, without *special preparation*, it is unquestionable that such previous preparation as he obtains in the Infantry and Cavalry School would materially increase his ability to subsequently render satisfactory assistance in giving practical instruction to student officers of that school.

They are *not* qualified, however, *without previous preparation*, to give satisfactory assistance in imparting every kind of practical instruction which is given to student officers of the Infantry and Cavalry School in the department of *military art*. Student officers of this school have little or no confidence in the familiarity of any one with the practical work taught in that department unless they have previously gained it by experience in the course of instruction in the school. I am here particularly referring to the knowledge and methods used in conducting and criticising work in map problems, terrain rides, and field exercises in grand and minor tactics. In infantry and cavalry work, artillery officers who have had no previous experience or competent instruction in such work, are not qualified to serve satisfactorily as critics or umpires of infantry and cavalry officers, some of whom are captains with considerable length of service and experience. There is one captain now in the Infantry and Cavalry School who has had over twenty years of service and experience as an officer The number of captains of long service and experience entering this school is liable to increase in the future.

5. It is assumed that any artillery officers selected by the Chief of Artillery, will be capable of earning, by competition in the Infantry and Cavalry School, the right to enter the Staff College. But in order that it may become a settled rule (after the adoption of this recommendation) that no officer can enter and graduate at the Staff College without having earned the privilege by participation in identically the same competition, it is further recommended that no artillery officer failing to graduate among the twenty highest graduates of the Infantry and Cavalry School be permitted to enter the Staff College. The number is fixed at twenty because fifteen officers from the infantry and cavalry, three from the artillery and two from the engineers (total, 20) compose the Staff class.

6. It will unquestionably and materially increase the confidence of the army in the merits and worth of the graduates of the Staff College when it is known that no man can enter that college without having earned the privilege in the same competition impartially conducted under the same conditions for all matriculates.

7. I do not lose sight of the fact that this proposition involves passing seven years of their military service at school for those officers who are graduates of the Artillery School, as well as West Point, but no one can dispute that the proposed instruction is liable to be beneficial to the service, as well as to the officers concerned. No ambitious officer

should have reasonable objection to undergoing the ordeal, and considering the end in view—giving a high degree of preparation for very important duties to a *few* selected officers of exceptional capacity—it is believed that, in time of peace, their time could not be better employed, the interests of the government being alone considered, to say nothing of the interests of the officers themselves.

8. From 1889 to 1898 I was exclusively and frequently engaged, from time to time, in the work of supervising, and assisting in giving, practical instruction to troops in minor tactics. Though I had learned much by personal study and experience, I always felt handicapped in this work by lack of such instruction as is given nowhere else so well as in the Infantry and Cavalry School. I feel confident that I would have been able to perform more valuable work for the service, in this connection, than I did, had I had previous instruction in this school. Any artillery officer is liable to be called on to serve in war in conjunction with the infantry and cavalry arms of the service. As many of them as possible should be made perfectly familiar with all the requirements of minor tactics which apply to infantry and cavalry.

10. A recommendation similar to this has also been made as to engineer officers.

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

It is earnestly hoped that before any commandant consents to recommend any change in the system of marking or competition now existing in the Infantry and Cavalry School, he will carefully read and consider the contents of this appendix.

Persistent and painstaking study and consideration and a fortunate idea which occurred to the late Colonel Wagner, together with determined effort, has resulted in developing a system of instruction in three co-ordinated schools at Fort Leavenworth which is entirely unique in the line of educational institutions for the reason that there is nothing like it in the world. Adding to the corps of instructors in the Infantry and Cavalry School the number of students officers in the Staff College who perform duty as assistant instructors in the Infantry and Cavalry

School, we have an institution in which the number of instructors is equal to the number of students. There is probably not another institution of learning in the entire world which can truthfully make such a claim. The value of the advantage derivable from this condition is incalculable. Without the assistance of Staff College students it would be utterly impossible to conduct the practical work in the Infantry and Cavalry School so efficiently as it is now conducted or to have so much of it. In my judgment it is the ability thus afforded to include in the course of instruction in the Infantry and Cavalry School so much practical work which makes instruction in that school so valuable. I do not believe there is an institution on earth where everything learned from books and lectures can be practiced so thoroughly and in such quantity as is now the case in that school. I do not believe there is an institution on earth where students study harder or acquire more knowledge in the same length of time.

The advantages above discussed are so perfectly apparent and the system is so unique that it certainly deserves a thorough and conclusive test before it is changed at the behest of theorists who have had no praetical experience in the institution itself.

In conclusion, I desire to repeat that no system of instruction can be ideal in all its features. The only thing which can be done is to adopt that system which appears to have the greatest preponderance of advantageous features, and then judge it mainly by results.

J. F. BELL,
Brig.-Gen. and Chief of Staff, U. S. Army,
Commandant.

[APPENDIX B.]

U. S. INFANTRY AND CAVALRY SCHOOL

OFFICE OF THE ASSISTANT COMMANDANT

Fort Leavenworth, Kansas, August 15, 1906.

The Secretary,
Infantry and Cavalry School,
Fort Leavenworth, Kansas.

Sir:

I have the honor to submit the following report of the assistant commandant for the year ending August 15, 1906:

Reference is made to the report by the assistant commandant for the Staff Class for a statement of the duties performed by him during the year.

So far as concerned the Infantry and Cavalry class he prepared the schedules for the year and the course of instruction in the department of military art for the year, and during the period from October 11 to January 3 he took charge of the department of military art. This report, therefore, deals mainly with that department.

ALLOTMENT OF TIME

From September 1, 1905, to June 30, 1906, 412 half-days were available, which were distributed as follows:

DEPARTMENTS	Half days due	SEPT.		OCT.		NOV.		DEC.		JAN.		FEB.		MARCH		APRIL		MAY		JUNE	
		Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due
Mil. Art	164	24	140	18	122	16	106	17	89	21	68	15	53	15	38	1	37	15	22	22	0
Eng.	132	18	114	23	91	12	79	0	79	7	72	3	69	0	69	24	45	25	20	20	0
Law	50	0	50	3	47	12	35	1	34	14	20	10	10	9	1	1	0	0	0	0	0
Lang's	50	0	50	0	50	0	50	0	50	0	50	10	40	20	20	16	4	4	0	0	0
Care of Troops	16	0	16	0	16	4	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	412	40	370	44	326	44	282	30	252	42	210	38	172	44	128	42	86	44	42	42	0

The distribution of time was shown in detail on a calendar, giving the assignment of work for every hour of allotted time during the year. This was prepared several months in advance and was of considerable assistance in giving a permanent and definite form to the course of instruction.

TEXT-BOOKS

The publication of an authorized Manual of Field Service Regulations, with which the members of the class had not an opportunity to become familiar, made it necessary to introduce a study of this book into the course.

The adoption of new artillery material and the recent improvements in that arm were brought to the attention of the class in a series of lectures by Captain O. L. Spaulding. Captain Spaulding was ordered to Fort Riley for the purpose of preparing himself for these lectures. The lectures were published and recited upon by the class.

As the course of instruction included the three arms of the service and as student officers can at most only be expected to be familiar with their own, it was deemed advisable to have eight lessons in cavalry, infantry and artillery drill regulations. The portions studied were the formations from column into line, from line into column, the attack and the defense. It would save time if these things were required of officers on entrance.

The appearance of a new German edition of the text book on "applied tactics" made prominent the deficiencies in the English translation which we have been using, so Major C. H. Barth has been for some months assigned to the task of getting out an American translation, which he has nearly completed.

As indicated in my report of last year it was deemed advisable to return to the study of Wagner's "Organization and Tactics" after trying a course of lectures. The chapters on artillery were replaced by Captain Spaulding's lectures and the remaining subjects were covered in eight recitations.

The recent revision of this valuable book by Captains Craig and Brees, and Lieutenant Chapman

will solve the difficulty as to a text-book in Organization and Tactics, which has existed for several years. I have been over the revised edition with one of the officers just named and have been highly pleased with the work.

With these exceptions the text-books remained the same as last year.

SCOPE AND METHOD OF INSTRUCTION

The system of learning principles by their application continued to be followed with gratifying results. The best indication of its success is to be found in the unflagging zeal of the students themselves.

Following is an outline of the course for the year:

I. **SECURITY AND INFORMATION** (value: theoretical, 16; practical, 45).

1 introductory lecture.

4 review recitations in Field Service Regulations, with short lectures (based on Security and Information, 9th edition):

1.	Information, pp.	38-48 incl.,	Field Service Regulations.
2.	Security, "	49-58	do.
3.	" "	59-68 incl.,	do.
4.	" "	69-78	do.

1 examination on above recitations (one half day), value, 15.

6 map problems, value 4 each:
- 1 in cavalry patrolling.
- 1 in infantry patrolling.
- 2 in outposts.
- 2 in advance, Fank and rear guards.

Total value, 24.

3 terrain exercises, value 3 each:
- 1 in infantry patrolling.
- 1 in outposts.
- 1 in advance, flank, and rear guards.

Total value, 9.

3 discussions of same.

6 maneuvers, value 2 each:
- 1 in infantry patrolling.
- 1 in cavalry patrolling.
- 2 in outposts.
- 2 in advance, flank, and rear guards.

Total value, 12.

RESUME (23 half-days).

Lecture 1; recitations etc. (indoors), 11; exercises etc. (outdoors) 12.

Total, 11+12=23 (half-days.)

II. HIPPOLOGY AND EQUITATION (not marked):

3 lectures and demonstrations (based on Horses, Saddles and Bridles, 2d edition):

1. Age.
2. Conformation.
3. Soundness.

Exercises in equitation during indoor season.

RESUME (3 half-days).

	Lectures,	recitations, etc.,	exercises, etc.,
(forward)	1	11	12
Total	4	11	15

Grand total, 11+15=26 (half-days.)

III. MILITARY WEAPONS AND MUNITIONS OF WAR (value 25):

2 lectures on modern field artillery.

1 recitation on modern field artillery.

7 recitations, Infantry Weapon and Its Use in War (1st edition):

1. P. 36 to bottom p. 91, with omissions.
2. Chap. V to bottom p. 149, with omissions.
3. Chap. X to 4, p. 188, with omissions.
4. No. 4, p. 188, to bottom p. 218 with omissions.
5. Chap. XII, p. 218 to end bottom p 245, with omissions.
6. Review, p. 39, to bottom p. 161, with omissions.
7. Review, p. 162 to end.

RESUME (8 half-days):

	Lectures	recitation, etc.,	exercises, etc.,
(forward)	4	11	15
	6	19	15

Grand total, 19+15=34 (half-days).

IV. MILITARY FIELD SIGNAL COMMUNICATIONS (value 5):

2 lectures.

2 recitations and demonstrations (night and day(.

1 examination on III and IV (total value 30).

RESUME (3 half-days).

Lectures,	2 recitations, etc.	3; exercises, etc.	0
(forward)	6	19	15
Total	8	22	15

Grand total, 22+15=37 (half-days.)

V. **ORGANIZATION** (value: theoretical 4; practical 10):

1 lecture, organization of our own and foreign armies.

1 recitation, "Organization," pp. 11-26 incl., Field Service Regulations.

2 problems (value 5 each).

RESUME (3 half-days):

Lecture, 1;	recitations etc., 3;	exercises etc.,	0.
(forward)	8	22	15
Total	9	25	15

Grand total, 25×15=40 (half-days).

VI. TACTICS. Value.

Theoretical			82
Practical:			
	Map problems	100	
	Terrain exercises	32	
	Maneuvers	22	154

2 lectures:

1. Orders.
2. Messages and reports.

2 recitations:

1. Orders.
2. Messages and reports.

EIGHT RECITATIONS IN DRILL BOOKS

Cavalry Drill Regulations.

3. Pars. 168-178 incl.
   " 448-456 "
   " 484-531 "
4. " 633-696 "
5. " 782-832 "
   " 919-920 "

Infantry Drill Regulations.

6. Pars. 130-160 incl.
   " 221-241 "
7. " 320-347 "
   " 399
   " 417-426 "
   " 432-435 "

Artillery Drill Regulations.

8. Pars. 703-751 incl.
" 752-756 "
9. " 888-921 "
" 1001-1026 "
10. " 1057-1046 "

TWO RECITATIONS IN FIELD SERVICE REGULATIONS

11. Marches, pp. 79-199 inclusive.
12. Combat and ammunition supply, pp. 101-122.

EIGHT RECITATIONS IN ORGANIZATION AND TACTICS
(4th edition).

12. pp. 40-75 with omissions. Characteristics of the three arms.
14. " 114-140 do. Infantry in attack and defense.
15. " 141-165 do. do.
16. " 166-189 do. do.
17. " 239-266 do. Cavalry in attack and defense.
18. " 267-294 do. do.
19. " 423-450 do. The three arms combined.
20. " 450-477 do. do.

10 REVIEWS

1. Lessons 1 and 2.
2. " 2 " 4.
3. " 5 " 6.
4. " 7 " 8.
5. " 9 " 10.
6. " 11 " 12.
7. " 12 " 14.
8. " 15 " 16.
9. " 17 " 18.
10. " 19 " 20.

1 examination, two half-days (value 82).

RESUME (32 half-days):

Lectures,	2;	recitations, etc., 32;	exercises, etc., 0.
(forward)	9;	25;	15.
Total,	11	57	

Grand total, 57+15=73 (half-days.)

1 examination; two half-days (value 82).

VI. TACTICS (continued).

25 recitations in applied tactics (Griepenkerl):

1.	pp.	7 - 31	10.	pp.	210 - 228	19.	pp.	406 - 436
2.	"	31 - 50	11.	"	229 - 246	20.	"	436 - 454
3.	"	50 - 75	12.	"	246 - 227	21.	"	455 - 470
4.	"	75 - 109	13.	"	272 - 300	22.	"	471 - 491
5.	"	110 - 129	14.	"	300 - 320	23.	"	492 - 513
6.	"	130 - 148	15.	"	321 - 348	24.	"	531 - 528
7.	"	148 - 168	16.	"	348 - 364	25.	"	528 - 546
8.	"	168 - 191	17.	"	365 - 388			
9.	"	191 - 210	18.	"	389 - 405			

20 problems in applied tactics (value 5 each):

1. A march to the front.
2. A retreat.
3. An advance guard.
4. A rear guard.
5. An outpost from an advance guard.
6. An attack.
7. A position in readiness.
8. A defensive position.
9. An outpost—day and night dispositions.
10. A flanking detachment.
11. Independent Cavalry.
12. Change of direction of march.
13. A flank march.
14. Protection of a convoy.
15. Attack of a river line.
16. An attack of a defensive position.
17. A retreat after defeat.
18. Selection of a defensive position.
19. A march of concentration.
20. A march of concentration.

RESUME (45 half-days):

Lectures,	0;	recitations, etc., 45;	exercises etc 0
(forward)	11	57	15
Total,	11	102	15

Grand total, 102 + 15 = 117.

8 terrane exercises (value 4 each):

1. Attack of elevated ground by infantry.
2. Defense of elevated ground by infantry.
3. Attack of wood.

4. Defense of wood.
5. Attack of village by infantry.
6. Attack of cavalry, mounted.
7. Attack of cavalry, mounted and dismounted.
8. Attack by artillery.

8 discussions.

11 maneuvers (value 2 each):

1. Attack of elevated ground by infantry.
2. Defense of elevated ground by infantry.
3. Attack of wood.
4. Defense of wood.
5. Attack of village by infantry.
6. Attack of village by infantry.
7. Attack by cavalry, mounted.
8. Attack by cavalry, mounted and dismounted.
9. Defense by cavalry.
10. Attack by artillery,
11. Attack and defense by three arms.

RESUME (27 half-days):

Lectures,	0;	recitations, etc., 0; exercise, etc.,	27
(forward)	11	102	15
Total,	11	102	42

Grand total, 102 + 42 = 144.

7. STRATEGY AND MILITARY GEOGRAPHY AND HISTORY (value 60).

37 lectures.

(See Report on Staff College.)

12 recitations:

1.	1 - 3	5.	13 - 15	9.	25 - 27
2.	4 - 6	6.	17 - 18	10.	28 - 30
3.	7 - 9	7.	16 - 21	11.	31 - 33
4.	10 - 12	8.	22 - 24	12.	34 - 37

6 reviews:

1.	1 - 6	3.	13 - 18	5.	25 - 30
2.	7 - 12	4.	19 - 24	6.	31 - 37

1 examination; 2 half days (value 60):

RESUME (20 half-days):

Lectures,	37;	recitations, etc.	20;	exercises, etc	0
(forward)	11	102			42
Total,	48	122			42

Grand total, 122 + 42 = 164.

TWENTY-THREE LECTURES ON SUBJECTS OF CURRENT MILITARY INTEREST.

(See report on Staff College.)

RESUME:

Lectures,	23;	recitations, etc.	0;	exercises, etc.	0
(forward)	48		122		42
Total,	71		122		42

Grand total, 122 + 42 = 164.

CONCLUSION

This school has two purposes, each distinct from the other and somewhat antagonistic in aim and method. The *first* is to supply the lack of knowledge of one's own arm of the service which exists to a greater or less extent. The *second* is to give an advanced course which shall include the other arms of the service and the combination of them all in the field. The *first* should be possessed by the officers before they undertake the course at the Infantry and Cavalry School. If they do not do so it shows a defect in the methods of instruction of the army at large which should be remedied. If we expect the school to remedy these deficiencies we encounter the objection that we will simply complete the instruction of a certain number of individuals while leaving the methods of the balance of the army as they were before. If we expect that the instruction given at the school will be sufficient to spread its influence through the entire army and thus to accomplish the desired result, we have only to look at past experiences; the rank of our graduates is not high enough to insure the adoption of their standard of information. Moreover the course is not long enough, for if we were to teach simply the portions of an officer's duty which he ought to know when he arrives here, I mean patrols, outposts, guards, attack and defense, it would take the greater part of the entire course of ten months.

The theory of the applicatory system is to replace the experience of actual war by the experience gathered by the study of a large number of concrete examples in time of peace. Its value depends upon the number of cases considered. The solution of three problems in cavalry patrolling, for instance, can not give more than an indication of the general character of the exercise. Continuous work in the field for several weeks would be necessary in addition to careful preparation by map problems. Such work could probably be performed at a post or at least under some other form of instruction than at this school.

The cause of this gap or hiatus in our military instruction is due to the lack of a proper basis for our practice and study of minor tactics. A suitable text book based on the applicatory method of teaching, written in the style of von Verdy and Griepenkerl, would, if distributed to the entire army solve the question.

The school does not encounter this difficulty in complying with the *second purpose*, above referred to, because its text books are numerous and of the highest merit.

Very respectfully,

EBEN SWIFT,
Major, 12th Cavalry,
Assistant Commandant.

[APPENDIX C.]

INFANTRY AND CAVALRY SCHOOL, SIGNAL SCHOOL AND STAFF COLLEGE.

Fort Leavenworth, Kansas, July 5, 1906.

The Commandant,
Infantry & Cavalry School,
Signal School & Staff College,
Fort Leavenworth, Kansas.

Sir:

I have the honor to submit the following report pertaining to my office and duties as Secretary of the Fort Leavenworth Service Schools, for the fiscal year ending June 30, 1906:

DISBURSEMENTS

Pay enlisted men, extra duty,	$ 2509.18
Department of Engineering,	1856.89
Library (books and periodicals),	1561.79
Furniture (office and library),	1404.11
Stationery,	544.76
Papering, decorating, etc.,	105.01
Department of Languages (phonographs, etc.),	506.77
Bookbindery,	263.65
Rent of telephones,	55.80
Expressage, freight charges, telephone charges, etc.,	97.18
The Signal School,	498.10
Printing Office,	2096.76
	$ 11500.00

EMPLOYEES

The service of the Secretary's office and its appendages has been as follows:

3 civilian clerks.
1 sergeant of engineers, in charge of instruments.
2 sergeants of engineers, draughtsmen.
1 sergeant of engineers, bookbinder.
2 enlisted men, assistant bookbinders.
4 sergeants of engineers, printers.
5 enlisted men, printers.
1 enlisted man, repairer of instruments.
2 enlisted men, janitors.

LIBRARY

During the current fiscal year, 471 volumes have been added to the library by purchase, 84 volumes by presentation, and 582 volumes of public documents.

Respectfully submitted,

MILTON F. DAVIS,
Captain, 10th Cavalry,
Secretary.

(APPENDIX D.)

U. S. INFANTRY AND CAVALRY SCHOOL

DEPARTMENT OF MILITARY ART

Fort Leavenworth, Kansas, August 31, 1906.

The Secretary,
Infantry and Cavalry School.
Sir:

I have the honor to submit the following report of the work of this department for the year ending August 31, 1906:

I was transferred from the Department of Law to this department on January 3 of this year, succeeding Major Charles H. Barth, 12th Infantry, who was badly injured at one of the military exercises.

ALLOTMENT OF TIME

Of the 410 half-days comprising the school year, this department was allotted 164, and these were divided among the different subjects in proportion to the values assigned the latter.

TEXT-BOOKS

Wagner's Service of Security and Information.
Carter's Horses, Saddles and Bridles.
Wagner's Organization and Tactics.
Griepenkerl's Letters on Applied Tactics.
Mayne's Infantry Weapon and Its Use in War.
Field Service Regulations.
Drill Regulations of the three arms.

ALLOTMENT OF ASSIGNED WEIGHT

		PRACTICAL WORK	EXAMINATION	TOTAL
1.	Security and Information	45	15	60
2.	Hippology and Equitation (not marked)			
3.	Military Weapons and Munitions		25	25
4.	Military Field Signal Communications		5	5
5.	Organization	10	4	14
6.	Tactics	154	82	236
7.	Strategy and Military History		60	60
		209	191	400

SCOPE AND METHOD OF INSTRUCTION

The scope and method of instruction for the past year will be found outlined in the report of Major Eben Swift, 12th Cavalry, for the school year ending August 31, 1905 (see Annual Report of the Commandant for that year).

The *scope* of instruction is of course dependent upon the time allotted this department, but more especially upon the previous preparation of student officers for this class of work.

The student comes here from the garrison school, and naturally the course here should be based upon that fact coupled with the additional fact that instruction in the Infantry and Cavalry School is but one step in the general scheme of education of army officers, and that from this school the student may pass to the Staff College, and from the latter to the War College. With this idea in mind I have, with the consent of the Commandant, somewhat altered the course of instruction which, for the coming year, will be as follows:

MILITARY ART

1. Organization of Troops and *matériel* of the Army of the United States:—

(a) Instruction by lectures and recitations.

(b) Practical exercises in solving problems.

2. Troops in Campaign (marches, shelter and supply:)—
   (a) Instruction by lectures and recitations.
   (b) Practical exercises in solving problems.
3. Orders, Messages and Reports:—
   Instruction by lectures, recitations and practice in the preparation of field orders, messages and reports.
4. Weapons and Munitions of War:—
   Instruction by lectures, recitations and practical demonstrations relating to modern military weapons and munitions and their employment in war.
5. Security and Information:—
   (a) Instruction by lectures and recitations.
   (b) Practical problems on the map, and exercises on the ground with and without troops.
6. Tactics:—
   (a) Of the smaller units of the several arms:
      1. Instruction by lectures and recitations.
      2. Practical problems on the map, and exercises on the ground with and without troops.
   (b) Of the arms combined, including the functions of the Signal Corps with an army in the field.
      1. Instruction by lectures, recitations and demonstrations.
      2. Practical problems on the map, and exercises on the ground with and without troops.
7. Strategy and Military Geography and History:—
   Instruction by lectures with recitations thereon, based on American history and modern foreign campaigns.
8. Hippology and Equitation:
   (a) Instruction by lectures, discussions and practical demonstrations.
   (b) Practical instruction in equitation.

This subject not to be considered in determining class standing.

9. Lectures and discussions on questions of current military interest.

This subject not to be considered in determining class standing.

All instruction in this department to be in conformity with the principles laid down in official publications of the War Department and authorized text-books.

The *method* of instruction in this department is

known as the applicatory or applicative system. The object of this system is to make the work of the student officer practical. That it is the best method yet devised for studying the art of war in time of peace, no one at all familiar with its advantages can deny.

In the army, as in every other profession or walk of life, practical men are wanted, and such men can be produced only by practical methods of education. The applicative system is such a method, and in comparison the old method of studying from text-books seems almost a waste of time. To be sure text-books are valuable adjuncts, but in schools of the post graduate type they should occupy a secondary place.

It is admitted that this method of instruction involves much labor, not only on the part of the student officer, but on that of the instructor as well, and herein is a danger which should be carefully guarded against by those who have the welfare of this institution at heart. Reviewing and marking map problems and outdoor exercises are exceedingly laborious and irksome, and call for such unremitting labor on the part of the instructors that there is constant danger, if the number be inadequate, of their work being hurriedly done, or of the method of instruction being changed to one less onerous in its nature. For instance, the course in this department for the coming school year involves the criticising and marking (class of 60) of 3600 half day problems or exercises. It has been found that criticising and marking these problems or exercises will require an average of two hours of some instructor's time. This means 7200 hours, or 900 days of 8 hours each, wherein the instructors are engaged in reviewing and marking the completed work of student officers. It does not include the time spent in preparation, con-

ducting recitations, or in supervising the practical work. As human energies are generally expended along the line of least resistance, it is not difficult to see why the applicative method is in constant danger of being changed to one less burdensome to instructors.

We are indebted to the Germans for this system of teaching the art of war, now gradually working its way into our own army. In theory it is quite simple and consists mainly in first assuming *situations* (the British call them *ideas*) and then studying the questions applicable thereto, the student officer being required to point out what course he would pursue under the circumstances, and to give his reasons therefor.

This method, in gradual process of development, has been in use at this school for some time, Griepenkerl's Letters on Applied Tactics serving as the guide. It is applicable to all tactical questions whether on the map or on the ground, and it is my intention to adopt it in the form given below to the subjects of Security and Information and Tactics whether of small units or of the arms combined. When fully developed this method of instruction will include:

1. *Studies* or discussions of "situations" after the manner of Griepenkerl's Letters on Applied Tactics, the principles of the subject being deduced or worked out by the student officers with the assistance of the instructors.

This work is not graded.

2. *Map Problems* wherein the student officer is given certain "situations" on maps and required to give in writing his estimate or judgment of them, and state, generally in the form of a military order, what course he would pursue under the circumstances.

3. *Terrain Exercises,* wherein the student officer is given certain "situations" on the ground without troops and required to give in writing his estimate or judgment of them, prepare a sketch of the ground, and state, generally in the form of a military order, what course he would pursue under the circumstances.

4. *Maneuvers,* wherein the student officer is given certain "situations" on the ground involving the actual command of troops, and required to state verbally his estimate or judgment of them, and to conduct the maneuvers according to the conditions prescribed.

In brief the student is constantly confronted with military situations,

1st, in studies with the instructors;
2d, in solving problems on the map;
3d, in solving similar problems on the ground without troops; and
4th, in solving similar problems on the ground with troops so far as the conditions will permit.

The solutions of map problems are reviewed, errors pointed out, and then returned to the student officers for their information and instruction. These officers, if they so desire, are then permitted to make replies to the criticisms with a view of explaining or elucidating doubtful points, or of defending their tactical dispositions.

Solutions of terrain exercises, after being reviewed, are discussed jointly by the student officers and instructors on the ground where the problems were solved.

In maneuvers the errors of student officers are pointed out on the ground at the conclusion of each exercise.

On map problems, terrain exercises and maneuvers student officers are marked and their standing determined.

To secure just and uniform consideration of student officers' work, great care is taken in reviewing and marking problems and exercises. That undue consideration may not be given any one feature, good or bad, of an officer's work, "marking slips" have been prepared setting forth the different features to be considered, and to these values are assigned by the department before the problem is marked.

The slips used in the practical work of Security and Information and Tactics will be found on the two following pages:

Form 2 Marking Slip

Department of Military Art

Practical Course in { Security and Information / Tactics { Single Arm / Arms Combined

190 —0

Map Problem / Terrain Exercise { No.....

Student's No.....

REQUIREMENTS	VALUE	MARK OF ASS'T INST. ITEM	MARK OF ASS'T INST. TOTAL	MARK OF DEPARTMENT ITEM	MARK OF DEPARTMENT TOTAL
ESTIMATE OF THE SITUATION:					
TACTICAL DISPOSITIONS:					
THE ORDER:					
CAPTION					
MARGIN					
BODY: *Paragraph 1*					
" *2*					
" *3* (*a*)					
(*b*)					
(*c*)					
(*d*)					
(*e*)					
" *4*					
" *5*					
" *6*					
ENDING					
MAP OR SKETCH:					
PREPARATION OF PAPER:					
COMPLIANCE WITH INSTRUCTIONS					
LEGIBILITY AND NEATNESS					
SPELLING AND DICTION					
	TOTAL.....				

Initials of Assistant Instructor.....
" " Instructor.....

The different sub-head values will be entered in red by the assistant instructor and approved by the instructor before the problem is marked.

Form 3 Marking Slip

Department of Military Art

Practical Course in { Security and Information / Tactics { Single Arm / Arms Combined

190 —0 .

Maneuvers: No..... Student's Name.....

REQUIREMENTS	VALUE	MARK	TOTAL
Uniform, Equipment and Military Bearing:			
Estimate of the Situation:*			
Tactical Dispositions:			
Orders and Instructions:†			
Manner of Exercising Command:			
		TOTAL.....	

Initials of Assistant Instructor.....

The different sub-head values will be entered in red by the assistant instructor and approved by the instructor before the problem is marked.

*To be stated verbally to instructor after reconnaissance.

†Whatever the manner in which a field order is given, whether orally or in writing, the body of the order should follow the prescribed form.

By *estimate of the situation* (called by the British *appreciation of the idea*) is meant the commander's opinion or judgment of the military situation after he has studied the terrain and all information at hand. It includes the course of reasoning by means of which his opinion is formed and a definite line of action decided upon.

Ordinarily it would involve (1) a consideration of the orders or instructions under which he is acting; (2) a consideration of the strength, position and probable intentions of the enemy; (3) a consideration of his own military situation; and (4) a statement of what he proposes to do under the circumstances.

It will be observed that on the maneuver marking slips two features, personal in their nature, viz., "military bearing" and "manner of exercising command," enter into the student officer's mark. These are what may be called the *soldierly* qualities, and as they appear in no other part of the course and are fully as important as a knowledge of books, they are given a relatively high value. The meaning of "military bearing" is well understood. Under the heading "manner of exercising command" the following features are considered:

1. Voice.
2. Brevity and clearness in giving instructions.
3. Does the student officer remain cool and collected under excitement or does he become "rattled" and forgetful?
4. In general does he inspire confidence in troops and is he a natural leader of men?

To carry out the above elaborate scheme of practical work the instructors in the department are assisted by students of the Staff College, the latter being grouped into committees that work jointly with the instructors in preparing problems for students of the Infantry and Cavalry School, and in supervising, reviewing and marking their work. So valuable to

both School and College has this feature of the instruction proved to be, that it will unquestionably remain an essential part of the applicative system now in use. Harmony in the arrangement and classification of details will come with time and experience, and will eventually make this institution one of the great military schools of the age, for in no other are the services of so many capable instructors (including the Staff Class) available.

For the school year 1906-7 the course in detail will be as follows:

Organization:	3 recitations and 2 problems.* Wagner's Organization and Tactics, Chap. II.
Troops in Campaign:	4 recitations and one problem. F. S. R., Articles V, VII, VIII, IX (except (C) Transportation by Water), X, and XI to par. 662.
Orders:	3 recitations. Swift's pamphlet and Article II, F. S. R.
Security and Information (small units):	5 *studies* (now being prepared), 3 map problems, 4 terrain exercises and 2 whole-day maneuvers.
Minor Tactics:	6 recitations and *studies*. Wagner's Organization and Tactics, Chaps. III, IV, and V; 3 map problems, 4 terrain exercises and 2 whole-day maneuvers.
Hippology and Equitation:	6 lectures and quizzes; daily exercises in equitation.
Weapons and Munitions of War:	8 lectures and quizzes.
Tactics of the Arms Combined:	5 recitations—Wagner's Organization and Tactics, Chaps. VI and VII, and Art. Drill Regulations; 3 lectures and 2 demonstrations on the functions of the Signal Corps with an army in the field; 25 *studies* in Griepenkerl's Letters on Applied Tactics, and 20 map problems.

*All problems and exercises are prepared on the basis of allowing student officers one half-day for solution.

Strategy and Military Geography and History.

33 lectures and 17 quizzes on the following campaigns:

1. Revolutionary War, Northern Campaign.
2. Revolutionary War, Southern Campaign.
3. The Invasions of Canada.
4. The War of 1812.
5. The Mexican War, Taylor's Campaign.
6. The Mexican War, Scott's Campaign.
7. The Bull Run Campaign of 1861.
8. The Capture of Forts Henry and Donelson.
9. The First Day of the Battle of Shiloh.
10. Jackson's Valley Campaign.
11. The Peninsular Campaign.
12. The Second Bull Run.
13. The Stone River Campaign.
14. The Antietam Campaign.
15. The Fredericksburg Campaign.
16. The Campaign of Chancellorsville.
17. The Gettysburg Campaign, 1st Lecture.
18. The Gettysburg Campaign, 2nd Lecture.
19. The Vicksburg Campaign.
20. The Chickamauga Campaign.
21. The Battles Around Chattanooga.
22. The Battle of the Wilderness.
23. The Battle of Spottsylvania Court House.
24. The Siege of Petersburg.
25. The Atlanta Campaign.
26. The Campaign of Königgrätz.
27. The Campaign of Metz.
28. The Campaign of Sedan.
29. The Siege of Plevna.
30. The Campaign of the Balkans.
31. The South African War.
32. The War between Russia and Japan, 1st Period.
33. The War between Russia and Japan, 2nd Period.

In addition the last two weeks in June will be wholly devoted to terrain exercises and maneuvers of the larger units.

The weights allotted these subjects will be as follows:

	PRACTICAL WORK.	EXAMINATION.	TOTAL.
Organization:	8	10	18
Troops in Campaign:	4	12	16
Orders:		9	9
Security and Information (small units):	40		40

Minor Tactics:	47		47
Weapons and Munitions of War:		24	24
Tactics of the Arms Combined (including Security and Information):	136	30	166
Strategy and Military Geography and History.		60	60
	235	145	380

At the end of the coming year it is intended to dispense with all theoretical examinations except in the two subjects of "Weapons and Munitions of War" and "Strategy and Military Geography and History," which, on account of their nature, cannot be treated in a different manner.

In the remaining subjects the student's knowledge will be tested and his standing determined by a series of practical problems or exercises, the subject matter of which will have been covered in the *Studies* or in the garrison schools. Indeed, in my opinion, this is a much fairer method of grading student officers than by requiring so much to depend upon a single examination. For instance, the officer's standing in strategy, where the value is 60, is determined by an 8 hours' examination, each hour's work being worth $7\frac{1}{2}$ units, while in the 20 map problems in grand tactics, value 100, his standing is determined by the work of 20 half-days, or 80 hours, making his work for each hour worth only $1\frac{1}{4}$ units.

RECOMMENDATIONS

1. That the department of the "Care of Troops" be transferred to the department of Military Art and there taught, practically, under the subject of "Troops in Campaign." I make this recommendation for the following reasons: (1) This subject is now taught theoretically in the garrison schools, and should be taught practically here. (2) Practical questions pertaining to the "care of troops" are so

intimately connected with the subject of "troops in campaign" that they cannot well be separated from the latter and can be best considered in connection with that subject. (3) The surgeon who is instructor in the department of the care of troops is also on duty in the garrison and cannot find time sufficient to devote to that subject. (4) Combining these two departments, as suggested above, would facilitate the preparation of schedules and enable the departments of the school to more readily co-ordinate their work.

2. The method of teaching "Strategy and Military Geography and History" by means of lectures, stereopticon views showing the successive stages in campaigns and battles, and quizzes, has proved very satisfactory and enables the student profitably to cover a surprising amount of ground. It is therefore recommended that this method be continued and that Captain Steele, who has been so successful in developing it, be given every opportunity to perfect the undertaking.

3. Inasmuch as it is contemplated that the department of Military Art shall prepare an "American Griepenkerl" with American maps, American names and our army organization, it is recommended that a map of this locality, about 38 miles square, be prepared with all the skill known to our engineers for use in connection with the above mentioned work.

4. During the past year several instances have been reported where student officers have shown either carelessness or ignorance in the proper use and care of horses. It is therefore recommended that more serious attention be paid to equitation by requiring student officers to devote more of their recreation hours to that subject.

5. *Terrain for Field Exercises.* In this connection attention is invited to the report (see Annual Report of the Commandant for the year ending August

31, 1904, p. 31) of Major, now Lieutenant Colonel, Wotherspoon, then instructor in this department. In this report Colonel Wotherspoon very forcibly shows the need of more ground and how the amount then available was being gradually curtailed. This note of warning seems to have had little effect though some useless wire fences have been removed. The U. S. Penitentiary grounds have been entirely enclosed with wire fences thus cutting off egress to the south and depriving the school of valuable maneuver ground. The post proper is being gradually enlarged and target ranges extended. This is of course unavoidable, but with the growth of the post ground never before used for that purpose, has been taken for gardens which seriously interfere with the efficiency of terrain exercises and maneuvers, now such important features in the course of instruction.

It is therefore recommended (1) that the gardens be restricted to definite localities; (2) that steps be taken to fill several of the smaller ravines now interfering with field work; (3) that the reservation northwest of the post proper be cleared of underbrush; (4) that streets be opened through the Civil Penitentiary grounds permitting the passage of troops. The law transferring this part of the reservation to the Department of Justice contains this provision: "And provided further, that this prison reservation shall be open for military tactical purposes when such purposes do not interfere with the discipline of said prison."

6. The following recommendation is made with much diffidence, though with the full conviction that the necessity of the project therein contemplated will ultimately become apparent if the military schools at Fort Leavenworth are ever to attain a great

degree of usefulness and warrant the expenditure of money already appropriated by a generous Congress.

Attention has already been invited to the inadequate facilities for the proper instruction of officers in the field, and year by year as the garrison is enlarged these facilities will be more and more curtailed until finally field exercises will practically cease to exist or live in theory only.

Across the Missouri river and between that and the Platte is a section of country admirably adapted to maneuvers and field exercises of all kinds. To the institution it would be invaluable, as it would also be to the National Guard of Missouri and Kansas and the Regular Army for maneuvering ground and target practice.

These schools are educating officers for future high commands in the army, and should therefore furnish every facility for making that education as complete as can be done in time of peace. At present, incongruous as it may appear, there is no place on this reservation for artillery target practice, or where the effects of artillery fire can be observed.

On the ground in question target practice of every description can be held. Moreover, the ground is suitable for maneuvers of commands of any size from a small patrol to 10,000 or 12,000 men. It will furnish every variety of terrain, rough, broken and hilly country, level ground and wooded localities, a lake (obstacle) and rivers as may be desired. Railroad facilities are excellent. It is preferable to land west of Fort Leavenworth, as it is more varied in its nature and, being bounded by rivers, the movements of troops could be definitely circumscribed.

It is therefore recommended that steps be taken either to purchase, or to acquire the use for certain seasons of the year, damages to be paid, of all that tract of land lying between the Platte and Missouri

rivers and extending from the Platte City-Beverly highway south to the vicinity of Farley. At the same time the bridge over the Missouri at Fort Leavenworth should either be purchased, or the right of way over it secured, by the government. As it is now this bridge, crossing a public waterway, stands with both ends resting on the military reservation of Fort Leavenworth, and still cannot be used by troops without the payment of toll.

EXAMINATION

No change.

But one student officer failed to graduate in this department. This failure was in the practical work of Security and Information.

In closing this report I wish to express my appreciation of the able support rendered me by all the assistant instructors in this department. I trust the coming year may find me as fortunate.

D. H. BOUGHTON,

Major, 11th Cavalry,

Instructor.

[APPENDIX E.]

INFANTRY AND CAVALRY SCHOOL

DEPARTMENT OF ENGINEERING

Fort Leavenworth, Kansas, August 31, 1906.

The Secretary,
Infantry and Cavalry School,
Fort Leavenworth, Kansas.

Sir:

I have the honor to submit the following report of the work done in this department during the school year ending this date:

The time allotted to this department was 132 half-days distributed as follows: September 18; October 23; November 12; January 7; February 3; April 24; May 25; and June 20.

The text books used were Root's Military Topography and Sketching and Beach's Manual of Field Engineering, supplemented by pamphlets prepared and issued by the department.

A total of 320 was assigned to the work of engineering out of the aggregate of 1000 representing the work of the entire school. This 320 was distributed as follows:

ENGINEERING	Topographic Surveying, theo.	60			
	Topograhic Surveying, prac.	65			
	First Term's Work	125			
	Topographic Sketching, theo.	30			
	Topographic Sketching, prac.	60			
	Field Eng. and Fortification, theo.	50			
	Field Eng. and Fortification, prac.	55			
	Second Term's Work	195			
	Year's Work — Theoretical	140			
	Year's Work — Practical	180			
	Year's Work — Total	320			

The lessons were as follows:

IN TOPOGRAPHIC SURVEYING

1—Pamphlet on "Scales" to bottom page 10.

2—Pamphlet on "Scales" to end; Pamphlet "Notes on Topography" to "Instruments," page 8.

3—Root's Topography, Chap. XI to "Measuring distances with Gradienter", page 176.

4—Root's Topography, Chapter XX.

5—Root's Topography from beginning to "Arc of Excess," page 64.

6—Root's Topography from "Arc of Excess" to Chap. VII, page 85.

7—Pamphlet "Notes on Topography" from "Instruments" to end.

8—Roots Topography, p. 85 to "Traversing", p. 117.

9—Root's Topography to "Use of Compass," page 133.

10—Root's Topography to "Traversing with the Plane Table," page 143.

11—Root's Topography to "Differential Leveling", page 159.

12—Root's Topography to "Field Work," page 189 except so much of Chapter XI as was included in lesson 3.

13—Root's Topography to Chapter XII, page 198.

14—Root's Topography to end of Part I.

IN FIELD ENGINEERING

1. To chap. V., p. 28.
2. To par. 94, p. 48.
3. To par. 122, p. 66.
4. To chap. XII, p. 84.
5. To chap. XIV., p. 105.
6. Pamphlet on Siege Operations.
7. To par. 269, p. 130.
8. To par. 316, p. 150.
9. To chap. XVIII, p 175.
10. To chap. XXI., p. 205.

IN TOPOGRAPHIC SKETCHING

I. Chapter on Range Finders; Pamphlet, pp. 1-11.

II. Root: From "Cyclometers," p. 256 to end Chap., p. 271. Chapter XVII, Chapter XXI. From Definition of Forms, p. 169 to include par. 11, p. 171.

III. Root: p. 293 to "Hill Features," p. 295. Chapter on Compasses, Pamphlet, pp. 25-32.

IV. Root: From "Hill Features," p. 295 to "A modification," etc., p. 299. From "Traversing with Compass," etc., p. 300, to "Batson Sketching Case," p. 307.

V. Chapter on Contourings, Pamphlet, pp. 13-23.

VI. Root: From "Traversing without Instruments," p. 308, (which change to read "Traversing with Improvised Instruments") to "Sketching Hill Features" p. 309. From "Reference Points," p. 316, to "When Sketching Hill Features," p. 318. From "Combined Surveys," p. 324, to end of chapter, p. 330. From "Reconnaissance of Outposts," p. 348, to "In Regard to Sketching," etc., p. 351.

The omissions and changes in the texts to adapt them to the course of the school were numerous.

In each subject the daily lessons included that of the previous day. Each review lesson was two advance lessons.

The lectures delivered were on the following subjects:

1. Method of making maps and their uses.
2. The transit and its adjustment.
3. Capabilities and limitations of surveying.
4. Field methods applied in sketching.
5. Field fortifications.
6. One plane descriptive geometry in map making.
7. Bridges.

The practical work consisted of the following exercises under the different headings:

TOPOGRAPHIC SURVEYING	HALF-DAYS
Transit survey	7
Leveling	7
Plane table survey	6
Contouring	6
Finishing maps	3

TOPOGRAPHIC SKETCHING		
Determine lengths of pace and construct working scales		1
Road sketch on foot with note-book, compass and clinometer	Preliminary	1
	Record	2
Position sketch with drawing board, compass and protractor	Preliminary	1
	Record	2

Road sketch on foot with sketching case	Preliminary	1
	Record	2
Outpost sketch with improvised instruments	Preliminary	1
	Record	2
Combined position sketch	Preliminary	1
	Record	2
Road sketch, mounted, with note-book, compass and clinometer	Preliminary	1
	Record	2
Road sketch, mounted, with sketching case.	Preliminary	1
	Record	2
Road sketch, mounted, with choice of instruments	Preliminary	1
	Record	2
Total half-days		25

FIELD FORTIFICATION

Shelter trenches	1
Wire entanglements, high and low. Palisades	1
Abatis	1
Fascine and gabion	1
Revetments of fascines, gabions and hurdle	1
Revetments of sand-bags and sod, loop-holes on parapet	1
Total half-days	6

FIELD ENGINEERING

Knots splices and lashings	2
Shears, gin and canvas ponton	1
Log and barrel rafts	1
Bridge of pile bents	4
Ponton bridge	2
Bridge with crib piers of ties	4
Demolitions	2

SCOPE AND METHOD OF INSTRUCTION

For study and recitation the class was divided into four sections of from twelve to fourteen officers. The student officers were allowed before beginning the recitations to ask such questions concerning the text as they found necessary or of advantage to enable them to thoroughly understand the subject.

Recitations were limited by regulations to one hour, a period entirely too short to permit a section of twelve or more to recite, especially after a portion of the time had been taken by explanations. As a rule it was found that practically the same questions would be asked by each section with the result that each assistant instructor would have to make the same explanations twice. This consumed considerable time so that the plan was adopted during the latter part of the year of having the two sections in charge of each assistant instructor report at the same hour; the time consumed in explanations was thus shortened, and the actual recitations then occupied an hour after the explanations had been finished. This did not allow quite as many men to recite as by the first method of having each section recite separately, but it permitted more subjects to be recited, and gave more satisfactory results, it is believed. Most of the officers that come to the school are hard students, and have as far as their ability goes, learned what is in the text-book before they come to the recitation room, and it was found to give them a better knowledge of the subject to have the instructor rather fully discuss or explain the subject than to listen merely to a recitation which might not be entirely correct, and was not apt to contain more than they already knew.

Whenever considered advisable there would be lectures to the entire class on special subjects.

For practical work in surveying the class was divided into parties of four members each and each member of a party would perform in rotation the different duties required in the problem. That member of the party who was, for the time being, instrument-man, was in charge of the party and was responsible for the work done during his tour. The

others acted as rodmen, chainmen, recorder, axemen, etc., as required. When the field work was finished each member of a party secured copies of the field notes of the other members, and then in the draughting room each reduced all the notes and plotted the entire survey.

The pamphlet of instructions which governed this work gave for each problem, the character and extent of the survey, the organization of the party, the duties pertaining to each position, the instruments and equipment required, the allotment of time, and detailed methods of procedure for field work and drafting.

The work was marked on the following basis which had formerly been used:

Field Work:	
Compliance with instructions	3.0
Accuracy of the work	3.0
Completeness	2.0
Completeness and neatness of notes and record	1.0
Total	9.0
Draughting:	
Compliance with instructions	3.0
Accuracy of plotting	3.0
Completeness	2.0
Neatness	1.0
Total	9.0

In practical work in topographic sketching the work consisted of two parts, one half-day's preliminary work and a whole day's record work. In preliminary work the class was divided into parties of two, each party being in charge of an officer of the Staff College detailed for the purpose.

In record work each member of the class worked by himself and was marked on the map which he submitted. The system of marking in surveying was found to be inadequate to permit distinction

enough between the work of the different officers to properly express the relative value of their work, and in sketching the following system was used:

Accuracy	40%
Completeness	30 "
Application and steady work	20 "
Neatness and drafting	10 "
	100

The season's work in sketching terminated with a position sketch of a defensive position twelve miles long and two miles and over wide by the combined Infantry and Cavalry School and Staff College classes, in less than a day and a half.

In field fortification and field engineering the class worked sometimes in small parties and sometimes as an entire class according to the nature of the work.

The end and aim of the course in topography is to teach the student officer to make such maps as would be required for military purposes and would have to be made in the field in time of war. The work with exact instruments besides its intrisic value is a necessary preliminary to such work.

While few of the graduates of this institution would in time of war be available for service with the regular topographical parties, officers of all ranks will find it necessary and desirable to make maps and will especially profit by the facility in map reading which such instruction can alone give them. When the course was organized it was accepted as the first principle that the value of a military map was greatly increased if it showed the relief of the ground and the aim has constantly been to so instruct the student officers that every graduate of the Infantry and Cavalry School should be competent to make a contoured map with such crude instruments as are available for

use in the field and to make such map at a rate of speed that would enable him to keep ahead of marching troops.

No course laid down in any of the books seemed suitable for accomplishing this result and the Department has worked out its own system, some of it the best that was available in the beginning and some of it original, changing and improving from year to year. The time for instruction was so limited that little opportunity was allowed for testing the results of this system of instruction beyond what was shown by the solution of the regular teaching problems, until this year, when for the first time, the Staff Class took up the subject extensively and the results of their work furnished very gratifying evidence that the system used in the Infantry and Cavalry School accomplished the result of turning out well instructed individual sketchers.

When the Staff Class course was outlined this year it made no provision for any instruction of the individual in making a contoured map. He was assumed to know that thoroughly and the course was devoted to instruction in combined work and high speed sketching. The results obtained by the Staff Class proved this assumption to be amply warranted by the facts and furnished most satisfactory evidence that the methods used in the Infantry and Cavalry School were thoroughly sound.

In one problem the Staff Class, supposed to be with the cavalry screen, covered the front of a corps moving on three parallel roads and mapped besides the main roads all intervening and lateral roads and the country between. This work was done at such a speed that they would have covered the front of a twenty mile march and furnished blue prints for the next day's march of the main army before midnight.

In another problem the sketchers were supposed to be with the cavalry keeping in touch with a retreating army. They were required to maintain a rate of six miles an hour and send back road maps every half hour to guide the march of the main body in following the pursuit. This work was done so satisfactorily as to prove that the commander of the main army could have been provided with such maps as would have enabled him to divide up his troops so as to have used all available roads to the best advantage. Later on with the assistance of the Infantry and Cavalry Class a contoured map of twenty-five square miles of country more than ordinarily difficult was made in one day. This map was to a scale of 6″ to 1 mile with 10 foot contours and the day's work included control, combination, and making blue prints.

Of course this Staff Class work was only a test of the fifteen men highest in standing in the last class but from improvements in work this year and from some advantageous changes which have already suggested themselves for next year's work, it is believed that the claim is well warranted that in the future all graduates of the Infantry and Cavalry School course in topographic sketching will be well instructed individual sketchers leaving instruction in the various methods of combination and control of sketching parties as the legitimate function of the Staff Class course.

The methods used in accomplishing these results have only been partly published to date but it is believed that they have now been sufficiently tested to warrant putting them in book form in time for use by the next class.

The bridge of a semi-permanent character built this year was of a very different nature from those

built during previous years, but was, it is believed, instructive and practical. Owing to the state of the school funds the expenditures heretofore made for this purpose were considered inadmissable and the strictest economy had to be practised in securing the materials. The bridge was built across Corral Creek about 300 yards above the electric railroad trestle; the piers were of old railroad ties laid up in cob house style, and to economize material the floor was on an incline, this construction requiring only two thirds the material that would have been needed if the bridge had been built with a horizontal floor. Now that the bridges which were most needed for communication between the different parts of the reservation have been built, it is believed that future constructions can be confined to such types as company or regimental officers would be called on to build with material obtainable in the field.

The course was practically the same as it had been under my predecessor, Major T. H. Rees, Corps of Engineers, who organized the department and had charge until this year.

I desire to commend Captain E. T. Cole, 6th Infantry, and Captain H. B. Ferguson, Corps of Engineers, assistant instructors, for the efficient and painstaking manner in which their work has been performed. The fact that this year was the first for both Captain Ferguson and myself caused the work of Captain Cole to be particularly valuable and it is a pleasure to report the praiseworthy manner in which it has been done.

Very respectfully,
LANSING H. BEACH,
Major of Engineers,
Instructor.

[APPENDIX F.]

U. S. INFANTRY AND CAVALRY SCHOOL

DEPARTMENT OF LAW

Fort Leavenworth, Kansas, August 31, 1906.

The Secretary,
Infantry and Cavalry School,
Fort Leavenworth, Kansas.

Sir:

I have the honor to submit the following report of the work of this department for the year ending August 31, 1906:

ALLOTMENT OF TIME

During the school year from September 1, 1905, to June 30, 1906, the department was allotted fifty half-days and twenty-five lecture hours. This time was utilized as follows:

	Half-days	Lecture hours
Elementary Law	15	4
Criminal Law	13	3
The Law of Evidence	19	5
Examinations	3	3
Moot Court Exercises		10
Totals	50	25

TEXT-BOOKS

Smith's Elementary Law.
Clark's Criminal Law.
McKelvey on Evidence.

A weight of 120 was assigned this department and distributed as follows:

Elementary Law	35
Criminal Law	25
Law of Evidence	40
Moot Court Exercises	20
Total	120

For a list of lessons and the moot court exercises, see the report of the department for the school year ending August 31, 1905.

SCOPE AND METHOD OF INSTRUCTION

The scope of instruction has necessarily been limited by the small amount of time allotted the department. The department has based its course on the assumption that an officer who has no knowledge of law in general, is limited in his power of mastering his military law and of fully understanding his double responsibility as an officer and as a citizen. In order to give him a better foundation for meeting the many legal questions which will confront him both as a subordinate and as a commanding officer, the course was planned to give the student a knowledge of legal terms in general, of the fundamental principles of the common law, of crimes and the elements constituting crimes, and a more thorough knowledge of the law of evidence than can be gleaned by a study of military law text-books.

The method of instruction was the same as in vogue last year, known as the quiz system, which was introduced in the department by my predecessor, Major D. H. Boughton, 11th Cavalry. It has proved a most satisfactory method to the students in that it

enables all of them to have the same instruction, to hear the same questions and explanations by the same instructor. It also enables the department to get along with a minimum number of assistant instructors.

Although a glance at the text-books used might create the impression that too much law relating to civil affairs is included in the instruction, such is not the case. By the quizzes the principles set forth in the texts are made to apply to the every day life of the officer. The object of the instruction is to make each student more competent to deal with the legal questions which may confront him as an officer of the army and great pains are taken to make the quizzes very practical and applicable to his daily affairs.

The moot court exercises given this year were practically the same as given last year. Owing to the small amount of time allotted the department and the impracticability of reducing the amount of theoretical instruction, only ten lecture hours were available for the moot court exercises. This compelled the students to devote a number of Saturdays and Sundays to these papers. At least ten half-days should be available for practical work with moot court exercises.

The following values, subject to approval, have been adopted by the department for the next school year:

Elementary Law	35
Criminal Law	25
Law of Evidence	50
Moot Court Exercises	20
Total	130

EXAMINATIONS

There were three written examinations each covering a period of four and one half hours. The

instructions governing the examinations were practically the same as given last year. Copies of the examination questions are given below.

EXAMINATION IN ELEMENTARY LAW.

Sheet No. 1

Value per cent	
6	1. (a) What is meant by the sanction of a law? (b) Define municipal law and state wherein lies its sanction.
4	2. Define (a) substantive law; (b) adjective law; (c) public law; (d) private law.
4	3. What is a constitution, and wherein does a written differ from an unwritten constitution?
5	4. Explain in not to exceed 150 words the difference between a confederacy and a federal state.
5	5. What is the civil or Roman law? (b) the common law?
6	6. Give a short history of the Feudal system, the description not to exceed 250 words.
5	7. Name and define three important limitations on the right of the owner absolutely to control his property.
4	8. (a) What is real property? (b) personal property? (c) Are the door knobs on a house real or personal property? Why?
6	9. What are the following estates in real property? (a) fee simple; (b) dower; (c) trust.
5	10. In the law of wills what is meant by (a) descent or inheritance? (b) distribution? (c) executor? (d) administrator?

Sheet No. 2

5	11. (a) What is the difference between a marriage contract and an ordinary contract? (b) between an enlistment contract and an ordinary contract? (c) between a gift and a contract?
5	12. (a) What are essential in all bailments? (b) What is the distinction between a bailment and a sale? (c) What defenses, if any, may a bailee make for not restoring property at termination of bailment?

Value per cent

4 13. Explain in not to exceed 100 words the difference between an assignable contract and one that is also negotiable. Give an example of each.

4 14. Draw a certified check for $100.50, and show who is liable for its payment. Should the bank fail after certification who is liable?

7 15. Bill of Exchange

$500.00 Kansas City, Mo.
December 11, 1905.

Thirty days after sight pay to the order of John Doe Five Hundred Dollars, value received, and charge to the account of

To James Allison, Richard Roe
No. 6, Security Building,
St. Louis, Mo.

(a) The names of three persons appear on the above draft, how are they designated in the law?
(b) On December 12th John Doe goes to St. Louis and on the 13th has the draft accepted; on the following day he transfers it by indorsement in bank to John Smith; John Smith transfers it by indorsement in full (special) to John Jones; the latter in turn transfers the paper to Henry Stiles by indorsement in full restrictive.

Show how these indorsements appear on the back of the acceptance.

(c) When is the acceptance (draft) due, and what will Henry Stiles do with it on that date? Days of grace excluded.
(d) The acceptance (draft) is presented to James Allison on the date of maturity for payment, but he declines to honor it, who are the parties then liable?
(e) Suppose John Doe after going to St. Louis had kept the draft in his pocket until the 20th of December before presenting it for acceptance, and that on the 19th Allison had failed; has the holder used due diligence in presenting the draft for acceptance? In other words is the drawer discharged from liability?

Value per cent

5 16. Define (a) partnership; (b) corporation; (c) explain the difference between the liability of a partner and that of a stockholder.

4 17. What is a tort and how does it differ from a breach of contract?

5 18. Under remedies what is meant by (a) exemplary damages? (b) injunction? (c) foreclosure of mortgage? (d) receiver?

6 19. (a) What is meant by procedure in law? (b) Name the various steps in a proceeding in an action at law. (c) What is the difference between an issue raised by a traverse (denial) and one raised by a demurrer?

5 20. (a) What is a court of equity? (b) A court-martial? (c) Name four important subjects within the jurisdiction of an equity court.

100

EXAMINATION IN CRIMINAL LAW

Sheet No 1

5 1. Define crime in sufficiently broad terms to include both statutory crime and common law crime. Name two common law crimes, two statutory crimes and two military crimes.

5 2. How are crimes divided at common law? Are there any common law crimes against the United States Government? Define treason.

9 3. What is motive? Is it an essential element of crime? Give an example of general intent, constructive intent and specific intent and state wherein they differ.

5 4. In what cases does voluntary drunkeness furnish grounds of exemption from criminal responsibility? Give an example where involuntary drunkeness would furnish exemption from criminal responsibility.

5 5. Is ignorance of the law an excuse for crime? Give reasons for the rule. Give an example of mistake of law.

4 6. A guard over a quartermaster storehouse finds a window open and enters which he has a right to do under his orders. The guard has no means of making a light, but fearing the robber might get away, makes

Value per cent

a search having first fixed his bayonet. The guard hears breathing in a dark corner of the storehouse and believing there might be someone in the corner ready to spring on him, thrusts in the corner with his bayonet and inflicts a mortal wound on the quartermaster sergeant who had fallen in a drunken sleep. Was this a mistake of fact or of law? Give reasons for your answer.

4 7. What is the effect of several persons joining in a common criminal purpose? Define the terms "Aider and Abettor" and "Accomplice."

3 8. What two elements are in every common law crime? Illustrate.

6 9 Define conspiracy and give the elements constituting the crime. Give an example of conspiracy.

2 10. A soldier off the reservation sees a personal enemy approaching holding a pistol pointed at him and uttering threats. The soldier picks up a stone and kills his enemy. It is afterwards discovered that the pistol was not loaded. Upon what grounds can the soldier rest his exemption from criminal responsibility?

Sheet No. 2

4 11. A attempts to commit a murderous assault on B, B fights and fights hard. A drops the fight and runs. A gets into his house a sixth of a mile ahead of B and locks his door. B comes up and knocks down the door and A kills B to save his life. In taking B's life was A guilty of any crime? Give reasons for your answer.

10 12. Define murder and give the elements constituting malice aforethought. Define manslaughter and give the elements constituting voluntary manslaughter.

2 13. A soldier goes hunting off the reservation and feloniously with malice aforethought fires a shot from one state over the boundary line into another state at a personal enemy and kills him. Could he be indicted in the first state for murder under the common law? Could the soldier be indicted under the common law if he were caught in the second state where the homicide took place?

Value per cent

3 14. Can a soldier be tried under the common law for maiming himself? What are the grounds or reasons for this rule at common law?

6 15. Define assault and battery and give the elements constituting each. Can two soldiers consent to an assault and battery providing there is no maiming or disturbing the public peace so far as the common law is concerned?

6 16. Define burglary and give the elements constituting the crime.

5 17. Assuming that the United States Courts have jurisdiction over offenses committed by a citizen of Kansas on the military reservation, what would be the indictment of a citizen of Leavenworth who went upon the reservation and cut grass and left it to remain till it became hay and then returned and removed the hay?

A left his hat with an attendant at the door of the dining room of a hotel. By mistake the attendant handed his hat to X who shortly afterwards came out from dinner. X saw that it was not his hat, but believing it to be a better hat than his own, took it. Of what crime is X guilty? Against whom? Give reasons for your answer.

5. 18. Where an officer appropriates materials known by him to belong to the United States and in his charge as Post Quartermaster and uses them in constructing a carriage which is to be his own property, what offense has the officer committed, if any? Could the officer be indicted under the comon law in the United States Courts?

Define embezzlement.

4 19. Define perjury and subornation of perjury.

4 20. Define piracy and distinguish between piracy and robbery.

3 (neatness etc.)

100 total.

EXAMINATION IN EVIDENCE

Sheet No. 1

5 1. What is evidence?

What is meant by the rules of evidence?

Value per cent

What rules of evidence are courts-martial to follow and why?

How closely should a court-martial follow these rules?

6 2. Name three subjects relating to the customs, habits, or actions of mankind of which courts will take judical notice.

Of what order should a court-martial, convened by a Department Commander, take judical notice? Of what orders should a summary court take judical notice?

6 3. What is a presumption? An inference?

Give three examples of non-conclusive presumptions. Give one example of a conclusive presumption. Give two flat rules of law that commonly masquerade under the language of presumption.

6 4. What is the difference between an admission and a declaration in the regular course of business?

Give an example of an admission before a court-martial.

6 5. The prosecutor said to the prisoner, "If you do not tell, I will send for the constable in the morning to take you to the magistrate." The prisoner did not reply and in the morning when the constable took the prisoner before the magistrate made a confession. Was this confession admissible or not? Why?

A and B, apprentices, are charged with stealing goods from their master. The master told A, in the presence of B, that if he did not confess a constable would be sent for. A then admitted that both of them had committed the theft; whereupon B said, "You are a liar. I took only one handkerchief." Is A's confession admissible upon his trial? Is B's confession admissible upon his (B's) trial? Why?

6 6. Salina, Kansas, December 8, 1903. The taking of evidence in the trial of Mrs. Susan Caldwell (on trial for the murder of her husband) came to an abrupt end today when Judge Rees refused to allow the defense to introduce testimony showing that Caldwell, just before his death, had difficulty with a hired man who had threatened to blow his head off. What was the ground upon which the judge refused this testi-

Value per cent

mony? What would be your vote when a member of a court-martial on the question of admitting threats of a third person on the trial of one for murder?

7 7. Corporal A. W. Greene, 20th Cavalry, is being tried by a court-martial for forgery of a check upon a bank, purporting to be drawn to his order by his troop commander, Captain W. M. Snow, 20th Cavalry.

The judge advocate has proved that when arrested the accused had three other checks upon his person upon the same bank payable to his own order one of which purported to be drawn by Captain W. M. Snow, 20th Cavalry. The judge advocate then proposed to show that the three checks found upon the accused and also four others, passed by him about the same time, were forgeries.

This is objected to by the defense upon the grounds that it is showing proof of collateral facts and as contrary to the rule that evidence of one crime is not admissible to prove another crime.

Is the evidence admissible? Give, briefly, the reasons for your answer.

4 8. You are judge advocate of a court-martial trying an accused for being drunk on guard. You have a witness that will testify that the accused was drunk on the occasion in question. Give the questions you would ask this witness before turning him over for cross-examination.

Sheet No. 2

5 9. The question was as to the amount of damages to be awarded the plaintiff, a woman, injured through the negligence of a railroad company. A Miss Drummond was called as a witness and testified that she was acquainted with the plaintiff; describing her personal appearance and physical condition previous to her injury. She also described the plaintiff's condition immediately after the accident, and for a few days afterwards. After she had testified to these facts, she stated that she saw the plaintiff a month afterwards; that she (the plaintiff) had grown worse and the witness described her condition as it then existed.

Value per cent

This was objected to by the railroad company on the ground that Miss Drummond was not a doctor and hence not an expert on physical condition. Should this objection have been sustained? Why?

7 10. What is the general rule as to the exclusion of character evidence?

When may character evidence be introduced in trials?

For what purpose may the accused in military trials introduce evidence as to his character?

What difference exists as to the mode of proof of character of the accused at the common law and in military law?

6 11. Several soldiers of a command are being tried for mutiny. A first sergeant of one of the companies, trying to stop the mutiny, is seized and bound by two of the mutineers. While binding him one said to the other, "Hurry up, Jim, so that we can get over to the K. O.'s to see the fun when he's rounded up." Is it competent for the first sergeant on the witness stand to give this statement in evidence? Why?

6 12. Lord George Gordon, being arrested in the act of leading a mob, was tried for treason. The prosecution introduced in evidence the cries of the mob by which Gordon was accompanied and which recognized him as leader to show that his intentions were unlawful and traitorous. Upon what ground was evidence of these cries admissible?

6 13. Two soldiers, A and B, are playing cards in a tent. A shot is heard in the tent and B comes running out saying to the guard, which instantly comes up, "It's all over with me, boys. A has done for me." B dies ten minutes afterwards. Is it competent for the members of the guard to give this statement in evidence? Why?

7 14. What persons are incompetent to testify before courts-martial?

Name three subjects in respect to which all persons may exercise the privilege of refusing to testify.

7 15. In what ways may the testimony of a witness be impeached?

Value per cent

Should one of your witnesses surprise you when you are judge advocate, by which of the ways you have given in answer to the first part of the question could you attack his testimony?

7 16. Winona Newton was murdered in Kansas City at dark, November 3, 1905. One Francis was tried for the murder. His mother, the day after the murder, made a written statement to the police that her son came home about four o'clock p. m. the day before. (That is, the day of the murder). Francis and his alibi witnesses gave testimony that at half past five he was at the corner of Eighth and Main streets. If true this established an alibi for he could not have reached home in time to commit the murder, which was committed within two or three blocks of his home. You are prosecuting attorney. Is there any way in which you could get the statement of the mother before the jury? She is still alive, but was not called by the defense.

The highest percentage obtained was 98.659, the lowest, 76.538. Three student officers have over 97 per cent. Two student officers were deficient upon their first examination in Evidence, both were proficient upon their re-examination.

Respectfully submitted,

H. O. WILLIAMS,

Captain, 5th Infantry,

Instructor.

[APPENDIX G.]

INFANTRY AND CAVALRY SCHOOL

DEPARTMENT CARE OF TROOPS

Fort Leavenworth, Kansas, May 23, 1906.

The Secretary,
Infantry and Cavalry School,

Sir:

I have the honor to submit the following report of the work of this department for the scholastic year ending June 30, 1906:

The undersigned was detailed for duty as Instructor Department Care of Troops by the following order:

INFANTRY AND CAVALRY SCHOOL,
SIGNAL SCHOOL AND STAFF COLLEGE

Fort Leavenworth, Kansas, November 15, 1905.

ORDERS
No. 13.

With the concurrence of the Post Commander, under the provisions of paragraph 58, General Orders No. 140, War Department, dated Washington, August 19, 1905, Major Edward C. Carter, Medical Department, in addition to his other duties, is announced as Instructor, Department of Care of Troops.

BY ORDER OF MAJOR SWIFT:

(signed) MILTON F. DAVIS,
Captain, 10th Cavalry,
Secretary.

As there was no other officer detailed for duty in that department, the undersigned delivered all lectures and conducted all recitations and prelections.

The course began on 22d November and terminated on 22d December, 1905. There were on the schedule 7 lectures and 14 recitations. One entire day was devoted to written examinations: There were 20 questions and the average number of pages written by each of the 50 student officers was 25.

The text-book was Woodhull's Military Hygiene, edition 1905; a value of 40 was assigned to this department.

Following is the scheme of lessons and lectures followed:

[MEMORANDUM A.]

DEPARTMENT OF THE CARE OF TROOPS

INFANTRY AND CAVALRY SCHOOL

Lessons and Lecture Subjects, 1905-6

TEXT—Woodhull's Notes on Military Hygiene.

LESSONS:

1.	Paragraphs	1	to	59	inclusive.	
2.	"	60	"	100	"	
3.	"	101	"	192	"	
4.	"	193	"	259	"	
5.	"	260	"	321	"	
6.	"	322	"	367	"	(*)
7.	"	368	"	430	"	
8.	"	431	"	498	"	
9.	"	499	"	577	"	
10.	"	778	"	642	"	
11.	"	643	"	749	"	
12.	"	750	"	797	"	
13.	Pages	185	to	224	inclusive.	
14.	Pages	1	to	184	inclusive.	

LECTURES:

1. General considerations.
2. Structure and functions of man.

(*) Paragraphs 365, 366 and 167 are to be studied but not committed.

3. Selection of soldiers.
4. Special hygiene.
5. Personal hygiene.
6. Water.
7. Preventable Diseases.

It was considered advisable first to lay down the broad principles underlying the scientific care of troops, in so far as their physical and psychical hygiene is concerned, and then to demonstrate to the class the propositions stated in the text-book.

This method was carried out in a series of prelections lasting usually about 20 minutes each and delivered before each section separately or before the whole class, and by a few reviews of 30 minutes each, held near the end of the course.

This method, it is hoped, proved of benefit to the class, as the examination papers showed, generally, a fair average.

Members of the class were encouraged to ask the instructor in his office for explanations of any obscure matters.

The purposes and needs of this department have been so well set forth by my predecessors that they are not mentioned here.

It is hoped, after the termination of the school year of 1906-7, that means may be found to make the teaching in this department *practical* as well as theoretical.

Very respectfully,

EDWARD CHAMPE CARTER,
Major and Surgeon, U. S. Army,
Instructor.

[APPENDIX H.]

INFANTRY AND CAVALRY SCHOOL

DEPARTMENT OF SPANISH

Fort Leavenworth, Kansas, August 31, 1906.

The Secretary,
Infantry and Cavalry School,
Fort Leavenworth, Kansas.

Sir:

I have the honor to submit the following report of the work of this Department for the year ending August 31, 1906:

ALLOTMENT OF TIME

From September 1 to December 23, 1905, 79 days were available for school work of which no time was allotted to the Department. From January 3 to June 30, 1906, 126 days were available of which 50 half days were allotted. Total for the year 50 half days.

TEXT-BOOKS

Traub's Pronunciation and Verb.
Marion and Des Garennes' Introducción á la Lengua Castellana.
Kroeh's How to Think in Spanish.
Worman's First Spanish Book.

ALLOTMENT OF ASSIGNED WEIGHT

A weight of 120 was assigned to this Department and was distributed as follows:

Practical work	40.0
Examination	80.0
Total . . .	120.0

LIST OF EXERCISES FOR YEAR. (Practical.)

3 phonograph records.
2 oral tests.

SCOPE AND METHOD OF INSTRUCTION IN THEORETICAL AND PRACTICAL WORK

THEORETICAL WORK

(a) *Scope*—

The scope of the theoretical work was planned with a view to giving each student officer such a knowledge of the pronunciation, grammar, verbs, vocabulary and idioms of Spanish as would afford him a sound foundation for a practical speaking knowledge of the language. A reference to the text-books and list of lessons already given will indicate fully the theoretical course followed.

(b) *Methods*—

The methods of theoretical instruction included the use of lectures, quizzes, and conferences. Lectures were delivered by the undersigned and by each of the assistant instructors on important and difficult points in Spanish, and the subjects were so selected as to supplement the text. These lectures were afterwards carefully edited and printed and issued to the student officers as interpolated sheets for reference. These interpolated sheets were likewise issued to all student officers in the Signal School and Staff College, and distributed to student officers who took the course last year. Similar distribution will be continued in future to all graduates that they may keep abreast of any improvement in the elucidation of difficult points in Spanish.

Quizzes were used in place of reviews; they were taken out of the lecture hours and were conducted by the undersigned and the assistants, each with his own section.

As a result of experience in the conference system with the Staff class in French and German, rec-

itations and blackboard work in the infantry and cavalry class in Spanish were entirely discarded and the conference system introduced; the results show the wisdom of this course. The class was divided into 3 sections of 17, 17, and 16 student officers each. These sections changed instructors weekly. After the first two or three conferences, Spanish was used entirely, and, as they were of two hours' duration, sufficient time was had to go over the daily work thoroughly in conversation, each officer receiving a great deal of practice. This enabled the lower half of the class (with a few exceptions) on the examination to do *almost* as well in conversation as the upper half.

PRACTICAL WORK

(a) *Scope*—

The scope of the practical work was planned with two objects in view: 1. To give to each student officer a correct pronunciation and conversational fluency and facility. 2. To make him study as hard throughout the course as though he received a daily mark, thus avoiding the cramming process for the examination.

(b) *Method*—

The phonograph and texts of the International Correspondence Schools of Scranton, Pa., were made use of for the sole purpose of giving a correct pronunciation. Each student officer made 3 records, and underwent 2 oral tests. The latter were substituted for the phonograph records to avoid any chance of doing injustice to the officers from the introduction into the exercise of any element dependent upon the mere manipulation of the machine. Here again the results justified the means adopted.

To illustrate the method employed to make the student officer study as hard as though he received a

daily mark, I submit herewith a copy of instructions covering the last phonograph record, and the last oral test, together with the actual tests they underwent.

DEPARTMENT OF SPANISH

Infantry and Cavalry School

Phonograph test No. 3 will be held Thursday, April 5, 1906, and will be conducted in the same manner as was test No. 2, seven minutes being allowed in the preparatory room and eight minutes to make the record.

Test No. 3 will consist of 5 parts:

1. Pronunciation of 10 selected Spanish words; value of each, one tenth; total value, 1.0.

2. Translation into Spanish of 10 selected English words; value of each, one tenth; total value, 1.0.

3. Five questions in Spanish to be answered in Spanish into the phonograph; value of each, five tenths; total value, 2.5.

4. Speaking into the phonograph one simple tense, of any form (affir., neg., interrog., or neg. interrog.) of a selected Spanish verb; value, 1.0.

5. Translating into the phonograph into Spanish five selected English sentences; value of each, five tenths; total value, 2.5.

Grand total, 8.0.

Remarks applying respectively to above mentioned 5 parts:

1. Any word may be selected for pronunciation: z error=.1; y error=.06; x error=.04.

2. The ten words for translation will be selected from the "vocabulario" of "lecciones quinta, sexta, séptima" in the "Introducción." With nouns the article will be required; with adjectives, the masc. sing. form. A mistake in pronunciation, or tonic accent, will count .02; a mistake in gender, .03.

3. The questions in Spanish must not be repeated into the pronograph, only the answer thereto. The questions will be selected from the "conversación" or "ejercicio de verbos" in "lecciones quinta, sexta, and séptima" in the "Introducción." Each answer must contain a predicate, must be pertinent to the question, and must not contain a noun object

but the corresponding object pronoun of *prevailing usage.* ¿Tiene V. su libro? would have to be answered in some such way as: Sí señor, lo tengo, or Lo tengo; but not by Tengo mi libro.

4. The tense will be selected from the conjugate verbs anywhere from p. 72 to p. 95 inclusive. The pronoun subject need not be expressed except for V. and VV.—8 forms in all.

5. The English sentences will be selected from the quizz sheet to "lecciones quinta, sexta, and séptima." With the dative pronoun the pleonastic construction will be required. *He gives it to me* should be translated: El me lo da á mí.

Phonograph Test No. 3.

(a) Pronounce into the phonograph:
Genérico, bajaes, atestigua, fingir, alférez, arrullo, huyes, Machabeos, roído, algiuen.

(b) Translate into the phonograph:
The weather, besides, the season, the rain, excuse me, to happen, to proceed, the disposition, while, yet.

(c) Speak into the phonograph *Spanish answers* to the following questions using *object pronouns* in place of nouns:

1. ¿Cuándo aprende Juan sus lecciones?
2. ¿No ven VV. á Carlos y á Pedro?
3. ¿Con qué escribo yo en la pizarra?
4. ¿Escribo V. su ejercicio en la clase?
5. ¿Tiene el castellano la forma progresive?

(d) Speak into the phonograph the following simple tense:
The past definite of *Lavarse.* Interrogative form.

(e) Translate into the phonogragh the following sentences, using the *pleonastic construction* with the *dative* pronoun (*do not translate words in brackets*):

1. My friends write me each week.
2. I know them [verbs] perfectly.
3. Peter has told us what it contains.
4. Who teaches you Spanish?
5. He is explaining it [the lesson] to her.

The fifth *and last* Spanish test will take place Tuesday, May 1, 1906, commencing at 7:45 a. m. The test will be an *oral* examination, and will be conducted in the same manner as was test No. 4, *except* that there will be *no preparatory time* or *work allowed.* For every *minute* overtime in the test

one tenth of a unit will be deducted from the mark of the student officer, and for every fraction of a minute a corresponding portion of one tenth of a unit.

Test No. 5 will consist of five parts:

1. Pronunciation of 10 selected Spanish words; value of each, one tenth; total value, 1.0.
2. Translation into Spanish of 10 selected English words; value of each, one tenth; total value, 1.0.
3. Five questions in Spanish to be answered in Spanish; value of each, five tenths; total value, 2.5.
4. Give one simple tense, of any form (affirm., neg., interrog., or neg. interrog.) of a selected Spanish verb; value, 1.0.
5. Translating into Spanish five selected English sentences; value of each, five tenths; total value, 2.5. Grand total, 8.0.

Remarks applying respectively to above mentioned five parts:

1. Any word may be selected for pronunciation; z error =.1; y error=.06; x error=.04.
2. The ten words for translation will be selected from the "vocabulario" of "lecciones décima, undécima, and duodécima," in the "Introducción." With nouns the article will be required; with adjectives, the masculine singular form. A mistake in pronunciation, tonic accent, or *faulty syllabication*, will count .02.; a mistake in gender, .03.
3. The questions will be selected from the "conversación" or "ejercicio de verbos" in "lecciones décima and undécima" in the "Introducción." Each answer must contain a predicate and must be pertinent to the question.
4. The tense will be selected from some irregular verb, between pp. 146-181 inclusive, *conjugated in full in the verb book* and *taken* by the student officer in accordance with modified list of lessons published on interpolated sheet.
5. The English sentences will be selected from the quiz sheets to "lecciones décima and undécima."

Test No. 5.

(a) Pronounce:

1. Irlandés.
2. Cantarín.
3. Guayusa.
4. Judihuelo.

5. Guindastes.
6 Durvíllea.
7. Riñonada.
8. Zaquizamí.
9. Tracción.
10. Duay.

(b) Translate into Spanish:

1. the rice.
2. How are you?
3. the lettuce salad.
4. sweet.
5. exactly.
6. Really!
7. the waves.
8. in spite of.
9. Merry Christmas.
10. the speed.

(c) Answer in Spanish:

1. ¿Dónde estaba V. el año pasado?
2. ¿À cuántos estamos hoy?
3. ¿Se marea V.?
4. ¿Cuáles son los estudios de V.?
5. ¿Qué va V. á hacer mañana?

(d) Give the imperative affirmative of *Poner*.

(e) Translate into Spanish:

1. Did you use to study when you were at school?
2. Before to-day I had heard nothing.
3. I have an appointment for Monday morning.
4. This steamer sailed the third.
5. When I had finished I left the country.

The five phonograph records and oral tests each counted eight units, making a total of 40.

The highest mark obtained was 39.640, the lowest proficient was 31.301, and the average 37.11628 or 92.8 per cent. One student officer was deficient. He was re-examined on May 12, made 90.94 per cent and was declared proficient.

EXAMINATIONS

The examination counted 80, took 1½ days, and was partly oral and partly written. The examination differed from that of the preceeding year not only in the count but also in the method. The phonograph was omitted and for the same reasons as in the last two tests. The vocabulary was tested by itself; the subject of pronouns, order, agreement, and construction also by itself,—a printed working vocabulary

being furnished each officer in translating his sentences. A copy on the instructions for the examination is incorporated below.

Examination Memorandum

I. Bring this memorandum to the examination room and read it carefully before beginning work.

II. The examination in Spanish will be partly written and partly oral.

III. WRITTEN EXAMINATION.

1. The written examination will be held on Monday, May 7, between 1.30 and 6.15 p. m.

This written examination has a value of 40 out of a maximum of 120, in determining class standing. It will consist of two sheets. Sheet No. 1 will comprise:

(a) The translation of 50 words selected from the "vocabulario" of "lecciones primera to duodécima" inclusive, of the "Introducción." Value of each word, two tenths; total value, 10.0. With nouns the article will be required; with adjectives, the masculine singular form.

(b) Writing out 10 selected tenses of various Spanish verbs. Value of each tense, one half of a unit; total value, 5.0. The tenses (any form) will be selected from *fully conjugated* verbs in the verb book, which have been taken by the student officer during the entire course.

In writing out the tenses of the verb write out the verb forms corresponding to V. and VV., thus making eight forms for each tense. The subject pronouns, except V. and VV., will not be expressed. Each tense will be written in a column in the space provided and each verb form must be written out in full. No abbreviation of any verb form nor ditto marks will be used.

(c) The translation of a short piece of *original* English prose, involving ordinary constructions and also *idioms* specified in the "Introducción" under each lesson as "expresiones para anotar." Total value, 5.0.

2. After turning in their answers to sheet No. 1, student officers may, if they so desire, leave the room before taking and beginning work on sheet No. 2.

3. Sheet No. 2 will comprise 60 English sentences to be translated into Spanish. Value of each, one third of a unit: total value, 20. The translation of these sentences will involve

construction, order, agreement, and a knowledge of pronouns of all kinds. The infinitive of verbs, the translation of nouns, and the masculine singular form of adjectives, together with such other words the knowledge of which is not to be tested, will be furnished the student officer on a printed slip as soon as he hands in sheet No. 1 and takes sheet No. 2. Whatever is not *thus* given the student officer he will know he is to be tested on in his answers to the sentences given for translation. With every *dative* object pronoun, the *pleonastic* construction will be required; with every *accusative* object pronoun only the *simple form* will be required.

These 60 selected sentences will be *similar to* but not necessarily the same as the sentences on the quiz sheets to "lecciones primera to undécima" inclusive, in the "Introducción."

4. All papers must be turned in by 6:15 p. m.

5. The questions will not be copied. The answers or translations corresponding to each question will be written in the blank space immediately following such question on the examination paper. Should such space prove insufficient, any desired corrections may be written upon blank sheets of legal-cap paper and appended to the printed sheets. Whenever the answer to a question is thus supplemented, write in the margin to the left of the original question "see also page—;" and number the additional answer to correspond to the question.

6. On each sheet (printed or additional) write your number in the upper right-hand corner, and number all pages consecutively in the lower right-hand corner. The name of the student officer will not appear on any examination paper.

7. All written matter will be in ink, and the writing must be legible enough to show clearly the spelling, accentuation, etc., intended. Write only on one side of paper.

8. Where a sentence is susceptible of more than one translation, give any one if they are equally accurate and correct, otherwise give the translation that accords with the best usage.

9. Before turning in your paper, read it over carefully and make any necessary corrections or additions; after which, arrange the sheets in proper order and fasten all together at upper left-hand corner only, with one paper fastener.

10. The examination questions are clear and precise, and no explanation of their meaning will be given.

IV. ORAL EXAMINATION.

1. This will comprise two parts, having a total value of 40 in determining class standing.

2. Part I. of the oral examination will be held between 7.45 a. m. and 12.30 p. m. on May 7. It will consist of—

(a) The pronunciation of 25 words selected from the Spanish language. Value of each word, two tenths; total value, 5.0.

(b) Reading aloud in Spanish a selection from Worman's Reader, had during the course. Student officers will be marked not only on individual words but on sentence and *piece* accent,—reading the selection with proper expression as a Spaniard would. Total value, 5.0.

(c) Answering in Spanish five questions asked in Spanish and concerning the selection read in (b). Value of each answer, one unit; total value, 5.0.

(d) Answering in Spanish ten questions asked in Spanish and involving the use of words and constructions had in Worman's Reader and in the heavy type sentences of How to Think in Spanish, pages 68-98 inclusive. Value of each answer, one unit; total value, 10.0.

3. For part I. oral examination above mentioned, the class will be divided into two sections, the order in each section being determined by lot. The first section (Akeley to Johnson inclusive) will assemble in the lecture room and the second section (Knowles to Young inclusive) in the Infantry and Cavalry assembly room at 7.40 a. m. After roll call, the 1st section will be examined by Captain Traub in his office in §§ a, b, c, while the 2d section is being examined in § d by Captains Parker and Spaulding in section room C, Infantry and Cavalry School. Six minutes will be allowed in each examination room.

No preparatory time nor work will be allowed. For every minute overtime, one unit will be deducted from the mark; and for any portion of a minute, a corresponding portion of a unit. When each section has been so examined they will change places, the 2d section being assembled in the lecture room and examined in the prescribed order by Captain Traub in his office in §§ a, b, c; the 1st section being assembled in the Infantry and Cavalry School assembly room and examined in § d in the prescribed order by Captains Parker and Spaulding in section room C.

4. Part II. of the oral examination will be held between 7.45 a. m. and 12.00 noon on May 8. The class will be divided in the same two sections and the order in each will again be determined by lot. While the first section (assembled in the lecture room at 7.45) is being examined in his office by Captain Traub, the 2d section (assembled in the Infantry and Cavalry School assembly room) will undergo the *same* examination in section room C by Captains Parker and Spaulding.

5. Part II. will consist in answering in Spanish 15 questions put in Spanish to the student officer. These questions will comprise words and constructions selected from the "conversaciones" and "ejercicos de verbos" taken in the "Introducción" and to include "lección undécima." Value of each answer, one unit; total value, 15.0. No preparatory time nor work will be allowed. Time allotted for part II, eight minutes. For every minute overtime, one unit will be deducted from the mark; and for any portion of a minute a corresponding portion of a unit.

6. The Spanish answers required in c and d of Part I. and in Part II. of the oral examination, must each contain a predicate and must be pertinent to the questions asked. The simple replies, "Sí, señor" or "No, señor" will not be accepted.

7. During the oral examination, the examining officers will write down all the errors made by the student officers. The mark itself will be determined later by the Department.

V. The certificate will not be attached to the examination paper, but will be turned in separately upon completion of the entire examination, written and oral, and will apply to both. It will be signed with the official signature of the officer.

The examination took place just as scheduled. All the student officers obtained the required 75 per cent. The highest mark obtained was 79.4751 out of 80.0; the lowest 60.0037; the average 74.68363 or 93.4 per cent. Including both practical work and examination, the highest mark obtained was 119.0151 out of 120.0; the lowest 89.4337; the average 111.79991 or 93.2 per cent. 14 officers obtained the *honor grade* of 97 per cent. and over in Spanish, 10 others the *distinguished grade* of 95.97 per cent.

REMARKS

The excellent records made by this class of student officers was due to two causes, viz: their own hard and enthusiastic work, and the efficient and invaluable assistance given the undersigned by his two assistant instructors, Captain Francis Le J. Parker, 12th Cavalry, and Captain O L. Spaulding, Jr., Artillery Corps.

RECOMMENDATIONS

1. That at least 78 lessons be assigned to Spanish.

2. That an additional assistant be assigned to duty with the Department so as to relieve the undersigned from the necessity of actual teaching in the class room.

3. That in addition to the usual expenditures for phonograph supplies, etc., the sum of twenty-five dollars be allotted the Department to be expended in the purchase of such Spanish books, not obtainable for the school library, as may be deemed proper by the undersigned with the approval of the commandant.

PETER E. TRAUB,
Captain, 13th Cavalry,
Instructor.

THEORETICAL:---

Lectures and Quizzes.	Lesson No.
Lecture.—Pronunciation	1
" Phonograph	2
" Phonograph	3
" Phonograph	4
	5
	6
	7
Lecture.—The articles and the Subject Personal Pronouns	8
	9
Lecture.—Subject and Verb. Noun and Adjective	10
	11
Quiz.—*Lecciones Primera y Segunda, Introducción*	12
	13
Lecture.—Demonstratives and Possessives	14
	15
	16
Lecture.—Orthographic Changes in Verb	17
Quiz.—*Lecciones Tercera y Cuarta, Introducción*	18
	19
Lecture.—Object Personal Pronouns of Third Person	20
Lecture.—Comparative and Superlative Expressions	21
	22
Lecture.—Object Pers. Pronouns of First and Second Persons	23
	24
	25
Lecture.—Position of Personal Pronouns	26
Quiz.—*Lecciones Quinta, Sexta y Séptima, Introducción*	27
Lecture.—Cardinal, Ordinal and Fractional Numbers	28
Lecture.—*Ser* and *Estar*. The Personal Accusative	29
	30
	31
Lecture.—The Object Personal Pronouns	32
Lecture.—Passive Verb and Reflexive Substitute	33
Lecture.—Use of Past Tenses of Indicative Mood	34
Lecture.—Relative and Interrogative Words	35
	36
Lecture.—Irregular Verbs	37
	38
Quiz.—*Lecciones Octava y Novena, Introducción*	39
	40
	41
Lecture.—Origin of Spanish. Importance of Language to Officer	42
	43
	44
Quiz.—*Lecciones Décima y Undécima, Introducción*	45
	46
	47

[APPENDIX I.]

Total Number of Student Officers Detailed for the Infantry and Cavalry School, since 1902.

CAVALRY	1902-3	1903-4	1904-5	1905-6	1906-7	TOTAL	
1st	2	3	2	1	1	9	
2nd	1	3	0	0	2	6	
3rd	4	3	2	1	0	10	
4th	4	3	1	0	0	8	
5th	1	3	1	2	1	8	
6th	1	3	2	1	2	9	
7th	2	3	1	0	0	6	
8th	5	3	1	0	0	9	
9th	1	3	1	1	1	7	
10th	1	3	1	1	1	7	
11th	1	0	2	2	1	6	
12th	6	0	0	2	2	10	
13th	0	0	0	2	2	4	
14th	1	0	0	2	2	5	
15th	1	1	2	2	1	7	111
INFANTRY							
1st	4	2	2	1	0	9	
2nd	2	3	2	1	0	8	
3rd	0	3	0	0	2	5	
4th	2	1	0	2	2	7	
5th	3	2	2	1	2	10	
6th	3	3	1	0	0	7	
7th	4	3	0	0	2	9	
8th	2	3	1	1	0	7	
9th	2	3	1	0	1	7	
10th	1	3	2	1	0	7	
11th	4	0	2	2	2	10	
12th	4	3	0	0	2	9	
13th	1	3	1	1	0	6	
14th	1	1	0	2	2	6	
15th	3	3	1	1	0	8	
16th	4	3	1	0	0	8	
17th	1	0	0	2	2	5	
18th	3	0	0	3	2	8	
19th	4	3	1	0	0	8	
20th	4	3	0	0	2	9	
21st	3	3	1	0	0	7	
22nd	2	3	0	0	2	7	
23rd	0	0	0	2	2	4	
24th	1	3	1	1	0	6	

25th	0	3	1	1	1	6	
26th	1	3	2	1	1	8	
27th	1	0	2	2	1	6	
28th	2	0	2	2	2	8	
29th	2	0	2	2	2	8	
30th	1	0	2	2	1	6	219
ARTILLERY	0	0	0	0	3	3	3
ENGINEERS	0	0	0	1	0	1	1
MILITIA							
Mass.	0	0	0	1	0	1	
Tenn.	0	0	0	1	0	1	
Tex.	0	0	0	1	0	1	
Wash.	0	0	0	1	0	1	4
FOREIGN ARMIES							
French Cav.	0	0	0	0	1	1	
Mexican Inf.	0	0	0	0	2	2	3
Total	96	91	46	53	55		341

STAFF COLLEGE

Fort Leavenworth, Kansas, August 31, 1906.

The Chief of Staff,
United States Army,
Washington, D. C.

Sir:

I have the honor to submit the following report on this School for the year commencing August 25, 1905, and ending August 24, 1906:

The following was the personnel of the College at the beginning of the College year (September 1, 1905):

COMMANDANT

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

PERSONAL STAFF

1st Lieutenant William N. Hughes, jr., 13th Infantry.
1st Lieutenant Clarence O. Sherrill, Corps of Engineers.

Lieutenant Sherrill having entered the class of the Infantry and Cavalry School on September 1, 1905, was, at his own request, relieved from duty as Aide-de-Camp, to date November 30, 1905, per Orders No. 15, dated November 28, 1905.

2d Lieutenant Frederick Mears, 5th Cavalry, was directed to report for duty as Aide-de-Camp per paragraph 5, Special Orders No. 282, War Department, dated December 5, 1905, and was announced as Aide-de-Camp per Orders No. 18, dated December 18, 1905.

Lieutenants Hughes and Mears were relieved from duty as Aides-de-Camp per paragraph 19, Special

Orders No. 189, War Department, dated April 14, 1906, General Bell having been appointed Chief of Staff.

ASSISTANT COMMANDANT

Major Eben Swift, 12th Cavalry.

Major Swift performed the duties of Commandant from August 15 to November 21, 1905, and from April 4 to June 25, 1906, in absence of the commandant.

SECRETARY AND DISBURSING OFFICER

Captain Milton F. Davis, 10th Cavalry.

Captain Davis, on May 1, 1906, availed himself of leave of absence, granted per paragraph 11, Special Orders No. 76, War Department, dated March 30, 1906.

1st Lieutenant William N. Hughes, jr., 13th Infantry, performed the duties of Secretary during the absence of Captain Davis on leave, in obedience to Orders No. 14, dated April 30, 1906.

DEPARTMENT OF MILITARY ART

Major Charles H. Barth, 12th Infantry, Instructor.
Captain Matthew F. Steele, 6th Cavalry, Asst. Instructor.
Captain Charles Crawford, 20th Infantry, Asst. Instructor.
Captain John D. L. Hartman, 1st Cavalry, Asst. Instructor.
Captain John P. Ryan, 6th Cavalry, Asst. Instructor.

Major Barth, was, on October 11, 1905, severely injured by his horse falling upon him, during the progress of a field maneuver, necessitating his being confined to quarters until December 18, 1905, when he availed himself of leave of absence on account of sickness, granted per paragraph 11, Special Orders No. 288, War Department, dated December 12, 1905. His leave was extended two (2) months, on account of sickness, per paragraph 13, Special Orders No. 82, War Department, dated April 6, 1906.

Major Barth was relieved from duty at Staff College per Orders No. 15, dated May 1, 1906, to enable him to comply with instructions from office of the Military Secretary, dated April 28, 1906.

Major Daniel H. Boughton, 11th Cavalry, was transferred from the Department of Law to the Department of Military Art and announced as Instructor, on January 8, 1906, per Orders No. 2, dated January 8, 1906.

DEPARTMENT OF ENGINEERING

Major Lansing H. Beach, Corps of Engineers, Instructor.
Captain Edwin R. Stuart, Corps of Eng., Asst. Instructor.

DEPARTMENT OF LANGUAGES

Captain Peter E. Traub, 13th Cavalry, Instructor.
Captain Francis Le J. Parker, 12th Cavalry, Asst. Instructor.
Captain Oliver L. Spaulding, jr., Artillery Corps, Assistant Instructor.

DEPARTMENT OF LAW

Major Daniel H. Boughton, 11th Cavalry, Instructor.
Captain Herbert O. Williams, 5th Infantry, Asst. Instructor.

Major Boughton was transferred to Department of Military Art on January 8, 1906, per Orders No. 2, dated January 8, 1906 and Captain H. O. Williams, 5th Infantry, appointed Instructor, by same order.

STUDENT OFFICERS

Of the twenty-three officers constituting the Staff Class, the following named were members of the Infantry and Cavalry Class of 1904-5, which was graduated July 1, 1905, viz:

Captain Farrand Sayre, 8th Cavalry.
Captain Hanson E. Ely, 26th Infantry.
Captain William H. Paine, 7th Cavalry.
Captain Harry H. Tebbetts,30th I nfantry.
Captain Lucius R. Holbrook, 5th Cavalry.

Captain Campbell King, 1st Infantry.
Captain Stuart Heintzelman, 6th Cavalry.
First Lieutenant Clement A. Trott, 5th Infantry.
First Lieutenant Andrew J. Dougherty, 28th Infantry.
First Lieutenant Ralph McCoy, 27th Infantry.
First Lieutenant William H. Waldron, 29th Infantry.
First Lieutenant Roger S. Fitch, 1st Cavalry.
First Lieutenant Edward A. Kreger, 28th Infantry.
First Lieutenant Charles E. McCullough, 15th Cavalry.
First Lieutenant John S. Fair, 9th Cavalry.
First Lieutenant Brice P. Disque, 3rd Cavalry.
Second Lieutenant Kenyon A. Joyce, 6th Cavalry.

These officers were, by authority of the Chief of Staff, conveyed in War Department telegram, retained at Fort Leavenworth as members of Staff College class, and with the following, subsequently detailed by War Department orders, constituted the class of 1906:

Captain Samuel C. Vestal, Artillery Corps.
Captain Fox Conner, Artillery Corps.
Captain Henry W. Butner, Artillery Corps.
Captain James A. Woodruff, Corps of Engineers.
Captain Walter T. Bates, 27th Infantry.
First Lieutenant Gilbert A. Youngberg, Corps of Engineers.

No changes occurred in student personnel during college year.

It is hoped that before many years a part of the course now covered in this college may be included in the Infantry and Cavalry School course and another advance be made in the curriculum of the Staff College.

Very respectfully,

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

[APPENDIX A.]

STAFF COLLEGE

OFFICE OF ASSISTANT COMMANDANT

Fort Leavenworth, Kansas, August 31, 1906.

The Secretary,
Staff College,
Fort Leavenworth, Kansas.

Sir:

I have the honor to submit the following report of the assistant commandant for the year ending August 31, 1906:

The assistant commandant, owing to the absence of Brigadier General J. F. Bell, performed the duties of commandant from August 15, 1905, until November 21, 1905, and from April 4, 1906, until June 26, 1906.

The report of the assistant commandant for the past year must almost entirely deal with the department of military art in which he was principally occupied. He was relieved by Major C. H. Barth from charge of the Department of Military Art on August 15th, after having prepared the course of instruction for the year. He again took charge of the department on the injury to Major Barth on October 11, 1905, and retained it until the detail of Major Boughton on January 3, 1906; during the entire year, with the assistance of Captain J. D. L. Hartman, he conducted the instruction of the Staff Class in Kriegsspiel and problems for original solution, and assisted in staff rides. The only duties in addition to these were the preparation of the schedules for the entire college for the year.

ALLOTMENT OF TIME

From September 1, 1905, to June 30, 1906, 412 half-days were available, which were distributed as follows:

DEPARTMENTS	Half days due	SEPT.		OCT.		NOV.		DEC.		JAN.		FEB.		MARCH		APRIL		MAY		JUNE	
		Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due	Half days used	Balance due
Mil. Art	188	20	168	31	137	7	130	15	115	0	115	17	98	34	64	21	43	23	20	20	0
Eng.	106	12	94	3	91	29	62	0	62	0	62	0	62	0	62	19	43	21	22	22	0
Law	60	10	50	10	40	8	32	15	17	0	17	5	12	10	2	2	0	0	0	0	0
Lang's	58	0	58	0	58	0	58	0	58	42	16	16	0	0	0	0	0	0	0	0	0
TOTALS	412	42	370	44	326	44	282	30	252	42	210	38	172	44	128	42	86	44	42	42	0

The distribution of time was shown in detail on a calendar, giving the assignment of work for every hour of allotted time during the year. This was prepared several months in advance and was of considerable assistance in giving a permanent and definite form to the course of instruction.

TEXT-BOOKS

As the members of the Staff Class had used "Studies in Applied Tactics" in the Infantry and Cavalry course that book was omitted and more advanced works were substituted. The following were added:

The Battle of Custozza, by Verdy du Vernois.
Staff Duties in the Field, by Major von Widdern.
A Tactical Ride, by Verdy du Vernois.

The other text-books remained as before.

The question of a text book on strategy has taken much time and attention. It is the study of strategy which more than any other exposes the military student to the charge of pedantry. It comes from studying the high theory of the books instead of the history on which these books are based. We have early adopted a comprehensive study of military history and confidently left the strategy as a logical result of the former. We therefore simply needed a manual and so far the "Conduct of war" by von der Goltz has done very well. After examining many books the services of Captain Carl Reichmann were obtained through the Bureau of Information for the translation of the strategical portion of von Verdy's recent work "Studies on War" and I have the manuscript but have not had time to thoroughly examine it.

SCOPE AND METHOD OF INSTRUCTION

The methods were the same as outlined last year and were followed with beneficial results. It is expected that with more skill and experience the methods of "applicatory instruction" will continue to improve and become a permanent feature.

The following gives an outline of the course for the year:

1. Security and Information.

Map Problems, Terrain Exercises and Maneuvers.

Half Days.

14. Instruction in the preparation of problems. Preparing map problems with approved solutions and reviews.
7. Preparing, directing and discussing terrane exercises.
9. Preparing and observing maneuvers.

RESUME:

Lectures, 0; Recitations, 0; Exercises, 30.

2. Preparation of Lectures on Subjects of Current Military Interest.

RESUME:

(18 half days.)

Lectures, 23; Recitation Periods, 18; Exercises, 30.

30+18=48 half-days.

3. Strategy, Military History and Geography.

37 Lectures on military history.

10 recitations on the Conduct of War, von der Goltz.

1. To bottom page 36 (read introduction.)
2. " " " 56.
3. " " " 76.
4. Paragraph 5, page 97.
5. " 3, " 115.
6. To bottom page 136.
7. To Chapter XI, page 155.
8. To operations on interior lines, page 174.
9. To Chapter XIII, page 196.
10. To end page 117.

RESUME:

Lectures,	37;	Recitations, 10;	Exercises, 0.
	23;	18;	30.
Total	60	28	30

28+30=58 half-days.

4. Field Service Regulations.

11 recitations:

1. Paragraph 1, page 11 to paragraph 27, page 27.
2. To paragraph 84, page 46.
3. " " 125, " 59.
4. " " 185, " 75.
5. " " 234, " 88.
6. " " 280, " 104.
7. " " 354, " 119.
8. " " 396, " 131.
9. " " 487, " 149.
10. " " 592, " 166.
11. " bottom page, 180.

RESUME:

	Lectures,	Recitations,	Exercises,
	0; 60	11; 28	0 30
Total	60	30	30

39+30=69 half-days.

5. Logistics,

6 recitations: Transportation of Troops and Material, by Major Baker.

1. Pages 7-30 inclusive,
2. " 31-56 "
3. " 57-81 "
4. " 92-124 (ommitting 103-118),
5. " 125-148
6. " 149-172

RESUME:

	Lectures	Recitations,	Exercises
	0; 60	6; 30	0 30
Total	60	45	

45+30=75 half-days.

6. Organization.

1 lecture.

1 problem.

RESUME:

	Lectures,	Recitations, etc.,	Exercises,
	1; 60	1; 45	0 30
Total	61	46	30

46+30=76 half-days.

7. Tactics.

6 recitations: Tactical studies, The Battle of Custozza, by von Verdy.

1. To Exercise V. (read introduction),
2. " Exercise X,
3. " Exercise XVII,
4. " Exercise XXII,
5. " Exercise XXVIII,
6. " end.

Staff Duties in The Field, after the Method of Major von Widdern, a study on the conduct of an Army Corps and a Cavalry Division in campaign.

12 recitations:

Lesson	1.	Page	9-30,
"	2.	"	31-50,
"	3.	"	51-70,
"	4.	"	71-90,
"	5.	"	90-110,
"	6.	"	111-130,
"	7.	"	131-150,
"	8.	"	151-170,
"	9.	"	171-190,
"	10.	"	191-209,
"	11.	"	209-230,
"	12.	"	230 to end.

12 recitations and exercises in STRATEGICAL-TACTICAL PROBLEMS, with solutions by Gizycki.

Lesson 1. Outposts, to page 23, Major Barth's translation.

Lesson 2. Outposts and March, to page 49, Major Barth's translation.

Lesson 3. Advance and attack of infantry, to page 69, Major Barth's translation.

Lesson 4. Attack and defense of infantry and artillery to end of Major Barth's translation.

Lesson 5. Conduct of flanking detachment,

" 6. " " " "

" 7. " " " "

" 8. " " " "

" 9. " " " "

" 10. " " " "

" 11. Attack and defense of Infantry.

" 12. " " " " "

2. Tactical Problems, by Count von Moltke.

1. 2. 3. } Exercises in solution of problems involving the movement of large bodies of troops.

3. Tactical Problems Based on American History.

1. 2. 3. } Exercises similar to the above based on the experience of our own country.

RESUME:

Lectures,	Recitations,	Exercises.
66	46	30
66	82	30

82×30=112, half-days.

Map Maneuvers.

1 lecture on War Game.

4 recitations on the "War Game Simplified," by von Verdy.

1. Pages 1 to 25.
2. Pages 26 to 46½.
3. Pages 46½ to 72.
4. Pages 73 to end.

21 exercises in the practical work of the War Game.

RESUME:

Lectures,	Recitations,	Exercises,
66	82	30
67	107	30

107×30=127 half-days.

Terrane Exercises.

12 half-days preparing, observing, reviewing and discussing two terrane exercises of Infantry and Cavalry class.

3 recitations in "A Tactical Ride for Cavalry," by von Verdy.

21 exercises in working out continuous military situations on the open ground without the presence of troops.

RESUME:

Lectures,	Recitations, Etc.,	Exercises,
67	107	30
67	110	63

110+63=173 half-days.

Maneuvers.

11 exercises in the open ground. The duties of the Staff Class will be principally to umpiring and criticising the work of the Infantry and Cavalry Class.

RESUME:

Lectures, 00;	Recitations, Etc., 00;	Exercises, 11
67	110	63
67	110	74

110+74=184 half-days.

1. SECURITY AND INFORMATION

The usefulness of the Staff Class in assisting in the instruction of the Infantry and Cavalry class was abundantly shown last year and again in 1906.

The practical part of this subject was as follows:

6 map problems,
- 1 in cavalry patrolling.
- 1 in infantry patrolling.
- 2 in outposts.
- 2 in advance, flank and rear guard.

3 terrain exercises,
- 1 in infantry patrolling.
- 1 in outposts.
- 1 in advance, flank and rear guards.

3 discussions of same.

6 maneuvers.
- 1 in infantry patrolling.
- 1 in cavalry patrolling.
- 2 in outposts.
- 2 in advance, flank and rear guard.

The work of the Staff Class was as follows:

They prepared the map problems, submitted them to the department and revised them when necessary. They prepared solutions for approval of the department in the same way. They submitted written reviews of the solutions of the Infantry and Cavalry class.

Similarly in the terrain exercises they prepared the problems, directed the exercises, and discussed the same on the ground itself after the papers had been reviewed and returned to the writers.

In the maneuvers they prepared the problems and as assistants to the instructors, observed the conduct of the Infantry and Cavalry class.

In accordance with the experience of last year it was decided to give great attention to approved solutions and free discussions of problems, whether solved indoors or out. Hence a solution to every Map Problem was prepared and passed upon by the department and a mimeographed copy given to each student officer. Although no claim was made that this was the only possible or logical solution, it was announced that it was considered correct. The same plan was pursued in Terrain Exercises, the officers went onto the ground again after their written solutions had been reviewed and returned to them, and then the approved solution was read and opportunity was afforded for a general discussion. The number of officers working on a single problem was so small that this combination of original work with discussion was complete and exhaustive. Every officer had a chance to study the question from every point of view. Under such a scheme it is nearly impossible for a weak and faulty solution to be selected, or for an officer to get a poor mark for good work. This scheme proves most satisfactory both to instructors and to students and removes the department from the charge of "indefiniteness" which has been so long and persistently made.

The details of the scheme of utilizing the two classes in the solutions, reviews and discussions of a large number of problems are quite complicated in order to be effected without loss of time. Memoranda A, C, E, and D show the manner in which this was done. Memoranda A was prepared by me, and C, E, and D by the commandant. They were worked out under the supervision of

Major Barth until he was severely injured during the progress of one of the exercises in October, 1905.

2. PREPARATION OF LECTURES ON SUBJECTS OF CURRENT MILITARY INTEREST

The following assignment was made:

Embarkation and disembarkation	Captain Bates
The military resources of South America	Captain Butner
Night attacks	Captain Conner
The use of railroads in war	Lieut. Disque
Changes in the art of war in the last forty years	Lieut. Dougherty
Military policy and institutions	Captain Ely
The development of field intrenchments	Lieut. Fair
The military geography of Virginia	Lieut. Fitch
The military geography of the Mississippi valley	Lieut. Heintzelman
Office duties in the field	Captain Holbrook
Recruitment and mobilization	Lieut. Joyce
The peace training of armies	Captain King
The tactical and strategical co-operation of the army and navy	Lieut. Kreger
The intelligence department of an army in the field	Lieut. McCoy
Quarters, camps and bivouacs	Lieut. McCullough
Systems of subsistence in the field	Captain Paine
The office duties of the general staff in time of peace	Captain Sayre
The present tendencies of Japanese tactics	Captain Tebbetts
The present tendencies of Russian tactics	Lieut. Trott
The military resources of Canada	Captain Vestal
The present tendencies of French tactics	Lieut. Waldron
The military resources of Mexico and Central America	Captain Woodruff
The present tendencies of German tactics	Lieut. Youngberg

For the preparation and delivery of these lectures the following instructions were prescribed:

Notes on the Preparation of Lectures

The first lecture will be delivered shortly after the first of January and the remainder will follow in the order named unless otherwise directed.

Assignments may be changed by mutual agreement on application to the instructor.

The lectures will be attended by members of both classes.

A portion of the course consists in lectures delivered by the Staff Class. As the success of a lecture depends as much

upon the manner in which the lecture is delivered as upon the subject matter, it is important that officers assigned to this work give it careful consideration.

The length of a single lecture is limited to about 6500 words, which is about the number of words that can be delivered in 45 or fifty minutes. Before a lecture is delivered it will be rehearsed in the lecture room, in the presence of an assistant instructor.

Those who have typewriting machines would do well to write in capitals. This will enable the lecturer to read his manuscript from the desk without picking it up in his hands. The pages should not be fastened together, and, of course, the writing should be on one side of the page. The text should be so well memorized as to be delivered without closely reading every word.

Before delivering a lecture, it is best to read it aloud many times in order to get an idea of the length of time it will take to deliver it with due attention to a proper modulation of the voice. This is best done in the lecture room, in the presence of another who is in a position to criticise the delivery, whether fast or slow, too loud or too low.

Persons who speak in public, even those who are in the habit of speaking a great deal often fall into disagreeable mannerisms of which they are unconscious. Hands in the pockets, slouching over the desk, feet wide apart, and other positions, are some of these common and unattractive defects. The best way to remedy them is to stand before a mirror and deliver the lecture there. In this way one can observe and criticise his own faults of manner better than his best friend can do it. To officers whose duty it is to stand before a body of troops as instructor day after day, it seems hardly necessary to say that much depends on the manner of giving instructions. Many an officer, however, who is a good drill-master, comes into a lecture hall and shows unattractive mannerisms which he would consider ridiculous if seen on a drill ground.

It may be taken for granted that any officer who is able to stand before a squad at drill in a soldierly way can do the same in a lecture room, and that any one who cannot do this fails in one of the most important accomplishments of an officer.

3. STRATEGY, MILITARY HISTORY AND GEOGRAPHY

The list of lectures was the same as last year as nearly as possible but instead of assigning subjects

to each member of the Staff Class the entire course was put in charge of Captain M. F. Steele who gave his entire time and attention to it. Captain Steele lectured generally on Fridays, prepared printed comments which were distributed to the class for study and had a recitation after every set of these lectures. The course has been greatly developed this year. Instead of a half dozen illustrated lectures Captain E. T. Cole has now prepared many hundreds of lantern slides with which every phase of every campaign and battle is fully illustrated. The saving of time by the graphic method has been utilized by Captain Steele in developing the tactical and strategical lessons and will continue to give excellent results.

The list of lectures was as follows:

1. Revolutionary War, Northern Campaign.
2. Revolutionary War, Southern Campaign.
3. The Invasions of Canada.
4. The War of 1812.
5. The Mexican War, Taylor's Campaign.
6. The Mexican War, Scott's Campaign.
7. The Bull Run Campaign of 1861.
8. The Capture of Forts Henry and Donelson.
9. The First Day of the Battle of Shiloh.
10. Jackson's Valley Campaign.
11. The Peninsular Campaign.
12. The Second Bull Run.
13. The Stone River Campaign.
14. The Antietam Campaign.
15. The Fredericksburg Campaign.
16. The Campaign of Chancellorsville.
17. The Gettysburg Campaign, 1st Lecture.
18. The Gettysburg Campaign, 2nd Lecture.
19. The Vicksburg Campaign.
20. The Chickamauga Campaign.
21. The Battles Around Chattanooga.
22. The Battle of the Wilderness.
23. The Battle of Spottsylvania Court House.
24. The Siege of Petersburg.
25. The Atlanta Campaign.
26. The Campaign of Königgrätz.
27. The Campaign of Metz.
28. The Campaign of Sedan.
29. The Siege of Plevna.

30. The Campaign of the Balkans.
31. The South African War.
32. The War between Russia and Japan, 1st Period.
33. The War between Russia and Japan, 2nd Period.

Captain Steele delivered 27 lectures of the course, Major Swift 4, Captain Hartman 2, and Captain Stuart 1.

The Staff Class attended the lectures at the same time as the other classes.

In addition a course of 10 recitations in the "Conduct of War," by von der Goltz, was had.

4. FIELD SERVICE REGULATIONS

Since last year the new Field Service Regulations have been printed, adopted and distributed to the army. In order that the officers of the college might become familiar with the regulations they were introduced in the course. Next year it is proposed to continue this same instruction in order to promote a full discussion of the book.

5. LOGISTICS

Baker's "Transportation of Troops and Materièl" was studied in 6 recitations.

The term Logistics which has appeared in every proposed course of instruction is not a satisfactory one, as it may be considered to include nearly everything in the military profession. Probably the words "Transportation and Supply" would better describe the portions of the course which should be included under this heading.

TACTICS

Map Problems

The study of tactics was developed in the following manner:

First, eighteen recitations covering two text

books were devoted to the study of a complete division of troops through all the phases of the camp, march, and battle. In the first of these studies an actual campaign was taken, in the second a hypothetical campaign. The latter form of study seemed to be the best because a greater variety of situations could be considered than in the other case. For the next year's course it is proposed to take up the last edition of von Verdy's "Infantry Division in Campaign," revised by General von Gossler. This book, which has had such a remarkable influence upon the military thought of this generation, has just been translated for the use of this college by Lieutenant Colonel William Gerlach, U. S. Army, Retired.

Second, a series of problems for original solution, was proposed. They were as follows:

(a) A series of twelve of the Strategical Tactical exercises of Colonel von Gizcyki was proposed. The problems and solutions of the author were printed on separate slips, a map was furnished to each officer, and after he had finished his own solution he was handed the printed slip showing that of the author.

(b) A series of Tactical Problems by Count von Moltke. Three problems taken from numbers 57 and 58 of the series were proposed and solved in the same way as above. An afternoon was given to a discussion of this series and a review of the question by the Assistant Commandant. The problems of this series are among the finest models of deductive reasoning, certainly nothing in military literature can compare with them in showing the proper method of approaching the higher duties of the profession. If time can be found a larger number of problems and a further developement of this subject would be advisable.

(c) A series of problems based on historical cases. This is sufficiently explained by the following list:

NO. MAP.	SITUATION.	PROBLEM.
1. Country from Corinth to Pittsburg Landing.	The Federal and Confederate forces as they were on April 3, 1862.	1. The march table of the Confederate divisions 2. The march orders.
2. Map of the battlefield of Shiloh.	The opposing forces at 6 p. m., April 5, 1862.	1. Order of attack by Army of the Mississippi. 2. Reasons for same.
3. Same.	The opposing forces after 7 a. m. April 6, 1862.	1. What message should have been sent to Wallace at 9 a. m. 2. Orders by latter at 7 a. m. 3. Message by latter to Grant at 11:30 a. m. 4. Discuss action of Grant and Wallace with reference to the movements of latter's command.
4. Map of portions of Pennsylvania and Maryland, 1863.	The situation of Federal army on June 30, 1868 at 11 p. m., after reports from the cavalry had been received.	The orders of the Army of the Potomac for July 1.
5. Same.	The situation of the Federal army on September 13, 1862. At 10 a. m., McClellan was handed a copy of Lee's orders of September 9th showing his plans for the capture of Harper's Ferry.	The orders to be issued by the Army of the Potomac.

One of these problems was reviewed and discussed by Captain Hartman and the balance by the Assistant Commandant. Owing to the time taken up in discussion it was thought best to omit the last problem. This lot of problems was probably of more interest than either of the others. Having the situation as it really occurred, the problem was presented to the class in the same way as to the Military Commander on the field, but the student had also the benefit of all the study that others had put on the case for forty years and was able also to apply the modern method of issuing orders, etc. This character of work is also capable of indefinite extension and the more of it the better, but it requires a great amount of labor by the instructor, *first*, in selecting a proper problem for solution; *second*, in reviewing the work of each man; *third*, in making a general discussion; Unless this is done the benefits of this particular kind of instruction are greatly reduced. Probably the scope of this particular set of problems would make them more appropriate for subsequent study. I would suggest that this college consider no problems involving larger forces than a division.

MAP MANEUVERS

The next step was to work out the problem progressively on the map with blocks to represent the troops.

Last year the class was divided into two sections practicing two exercises at the same time. As this did not give sufficient occupation to the participants it was decided to proceed this year with a greater number of exercises.

The course in map maneuvers began on February 14th with a lecture on the history, development and

present use of the map maneuver, which is also called Kriegsspiel or war game.

This was followed by short lectures from time to time on points of interest in the exercise, principally on "Battle Losses," "Rules for Hostile Contact, etc." These were then followed by four recitations on the "War Game Simplified," by Verdy du Vernois.

The plan consisted in having the class study and recite upon the model exercise in the text book above referred to in order that they might get familiar with the proper methods of procedure.

The next thing was to divide the class into a number of sections each of proper size to practice the exercise and assign the same problem to all. This resulted in three sections and consequently three exercises were conducted at the same time.

A roster was kept so as to equalize duty as umpire, and commander of each separate arm of the service.

Each problem was made with a definite object in view, either to show a tactical or strategical question, a point in logistics or estimation of the ground.

The following problems were solved:

No. 1. The War Game Map.	Contact of opposing forces—one having superior cavalry and the other having superior infantry.
No. 2. Map of Bernard's Mill and vicinity.	Defense of bridges. Small force of infantry in proportion of 1 to 2.
No. 3. Map of Constantine and vicinity.	Use of cavalry as a delaying force against infantry.
No. 4. Map of the country between Tilly and Vaul.	Cavalry in defense of a defile against cavalry.
No. 5. Map of country about Longuyon.	Action of a delaying force of all arms.
No. 6. Same.	Cavalry convoying artillery is attacked by cavalry.
No. 7. Map of the battlefield of Shiloh.	Contact of equal forces of infantry and artillery in a wooded terrain.

No. 8. Map of the battle-field of Gettysburg	Troops on the march are attacked on the flank.
No. 9. Same.	Cavalry as a delaying force against infantry.
No. 10. Map of Fort Leavenworth and vicinity.	Defense of river line.
No. 11. Map of Manassas maneuver ground.	Cavalry as a screening force.
No. 12. Map of the battle of Borny.	Action of advance guard in delaying a retreat.
No. 13. Map of battle of Gravelotte.	Same.
No. 14. Map of Longuyon.	Same.
No. 15. Map of Verny.	Occupation of a defensive position.

Some of the exercises took several days so that there were 21 map maneuvers in all occupying the same number of half-days.

The result justified all that was expected and hoped for:

First. That any well instructed officer is competent to exercise the duty of umpire.

Second. That the "War Game" can be taught to a class of any size at the same time.

It is noted that this is the most valuable instruction for officers in preparation for the duties of umpires at peace maneuvers. Having this in view all of the exercises were conducted in the exact way that it was thought that maneuvers should be conducted, only differing in the fact that the troops had to be shown by blocks and the ground by the map.

STAFF RIDES

This year the Staff Ride in its various forms received a great development over last year.

The Staff Ride is a valuable step in the progressive course of an officer's education and consists in a party of officers riding over the country and making

military dispositions for imaginary troops on real ground. The field of operations of such an exercise may vary from a forty acre lot to a sovereign state, and the size of the command from a patrol to a great army.

Terrain Exercises and Tactical Rides

In these exercises the Staff Class has been employed, as last year, *first* in the instruction of the Infantry and Cavalry Class, and *second* in independent work. In the former kind of instruction, to which it has been found convenient to give the term "Terrain Rides", the class was employed in the preparation, solution, conduct and discussion of a number of exercises of the Infantry and Cavalry class in Minor Tactics, in the same way as previously explained for Security and Information. The time assigned for it was the early spring and it was conducted by the Instructor in Military Art and his assistants.

In independent work last year the entire class, owing to lack of instructors, was used in a single exercise. The difficulties encountered were set forth in my report of last year, and were successfully avoided this year. As it was discovered that some confusion existed in the minds of the officers as to the plan and limitations of this character of an exercise it was thought best to translate for the use of the class "The Tactical Ride" by von Verdy, which has long been a model of its kind. As it had been found impracticable to occupy so large a number of officers in a single exercise, the class was divided into three sections in the same way as Kriegsspiel and the arrangement proved again satisfactory.

The Assistant Commandant took charge of a section whose field of operation was the country north and west of Fort Leavenworth; the instructor

in Military Art took charge of a section working at the east of the Missouri River; Captain J. D. L. Hartman took the country south and south-west of the post. It was expected that General Bell would take one of these exercises but it was prevented by his going to Washington.

One exercise occupied three days and after being completed the sections alternated to other instructors until each section had completed an exercise under each,—or three in all.

The authorities attempt to make a distinction between a Tactical Ride and a Staff Ride although the principles of both are alike. On account of the limited terrain and the influence of the book, some prominence may have been given to tactical features but this was not a disadvantage. Each instructor, however, introduced different features which added to its value on the whole.

To complete the logical course of events a veritable Staff Ride was necessary.

Staff Ride in Georgia

The scheme of a Staff Ride in Georgia, which had long been advocated and almost abandoned, became a reality in 1906.

The idea of such an excursion is as follows:

The ordinary Staff Ride is based on a hypothetical military situation; the orders are made, messages sent, dispositions worked out in the same way as if the imaginary situation was real. In a historical case, however, we do not invent a situation, but take an actual case and endeavor to put ourselves into the state of mind of the person who had these identical problems to solve in campaign.

Ever since Napoleon gave his famous advice to those who would learn the military profession, tell-

ing them to study deeply the campaigns of the great masters, it has been plain to many that the secrets of the art of war are to be found in the pages of history.

This study may be given by lectures and map demonstration, supplemented by reading, to gain insight into the broader principles of tactics and strategy, showing how campaigns and battles have been lost and won, but the details which led up to these great events are likely to be forever a closed page to the student. Knowledge of detail is of infinitely more value to the officer than the more abstruse subjects and it is harder to obtain. It is therefore recommended that the study of military history should be supplemented by the detailed study of at least one campaign.

Military history unfortunately is not often written for students of the art of war; the value of details to future generations of soldiers is not often foreseen in the days when history is written; the actors in great events quickly forget the small matters and only remember the great ones. To learn the conduct of a campaign in its details we must study the campaign itself, and if we cannot do this on the ground in actual war, we can go there afterwards and supply the situation from the published accounts. In this way we can supplement our studies of history and supply the practical element. We can also make the conditions of a former campaign conform to those that we might expect under modern conditions. This combination of study and practice can be pursued nowhere so well as on the ground itself.

The campaign of Sherman and Johnston in Georgia was selected as a basis for study for several reasons:

1. The armies were in contact for four months.

2. The field of operation covered every variety of ground.

3. The literature is voluminous and accessible; the maps accurate and inexpensive.

4. The campaign may serve as a model for an army marching on several roads, for the selection of defensive positions, for the withdrawal of a large army without disaster, for the conduct of wide turning movements, for extended operations far from the base of supplies, for the defense of a line of communications, for the rapid construction of defensive works, together with a thousand details of the march camp, bivouac, attack, defense, protection and supply.

In 1906 a number of the members of the Staff Class expressed a desire to make the trip without mileage; the matter was voluntary, and fourteen signified their desire to participate. Captain Conner and Lieutenant Youngberg were obliged to give it up, on account of orders calling them to other fields.

The party consisted of the following:

Major Eben Swift, 12th Cavalry, Assistant Commandant, and the following named members of the Staff Class of 1906.

1. Captain Farrand Sayre, 8th Cavalry.
2. Captain H. E. Ely, 26th Infantry,
3. Captain S. C. Vestal, Artillery Corps.
4. Captain F. W. Butner, Artillery Corps.
5. Captain Campbell King, 1st Infantry.
6. Captain J. A. Woodruff, Corps of Engineers.
7. Captain Stuart Heintzelman, 6th Cavalry.
8. Lieutenant C. A. Trott, 5th Infantry.
9. Lieutenant R. S. Fitch, 1st Cavalry.
10. Lieutenant E. A. Kreger, 28th Infantry.
11. Lieutenant B. P. Disque, 3rd Cavalry.
12. Lieutenant K. A. Joyce, 6th Cavalry.

Captain E. R. Stuart of the Corps of Engineers, an instructor at the College, who had been on leave of absence in Tennesee, joined the party at Fort Oglethorpe and continued with it as far as Kenesaw.

The party left Fort Leavenworth at 9:20 p. m., July 3, and arrived at Lytle, Georgia, about two miles from Fort Oglethorpe, about 11 a. m. on the 5th. A detachment of twenty-four men of the 12th Cavalry under the command of R. B. Campbell met the party at the station, with horses, and served as escort. Two escort wagons were provided and one wall tent for two officers. The party messed with the detachment, each member taking his own outfit with him.

The following itinerary was observed:

July 5. March to Buzzard's Roost Gap.
July 6. Camp at Buzzard's Roost Gap.
July 7. March to Resaca.
July 8. Camp at Resaca.
July 9. March to Kingston.
July 10. March to Dallas.
July 11. Camp at Dallas.
July 12. March to Kenesaw Station.
July 13. Camp at Kenesaw Station.
July 14. March to Decatur.
July 15. Camp at Decatur.
July 16. March to Atlanta.

Each member of the party provided himself at his own expense with a set of the maps of the Atlanta Campaign, which are published in plates 57, 58, 59, and 60 of the Atlas of the Rebellion Records.

These maps are the best I have ever seen in this country. As the country has not changed much since the Civil War, they could be followed with ease. The accuracy with which the hundreds of miles of intrenchments and innumerable country roads are shown is quite remarkable.

A small pamphlet giving the organization of the Northern and Confederate Armies in the Georgia campaign of 1864 was printed at the college press and a copy furnished each officer.

To insure a complete study of the campaign the portion between May 8 and July 22, 1864, inclusive, was taken and divided into four epochs. Each was then assigned for special study to three officers, two for the Federal side and one for the Confederate, as follows:

1st Epoch. Chattanooga to Resaca.
Federal movements: Captain Ely, Lieutenant Disque.
Confederate movements: Lieutenant Fitch.

2d Epoch. Resaca to the Etowah.
Federal movements: Captain Heintzelman, Lieutenant Joyce.
Confederate movements: Captain Butner.

3d Epoch. The Etowah to Kenesaw, inclusive.
Federal movements: Captain Sayre, Lieutenant Kreger.
Confederate movements: Lieutenant Trott.

4th Epoch. Kenesaw to Atlanta, to include the Battle of Atlanta.
Federal movements: Captain Woodruff, Captain Vestal.
Confederate movements: Captain King.

Captain S. C. Vestal of the Artillery Corps designed a box in the form of a shallow dress suit case, in which the map of the epoch under consideration would lie flat. With colored pins the position of the troops was indicated on the map from day to day at discussions in which the officers assigned to the epoch explained the course of events. As arranged by Captain Vestal this was a most useful auxiliary to the study.

Although this campaign is a subject of professional interest to every officer, its value is not of

transcendent importance unless applied to conditions which may occur in the experience of the officer himself. It was here that the professional value of the journey was to be gotten.

Having the military situations of the campaign by the hundred, every order, every controverted point, had probably been studied by at least one of the officers assigned to the task. The application to modern conditions at once suggested itself. Officers could imagine themselves in a modern campaign conducted under the same conditions as in this historical case. Knowing the events as they actually occurred, the mistakes and the difficulties where they existed, an opportunity was given to the Staff Class to use the knowledge of subjects on which they had just completed a two years' course.

The itinerary was so arranged that one whole day could be given to each point of special importance. The distance by railroad from Fort Oglethorpe to Atlanta being about 125 miles, about double that distance was ridden and walked by the individual members of the party in examining the country. The entire trip occupied twelve days.

The original work performed was as follows:

CONDITIONS.	REQUIRED:	SOLVED BY
May 11, 1864, General Sherman decides to march through Snake Creek Gap on Resaca.	The order for the march.	Capt. Ely. Lieut. Fitch. Lieut. Disque.
May 13, 1864, General Johnston retreats from Resaca and takes up a defensive position.	The order for retreat and defense of the river line.	Capt. Heintzelman. Capt. Butner.
May 13, 1864, General Sherman decides to cross the Oostenaula.	The order for forcing the passage of a river.	Lieut. Joyce.

June, 1864, The opposing armies were in and about Marietta. Sherman decides to attack.	The orders for an enveloping movement by the right flank.	Capt. Sayre. Lieut. Kreger.
June 22, 1864, General Johnston decides to withdraw to Smyrna Camp Ground.	The orders for retreat and taking up a defensive position.	Lieut. Trott.
July 21, 1864, General Hood decides to meet McPherson's turning movement in same way.	Issue the orders.	Capt. Vestal. Capt. Woodruff Capt. King.

A discussion was planned, usually at the close of the day, at which the officers specially assigned to investigate epochs of the campaign gave their observations and comments. The troops were moved on the map to correspond. Original solutions of various problems were then read and discussed by the assembled class.

It will be seen that this original work of the class was only such as would fall to the lot of the staff officer for the highest commander. This was done deliberately, as a first exercise, because experience shows that it is easier in military matters to decrease the size of your task than increase it. The conduct of the operations of smaller commands would be more appropriate, and the study would complete in a satisfactory way the previous course of two years. I therefore recommend that such work as the above be confined to a special class possessing a more advanced course than that at Fort Leavenworth. Although the solutions proposed were of a high order of merit I consider that it would be more practical to limit the study to the operations of a smaller command. For another Staff Ride from Fort Leavenworth I recommend the daily study of a

division in the same campaign. Let its halts, bivouacs, marches, orders, supply, protection, battles, be studied in the same way as is developed in the Infantry Division by von Verdy, now about to be introduced into the course. This would require that the ground be covered with more deliberation than in our trip. I suggest Cox's Division of the Army of the Ohio, because its history has been more completely written than any other and it may well be accepted as a fair sample of all.

The Department of Engineering, if accompanying the excursion, would find abundant field for work in the selection of defensive positions, etc., along the line of operations.

Very respectfully,

EBEN SWIFT,

Major, 12th Cavalry,

Assistant Commandant.

[APPENDIX B.]

STAFF COLLEGE

DEPARTMENT OF MILITARY ART

Fort Leavenworth, Kansas, August 31, 1906.

The Secretary,

Staff College.

Sir:

I have the honor to submit the following report of the work of this department for the year ending August 31, 1906.

I was transferred to this department from the department of law on January 3 of this year, succeeding Major Charles H. Barth, 12th Infantry, who had been seriously injured while conducting one of the field exercises.

Owing to the large amount of work in this department and the inadequate number of assistant instructors, Major Eben Swift, 12th Cavalry, Assistant Commandant, exercised general supervision until he became acting Commandant in the month of April. He conducted the exercises in map maneuvers (war-game), one of the regular staff rides, and in July the staff ride of the class in Georgia. He will probably make a separate report of this work.

ALLOTMENT OF TIME.

Of the 410 half-days comprising the school year (staff ride in July not included) this department was allotted 184 half-days.

TEXT-BOOKS.

Conduct of War, von der Goltz.

Field Service Regulations.
Baker's Transportation of Troops and Material.
The Battle of Custozza, von Verdy.
Staff Duties in the Field, after the German of Major von Widdern.
Strategical-Tactical Problems, Gizycki (Barth's trans.)
Tactical Problems, Count von Moltke.
Von Verdy's War-Game Simplified.
Von Verdy s A Tactical Ride for Cavalry.

SCOPE AND METHOD OF INSTRUCTION.

The scope and method of instruction for the past year will be found outlined in the report of Major Eben Swift, 12th Cavalry, for the year ending August 31, 1905 (see Annual Report of the Commandant for that year).

The *scope* of instruction, as in the Infantry and Cavalry School, is dependent upon the time allotted this department and upon the previous preparation the student officers may have had. As these officers are graduates of the Infantry and Cavalry School, their course of instruction, while conforming to the general scheme adopted for the education of army officers, should be built, as it were, upon the course of instruction in the Infantry and Cavalry School. For instance, the course in tactics for the Infantry and Cavalry School begins with the smaller units and includes the operations of detached brigades, while in the Staff College tactical operations are extended to include the division and army corps.

With these ideas in mind, and in order to have, as far as possible, the same *method* of instruction in *both* schools, I have, with the consent of the Commandant, somewhat altered the course, which, for the coming year, will be as follows:

1. Organization.
   Instruction by lectures and recitations; research and written exercises on the organization of the army of the United States and of foreign armies.

2. Security and Information.
   Instruction by practice in the preparation, criticism and umpiring of practical exercises of the Infantry and Cavalry School.
3. Tactics.
   a. (1) Instruction by lectures and recitations on the development and tendencies of modern tactics.
      (2) Tactical studies involving the larger units.
   b. (1) Map problems involving the larger units.
      (2) Map maneuvers (war-game) and practice in umpiring the same.
   c. Practical instruction in the application of military problems to the ground itself: staff rides and practice in conducting same.
   d. Practice in the preparation, criticism, and umpiring of practical exercises of the Infantry and Cavalry School.
   e. Practical instruction in the duties of umpires at field maneuvers.
4. Conduct of War.
   Military policies; duties of the General Staff; mobilization; logistics; strategy; military history and geography.
   Instruction by lectures, discussions, original research and practical exercises.
5. Strategical and tactical co-operation of the Army and Navy.
   Lectures on modern navies and naval warfare, with special reference to co-operation with an army. These lectures to be given, when practicable, by an officer of the United States Navy.
6. Lectures and discussions on subjects of current military interest.
7. Practical campaign studies.
   If practicable, a visit to a battle-field and study of terrain in connection with actual historical events.

All instruction in the department to be in conformity with principles laid down in official publications of the War Department and authorized text-books.

An examination of the above course will disclose the fact that it is divided, mainly, into the subjects of *tactics* (which may be considered as including security and information), and the *conduct of war.*

True, the latter term, in a broad sense, includes all the subjects listed above, but *tactics* occupies so prominent a place in the course of instruction that it was found advisable to make the separation indicated.

As to the *method* of instruction the remarks in my report on that subject for the Infantry and Cavalry School are fully as applicable to the College and may be considered as repeated here. The applicative system will be used and wherever possible the instruction will consist of *studies*, *map problems* (including the war-game), *terrain exercises* and *maneuvers*. The "staff rides" in the College curriculum are similar to the terrain exercises of the Infantry and Cavalry School, but more extended and applicable to larger commands.

Mention was made in my Infantry and Cavalry School report of the use of members of the Staff Class as assistant instructors, and of the value of that feature of instruction to both classes. Without it many of the advantages of the applicative system would be curtailed, as it would be impossible for the regular instructors to do the work.

As shown in the above course of instruction, members of the Staff Class are employed in the preparation, criticism and umpiring of the practical exercises of the Infantry and Cavalry School. This means that they are not only constantly studying *military situations*, but in reviewing and criticising the work of others tactical principles are being constantly and indelibly stamped upon their minds, and by umpiring they are learning how to "size up" situations in the field.

The course in "strategy and military geography and history" during the past year was covered by requiring student officers of the Staff College to attend lectures in the Infantry and Cavalry School. As

these lectures will be practically the same for the coming year it was necessary to devise something new and more advanced for the Staff College. This has been accomplished by including this subject under the general heading of the "conduct of war," and arranging the latter so that strategy, etc., will constitute one of its features.

The most valuable part of the new course in the "conduct of war", will be found in the requirement of *original research* on the part of student officers. For the coming year, and as a beginning for future development, it will be arranged and conducted as follows:

There will be 5 preliminary recitations followed by 13 lectures upon the following topics:

1. The Conduct of War—the subject in general and strategy in particular.
2. Military policies.
3. Duties of the General Staff in preparation for war.
4. Recruitment; mobilization; strategic deployment; concentration.
5. Logistics.
6. Character of campaign; the offensive; the defensive.
7. Military Geography: its influence upon military operations.
8. The theater of war: base of operations; lines of operations; communications.
9. Offensive operations.
10. Defensive operations.
11. The strategic use of cavalry.
12. The co-operation of land and sea forces.
13. The influence of modern inventions upon strategic operations.

The first lecture will be delivered by the assistant instructor. Each of the others will be prepared by a committee composed of two members of the class. Copies will then be furnished two other members whose duty it shall be to prepare themselves to discuss the lecture after its delivery in class session.

The topic will then be open for general discussions in which the instructors will join.

The practical exercises will consist of the preparation of written plans of campaign, projects for mobilization, etc., in case of war, and the discussion thereof in class session.

An effort has been made to arrange the topics of the lectures in logical sequence, and it is hoped that by careful supervision they may, when taken together, form a connected whole and present a satisfactory outline of this much of the "conduct of war."

For the school year 1906-7 the course of instruction in detail will be as follows:

Organization:	12 recitations. F. S. R., this year only with object of revision.
Security and Information:	24 half-days practical work with the Infantry and Cavalry Class.
Tactics:	17 recitations in von Verdy's Studies in the Leading of Troops (Swift's trans.); 2 recitations and 12 map problems in Gizycki; 20 map maneuvers (war-game); 8 tactical problems from von Moltke and military history; 40 half-days in reviewing map problems (arms combined) of the Infantry and Cavalry Class; 16 half-day staff rides; 10 half-day maneuvers.
Conduct of War:	5 recitations (von der Goltz on the Conduct of War.—Dickman's translation) and 24 half-days for preparation and discussion of lectures.
Strategical and Tactical co-operation of the Army and Navy:	3 lectures.

Total 193 half-days*

RECOMMENDATIONS.

1. That recommendations 3, 4, 5 and 6 of my

*From which 10 lecture hours are to be deducted for the department of engineering.

report on the Infantry and Cavalry School be considered as applying to the Staff College.

2. For conducting terrain exercises and staff rides during the coming year it is proposed to camp for a week with both classes in the Platte River country east of the Missouri. Much time will thus be saved that is now lost in going to and returning from these exercises.

During the past school year I personally conducted in that section of the country a staff ride that proved eminently satisfactory and highly instructive to all engaged therein. It covered the advance of an army into enemy territory, advance guards, formation of outposts, preparing a defensive position, and an attack and defense of the latter. During the battle the student officers occupied the positions their commands would occupy had the combat been real instead of simulated, and "situations" were conveyed to them from time to time by the directors of the ride in accordance with previously arranged plans, or as circumstances seemed to require.

The line was several miles long, communication between the posts and headquarters being maintained by the Signal School officers, who, under their instructor, Major Squier, volunteered for the work.

So very valuable and instructive was this particular feature of the exercise that it is recommended that arrangements be made for a like coöperation between the several schools during the coming year.

In closing, I wish to take this opportunity to express my high appreciation of the assistance rendered by Captain Hartman in this department while under my supervision.

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

[APPENDIX C.]

STAFF COLLEGE

DEPARTMENT OF ENGINEERING

Fort Leavenworth, Kansas, August 31, 1906.

The Secretary,
Staff College,
Fort Leavenworth, Kansas.

Sir:

I have the honor to submit the following report of the work of this department for the college year ending this date:

The total time allotted the department was 105 half-days distributed as follows: September 12; October 3; November 29; April 18; May 21; June 22; and in addition there were ten lectures on fortification during January and February.

The course embraced stresses and strains in engineering structures of the simpler sorts, surveying, provisional and permanent fortification, topographical sketching, and practical work in location of fortifications and building of bridges.

The course in stresses and strains was designed to give the student some idea of the strength of the parts necessary in the simpler kinds of bridges, such as king post and queen post trusses, and the simpler frames which any officer might at times be required to build. The instruction was by lectures and computations, the data for the latter being as practical

as possible, and all work tended to give practice in using the handbooks of the Engineer Corps of the Army.

In surveying the class was divided into parties of four, in each of which the officers took their turn at performing the various duties. The results were plotted on a scale of six inches to the mile and formed part of the progressive map upon which former classes had done their share, the areas mapped by the successive classes being contiguous. This year's experience has showed that while the theory of a progressive map is very good, the execution as the distance from the school increases has many disadvantages. The work this year was done at as great a distance as was practicable without placing the men in camp. To do this is not considered advisable as the work is for instruction, and the formation of a map of the region surrounding the post must necessarily be incidental merely, and cannot be allowed to interfere with proper methods of instruction or with the students' or instructors' other duties at the college. It is recommended that, if a map of the surrounding region is needed; some plan be adopted by which the result can be promptly attained, instead of trying to secure it by a method which will take many years and greatly interfere with proper instruction.

The instruction in permanent and provisional fortification consisted of lectures, ten in number upon this subject. The practical work consisted of locating and laying out provisional and field fortifications both upon the map and upon the ground and discussing the plans submitted.

The course in topographical sketching embraced the work of making and combining individual sketches and the management and supervision of

sketchers. The different sketches made were position sketches of considerable extent; road sketches to cover a day's march over all the roads that an army would be likely to utilize in a forward movement; rapid sketches, the sketches being required to cover six miles per hour; and a sketch which the sketcher was required to make from some observation point by estimating distances, the theory being that he had reached some outlook point upon which he could not move about without attracting the enemy's fire. All work was made to approach service conditions except in the one particular of beginning work at daylight. The fact was impressed on the students that a map to be of service must be quickly made, immediately reproduced, and at once distributed, and in one case the map was completed and copies printed in the field in one day. The work produced while marching at a rate of six miles an hour was most gratifying to both student officers and instructors.

The only instruction in astronomy was such as was needed to determine the azimuth of a line. Astronomical work of precision would never be intrusted to an unpracticed officer, and owing to the limited time available for the course in engineering it was considered advisable to confine the instruction to such branches of engineering as an officer would be most likely to need in service.

The remarks upon the result of the year's work in topographic sketching which were made in the report of this department for the Infantry and Cavalry School apply to a large degree to the Staff College work also, but it has seemed unnecessary to practically repeat them here.

Captain E. R. Stuart, Corps of Engineers, assistant instructor, succeeded in keeping up the interest

of the student officers throughout the course, to a high degree, and I desire to commend him for the thoroughly practical and highly efficient manner in which every part and all of his work has been done.

Very respectfully,

LANSING H. BEACH,
Major, Corps of Engineers,
Instructor.

(APPENDIX D.)

STAFF COLLEGE

DEPARTMENT OF LAW

Fort Leavenworth, Kansas, August 31, 1906.

The Secretary,
Staff College,
Fort Leavenworth, Kansas.

Sir:

I have the honor to submit the following report of the work of this department for the year ending August 31, 1906:

ALLOTMENT OF TIME

During the school year from September 1, 1905, to June 30, 1906, the department was allotted sixty half days and thirty lecture hours. Of this time twenty-eight half days were devoted to constitutional law and constitutional law cases, twenty-one half days were devoted to military government and martial law and cases bearing upon the subject, seven half days and thirty lecture hours were devoted to the preparation of graduating theses, and four half days devoted to the solution and discussion of two problems in law.

TEXT-BOOKS

Black's Constitutional Law.
Birkhimer's Military Government and Martial Law.

LIST OF LESSONS IN CONSTITUTIONAL LAW

1. Page 1 to bottom page 26.
2. " " " 50 and Articles V., VI.. VII., Const. and 11th Amend.
3. " " " 71.
4. " " " 88.

5.	" par. 74,	" 106 and Article II., Const. inc. 12th Amend.
6.	" bottom	" 122.
7.	" "	" 134 and Article III., Const.
8.	" par. 93,	" 153.
9.	" bottom	" 166.
10.	" "	" 185 and Article I., Const. except Sec. 9 and 10.
11.	" "Naturalization," p. 207.	
12.	" "Government of Ceded Districts, p. 225.	
13.	" bottom page 243 and Sec. 9 & 10, Article I., Const.	
14.	" "	" 266 and Article IV., Const.
15.	" "	" 354. Omit Chaps. XI., XII. and XIII.
16.	" "	" 374.
17.	" "	" 396.
18.	" par. 178,	" 413.
19.	" bottom	" 442. Omit from beginning par. 185 to end of lesson.
20.	" par. 205,	" 464
21.	" par. 213,	" 485 First ten and last three
22.	" Gen. Warrants p. 503	Amend., Const.
23.	" to bottom	" 521
24.	" "	" 539.
25.	To bottom page 564.	
26.	" par. 256,	" 584.
27.	" bottom	" 603.
28.	" end of text.	Omit par. 282, 283, 284, 287, 288, 289.

LIST OF CASES STUDIED IN CONNECTION WITH CONSTITUTIONAL LAW.

Marbury vs. Madison	1 Cranch 137
Chisholm vs Georgia	2 Dall. 419
Presser vs. Illinois	116 U. S. 252
Fletcher vs. Peck	6 Cranch 87
Luther vs. Borden	7 How. 1
Phillip vs. Payne	92 U. S. 130
Runkle vs. U. S.	122 U. S. 543
Blake vs. U. S.	103 U. S. 227
The Cherokee Tobacco	11 Wall 616
Haver vs. Yaker	9 Wall 32
McCullough vs. Maryland	4 Wheat 316
In re Ross	140 U. S. 453
Dynes vs. Hoover	20 How. 65
Veazie Bank vs. Fenno	8 Wall 533
Gibbons vs. Ogden	9 Wheat. 1
Leisy vs. Hardin	135 U. S. 100
In re Grimley	137 U. S. 147
Pembina C. S. M. & M. Co. vs. Pa.	125 U. S. 181.
Kentucky vs. Dennison	24 How. 66
Boyd vs. Nebraska	143 U. S. 135
Fort Leavenworth R. R. Co. vs Lowe	114 U. S. 525
Mugler vs. Kansas	123 U. S. 623
In re Neagle	135 U. S. 1
Munn vs. Illinois	94 U. S. 113

R. R. Co. vs. Husen	95 U, S. 465
Crandall vs. Nevada	6 Wall 35
Loan Association vs. Topeka	20 Wall 655
Kohl vs. United States	91 U. S. 367
United States vs. Chicago	7 How. 185
Eaton vs. R. R. Co.	51 N. H. 504
Chicago vs. Taylor	125 U. S. 161
Mormon Church vs. United States	136 U.S. 1
United States vs. Cruikshank	92 U. S. 542
Strauder vs. West Virginia	100 U. S. 303
Slaughter-house Cases	16 Wall 36
Arrowsmith vs. Harmoning	118 U. S. 194
Campbell vs. Holt	115 U. S. 620
Boyd vs. United States	116 U. S. 616
Callan vs. Wilson	127 U. S. 540
In re Look Tin Sin	21 Fed. 906
Minor vs. Happersett	21 Wall 162
Cummings vs. Missouri	4 Wall 277

List of lessons in Military Government and Martial Law including instructions for the government of armies of the United States in time of war, 21 recitations:

1. Introduction and par. 667 to 679 of "Instructions," appendix VI.
2. To bottom page 69. Omit "Note," pp. 68, 69.
3. " " " 100. Omit par. 55 and 56.
4. " " " 131. Omit par. 109, 110, and 111.
5. " sec. 142 " 153.
6. " bottom " 174.
7. " sec. 194, page 196 and sec. II, "Instructions."
8. " " 225, " 220.
9. " bottom " 243.
10. " " " 267.
11. " " " 310 and sec. IV and V, "Instructions;" Omit par. 278 to 284 incl.
12. " sec. 325, " 341. Omit par. 322, 323 and 324.
13. " bottom " 369. Omit par. 327.
14. " " " 391.
15. " " " 437. Omit chap. XVIII.
16. " " " 456 and sec. IV, "Instructions."
17. " " " 480.
18. " " " 507.
19. " sec. 617, " 534.
20. " bottom " 559.
21. " " " 580.

LIST OF CASES STUDIED IN CONNECTION WITH MILITARY GOVERNMENT AND MARTIAL LAW.

Mitchell vs. Harmony	13 How. 115
Coleman vs. Teun	97 U. S. 509
Dow vs. Johnson	100 U. S. 168
The Prize Cases	2 Black 666
Mitchell vs. Clark	110 U. S. 633
Miller vs. United States	11 Wall 308
Williams vs. Bruffy	96 U. S. 176
Mrs. Alexander Cotton	2 Wall.
Ford vs. Surget	97 U. S. 594
Ex parte Milligan	4 Wall 141
Texas vs. White	7 Wall 700
Luther vs. Borden	7 How. 1
Johnson vs. Jones	44 Ill. Reports 142
Commonwealth vs. Shortall	55 Vol. Atlc. Rpts. 952

PROBLEMS

Problem No. 1.

The following letter was recently received by the Commanding Officer at Fort Leavenworth:

DEPARTMENT OF JUSTICE
UNITED STATES MARSHAL'S OFFICE
Western District of Missouri

ST. JOSEPH, MO., *Oct. 30, 1905.*

Commandant,
Fort Leavenworth—

SIR—Would an officer be justified in shooting a deserter in order to effect his capture? I captured C. C. Crane, deserter, and took him to your post last April. He deserted last August and I almost captured him last Friday night, 8 miles northeast of Easton, Mo. It would have been necessary to have shot him in order to capture him. He is sure to resist.

What are my rights, or rather, the law in such emergencies?

Very truly,
(Signed) C. H. HASKELL,
U. S. Dep. Marshal, St. Joseph, Mo.

The word "officer" refers to civil officers.

1. The Deputy Marshal's request for information really involves two conditions,—(a) forcible resistance to arrest; (b) when there is no forcible resistance but merely an attempt to evade arrest by running away.

What answer would you make to the Marshal's letter?

2. A detachment of soldiers is sent out to arrest Crane; what force may it lawfully employ under the two conditions mentioned above?

3. Crane while being pursued by the detachment takes refuge in a private house; can you as commander of the de-

tachment forcibly enter the house and make the arrest against the will of the owner?

4. Crane is supposed to be concealed in a private house but you are not certain; as commander of a detachment sent out to capture him, what steps would you take to have the house searched?

5. Crane is known to be a deserter; what would be the duty of the following persons should they encounter and recognize him, but have no positive orders to arrest him?

(a) A private soldier.

(b) A non-commissioned officer.

(c) An officer.

6. You are alone and unarmed and learn that Crane is concealed in a certain public saloon of Easton, Mo., and being among his friends you cannot personally effect his capture; what steps would you take?

Problem No. 2.

MILITARY RESERVATIONS

The post of Fort Leavenworth, Kansas, was established in 1827. By executive order dated October 10, 1857, it was reserved and set apart for military purposes, but when Kansas was admitted as a state in 1861 the United States failed to retain jurisdiction over this reservation. By act of the Kansas legislature approved February 25, 1875, jurisdiction over that part lying in the state of Kansas was ceded to the United States in the following terms:

"Section 1. That exclusive jurisdiction be and the same is hereby ceded to the United States over and within all territory owned by the United States, and included within the limits of the United States military reservation known as the Fort Leavenworth reservation, in said state, saving however, to the said state the right to serve civil or criminal process within said reservation, in suits or prosecutions for or on account of rights acquired, obligations incurred, or crimes committed in said state, but outside of said session or reservation; and saving further to said state the right to tax railroad, bridge and other corporations, their franchises and property on said reservation."

1. (a) Are the reservations by the state of Kansas of the right to serve civil and criminal process and to tax railroads and other corporations, inconsistent with exclusive jurisdiction of the United States as understood in par. 17, sec. 8, Art. 1 of the Constitution, and if so to what extent?

(b) Had the Reservation been purchased by the United States with the consent of the state legislature, would the saving clause "to tax railroads", etc., have been binding? Why?

(c) Does the saving clause "to serve civil process for rights acquired, etc., outside the Reservation," prevent the state from serving process on the Reservation for a *tort* or *breach of contract* committed thereon? Why?

2. December 25, 1874, a soldier shot and killed a comrade on the Reservation; the homicide was manslaughter; in what courts and under what laws could the criminal have been tried?

3. Had this homicide occurred a year later, in what courts and under what laws could the criminal have been tried?

4. A civilian employee residing on this Reservation was the owner of a vicious dog; he was aware that the animal would sometimes attack people, nevertheless he permitted the dog to run at large, and the latter attacked and killed a child:

(a) Can the owner be punished criminally; if so in what courts, and by what laws will his punishment be measured?

(b) Had a soldier been the owner of the dog, where could he have been tried?

(c) In general what is the law for punishment of offenses committed on a military reservation (exclusive) where no penalty has been prescribed by Congress?

5. A citizen of Leavenworth breaks or opens the fence inclosing the Reservation along Metropolitan Avenue and drives his cattle upon the Reservation for grazing; can he be punished criminally; if so in what courts and what is the limit of his punishment?

6. Two residents of Leavenworth are driving along Grant Avenue on the Reservation; one, through carelessness, collides with and injures the vehicle of the other:

(a) Is civil suit maintainable for damages; if so where?

(b) The driver whose vehicle is injured assaults and severely injures the other; have the Kansas courts jurisdiction of this crime?

7. A soldier stationed at Fort Leavenworth dies; among his effects is found a document purporting to be his last will and testament; it is signed by the deceased but there are no subscribing witnesses; in the testament he bequeathed, among other things, one half of $2000, which he has in bank in St. Louis, to his wife who lives on the Reservation, and the other half to his mother who lives in Ohio; if you were his company commander how would you proceed?

Generally, aside from military law, what municipal law is in force on a military reservation?

8. The state of Kansas has the right to serve civil and criminal process on this Reservation:

How may criminal process be served for the arrest of the following persons?

(a) A civilian teamster driving along the road on the Reservation.

(b) A soldier playing ball on the parade ground.

(c) A soldier at drill with his company.

(d) A person within a government building.

In what manner could civil process be served upon the above persons?

These problems have been very interesting and very beneficial to the student officers. The problems were assigned in January and written solutions by each student officer were submitted on or before March 31. They were discussed in the section room on April 25 and 27. Aside from the benefit the student derived from having added to his legal knowledge on the particular points in the problem is the greater benefit he obtained in developing his faculty for finding the law. The discussions served to clear up any errors made in the solutions and to emphasize some points of the problems omitted by some of the students. No feature of the law course has excited a greater interest or brought forth a better effort than these problems. All of the solutions were excellent, but those prepared by 1st Lieutenant E. A. Kreger, 28th Infantry, deserve special mention, being complete in every detail, logical in arrangement and sound in judgment:

Graduating theses were prepared on the following subjects by the student officers whose names appear opposite.

SUBJECT.	AUTHOR.
Witnesses before courts-martial, military and civilian; attendance; depositions; witness fees; illustrated by copies of all papers, writs, vouchers, etc., which a judge advocate may be called upon to prepare.	1st Lt. A. J. Dougherty, 28th Infantry.

Powers and duties of the provost marshal.	Capt. C. King, 1st Infantry.
The treatment of non-combatants, war rebels, war traitors and guerillas.	Capt. W. T. Bates, 27th Infantry.
Tribunals for enforcing martial law and military government.	Capt. S. Heintzelman 6th Cavaly.
The right of asylum in time of war, including the rescue of belligerents by neutrals at sea.	Capt. H. E. Ely, 26th Infantry.
The 17th Article of War.	Capt. W. H. Paine, 7th Cavalry.
Jurisdiction on lands owned by the United States.	1st Lt. G. A. Youngberg Corps of Engineers.
Government contracts under Article LI of the Army Regulations.	Capt. J. A. Woodruff, Corps of Engineers.
Special pleas in military trials.	1st. Lt. C. A. Trott, 5th Infantry.
The militia as a national military force.	Capt. F. Sayre, 8th Cavalry.
Contraband of war and liability of vessels carrying same.	1st Lt. R. McCoy, 27th Infantry.
Martial law as applied by state authority.	Capt. H. H. Tebbets, 30th Infantry.
The jurisdiction of courts-martial over civilians.	Capt. H. W. Butner, Artillery Corps.
The maintenance of military discipline.	Capt. S. C. Vestal, Artillery Corps.
Embezzlement and the 60th Article of War.	2d Lt. K. A. Joyce, 6th Cavalry.
Opinions as evidence.	Capt. F. Conner, Artillery Corps.
The 59th Article of War.	1st Lt. W. H. Waldron, 29th Infantry.
The use of the military in the enforcement of the law.	Capt. L. R. Holbrook, 5th Cavalry.
Treatment of property in occupied territory.	1st Lt. R. S. Fitch, 1st Cavalry.
The suspension of the privilege of the writ of habeas corpus in the United States.	1st Lt. B. P. Disque, 3d Cavalry.
The advantage of a legal education to officers of the army.	1st. Lt. J. S. Fair, 9th Cavalry.

The scope and purpose of international arbitration.	1st Lt C.E.McCullough, 15th Cavalry.
A summary of the Milligan case.	1st Lt. E. A. Kreger, 28th Infantry.

It is considered that the preparation of these thesis has been very beneficial to the student officers, necessitating extensive reading on their part and a thorough digesting of the ideas obtained before couching them in their own language. All thesis show extensive research and some of them possess a high order of merit. Those prepared by 1st Lieutenant A. J. Dougherty, 28th Infantry; 1st Lieutenant G. A. Youngberg, Corps of Engineers, and Captain Farrand Sayre, 8th Cavalry, deserve special mention and are deemed worthy of publication.

SCOPE AND METHOD OF INSTRUCTION

The course was planned with a view of making it a complement to the course taken by the Infantry and Cavalry class and at the same time it was desired that it be especially adapted to fitting officers for staff duties. A thorough knowledge of the theory of our government and of our constitution, together with a knowledge of the legal rights and obligations of the military in time of war, insurrection, or rebellion, both in its relations with citizens of its own country and those of the enemy, is included in the scope of instruction for the year.

The method of instruction was a combination of the quiz and case systems. The entire class was assembled and quizzed upon the assigned lessons. Leading cases bearing on principles in the lesson of the day were assigned to selected students, who were required to state the cases briefly to the class, make special note of the points of law decided in the cases which had a bearing on principles set forth in the lesson, and give the reasoning whereby the court

arrived at its decision. By thus coupling legal principles with adjudicated cases, the principles were more firmly fixed in the students' minds and the subject made more interesting to them.

A study of leading cases is especially interesting and instructive in connection with the subject of Military Government and Martial Law. As the book we are using on this subject is not well suited for a text-book, I recommend that it be gradually replaced as follows: omit that portion relating to Martial Law for the coming year and cover the subject of Martial Law by a study of leading cases with notes prepared by the department on the subject of Martial Law; the following year the subject of Military Government can be similarly replaced. Eventually when summaries and notes on all the leading cases are prepared by the department, they can be assembled in one volume as a convenient text-book on the subject of Military Government and Martial Law. I believe it would be to the interest of the service and to the college to send to each post in the United States on those years in which law is taken in the post schools, copies of the law problems given to the students here, followed by approved solutions by the department to those posts requesting them.

Respectfully submitted,

H. O. WILLIAMS,

Captain, 5th Infantry,

Instructor.

[APPENDIX E.]

U. S. STAFF COLLEGE,

DEPARTMENT OF LANGUAGES.

Fort Leavenworth, Kansas, August 31, 1906.

The Secretary,
U. S. Staff College,
Fort Leavenworth, Kansas.

Sir:

I have the honor to submit the following report of the work of this Department for the year ending August 31, 1906:

The Department of Languages at the U. S. Staff College was authorized by paragraph 41, General Orders No. 140, August 19, 1905, War Department. The last sub-paragraph of paragraph 42 further specified that the course in languages "shall be elective and shall consist of French and German or either as elected by the student officer. Each language shall be taught so as to give instruction in reading, writing, and speaking, with a special view to acquiring a conversational knowledge of the language."

As the instruction in French and German took place at one and the same time under different instructors it was impossible for any one student officer to take both, although several would have liked to do so. Sixteen elected in writing to take French and together with two officers of the Signal School, who likewise elected French, constituted the French class and were taught by myself. Seven elected in writing to take German and together with two officers of the Signal School, who likewise elected German, con-

stituted the German class, and were taught by Captain O. L. Spaulding, jr., Artillery Corps.

ALLOTMENT OF TIME

From September 1 to December 23, 1905, 80 whole days were available for school work of which no time was allotted to the Department. From January 3 to June 30, 1906, 125 school days were available of which 58 half days were allotted. Total for the year 58 half days. The last two half days assigned, 57 and 58, were not available by the Department for instruction in the Staff class, as on those two half days the examination of the Signal School was held necessitating the presence of the French and German instructors; so that only 56 half days were utilized.

These 56 half days were assigned as whole days, instruction in languages occupying the whole time of the Staff College from Wednesday, January 3, to Friday, February 9, inclusive, necessitating 4 or 5 hours' daily work in the section room.

TEXT-BOOKS

French: De Peiffer's Pronunciation.
Castarède's Verbs.
I. C. S. Conversation Texts, Parts 1—8.
German: I. C. S. Conversation Texts, Parts 1—6.

In the Staff class there is no assigned weight given to the studies. Student officers are not marked on practical work nor are they examined.

THEORETICAL

LIST OF LESSONS IN FRENCH

De Peiffer's Pronunciation
Castarède's Verbs.

1. De Peiffer—P. 7 to bot. p. 14. Examples for pronunciation only.
2. P. 15 to bot. p. 19. Examples for pronunciation only.
3. P. 20 to part II. p. 27. Examples for pronunciation only.

4. P. 44 to end p. 50. Examples for pronunciation only.
5. Castarède, pp. 1 and 12.
6. P. 13 terminations 1st conj. only; pp. 16, 17, simple tenses only, of "parler."
7. P. 4; p. 21, simple tenses only.
8. P. 6, to conjug. of "avoir"; pp. 18, 19, 20, simple tenses only.
9. P. 8, to conjug. of "avoir"; p. 22, simple tenses only.
10. Review of "parler," affir., interrog., neg., neg.-int.; simple tenses only.
11. P. 13, terminations 2d, conjug. only; pp. 23, 24, simple tenses only.
12. Pp. 23, 24, simple tenses only; affir., interrog., neg., neg.-int. conjugations.
13. P. 13, terminations 3d, conjug. only; pp. 25, 26, simple tenses only.
14. Pp. 25, 26, simple tenses only; affir., interrog., neg., neg.-int. conjugations.
15. P. 13, terminations 4th conjug. only; pp. 27, 28, simple tenses only.
16. Pp. 27, 28, simple tenses only; affir., interrog., neg., neg.-int conjugations.
17. Review, 4 regular conjug., simple tenses, affir., int., neg., neg.-int.
18. Pp. 2, 3, "avoir," simple tenses only.
19. Pp. 4-8, simple tenses only.
20. Compound tenses, pp. 2-10.
21. Compound tenses, pp. 16-28.
22. General Review, "avoir" and 4 regular conjugations.
23. Pp. 29, 30, 31.
24. Pp. 32, 33.
25. Pp. 34, 35.
26. Pp. 36, 37.
27. Pp. 38, 39.
28. Pp. 40, 41, 42.
29. Pp. 9, 10, simple tenses only.
30. Pp. 9, 10, 11, simple tenses only.
31. Pp. 9, 10, 11, complete.
32. Pp. 44, 45, 46, 47.
33. Pp. 48-57.
34. Pp. 61, 62.
35. Pp. 63, 64.
36. Pp. 65, 66, 67.
37. Pp. 70-74.
38. Pp. 75, 76, 77.
39. Pp. 78, 79, 80.
40. Pp. 81, 82, 83.
41. Pp. 84, 85, 86.
42. Pp. 87, 88, 89.
43. Pp. 90, 91, 92.
44. Pp. 93-96.
45. Pp. 97-98.
46. Pp. 99, 100, 102.
47. Pp. 103, 104, 105.
48. Pp. 106, 107, 108.
49. Pp. 109, 110, 111.
50. Pp. 112, 113, 114.
51. Pp. 115, 116, 117.
52. Pp. 118, 119, 120.
53. Pp. 121, 122, 123.
54. Pp. 124, 125, 126.
55. Pp. 127, 128, 129.
56. Pp. 130, 131, 132.

FRENCH CONVERSATION TEXTS

Part 1. Lesson I, to drill p. 6 to rev. and convers. p. 9 to end p. 12.
Lesson II, to drill p. 17. Record I. To rev. and convers. p. 26 to end p. 28.
Review Lessons, I, II. Record II.

Part 2. Lesson III, to drill p. 5 to rev. and convers. p. 14 to end p. 16.
Lesson IV, to drill p. 22. Record III. To rev. and convers. p. 29 to end p. 32.
Review Lessons III, IV. Record IV.
Part 3. Lesson V, to drill p. 7 to rev. and convers. p. 14 to end p. 17.
Lesson VI, to drill p. 23. Record V. To rev. and convers. p. 30 to end p. 32.
Review Lessons V, VI. Record VI.
Part 4. Lesson VII, to drill p. 6 to rev. and convers. p. 14 to end p. 16.
Lesson VIII, to drill p. 22. Record VII. To rev. and convers. p. 31 to end p. 34.
Review Lessons VII, VIII. Record VIII.
Part 5. Lesson IX, to drill p. 5 to rev. aud convers. p. 14 to end p. 16.
Lesson X, to drill p. 22. Record IX. To rev. and convers. p. 34 to end p. 35.
Review Lessons IX, X.
Part 6. Lesson XI, to drill p. 8 to rev. and convers. p. 15 to end p. 18.
Lesson XII, to drill p. 24. Record XI. To rev. and convers. p. 34 to end p. 37.
Review Lessons XI, XII.
Part 7. Lesson XIII, to drill p. 5 to rev. and convers. p. 14 to end p. 15.
Lesson XIV, to drill p. 23. Record XIII. To rev. and convers. p. 30 to end p. 33.
Review Lessons XIII, XIV.
Part 8. Lesson XV, to drill p. 6 to rev. and convers. p. 12 to bot. p. 14. Record XV.

GERMAN CONVERSATION TEXTS

1. Part 1. Lesson I.
2. Part 1. Lesson I.
3. Part 1. Lesson II, to drill p. 14.
4. to end p. 23.
5. Review Lesson I, II.
6. Part 2. Lesson III, to drill p. 6 Record II.
7. to rev. and convers. p. 14.
8. to end p. 16.
9. Lesson IV, to drill p. 22. Record III.
10. to rev. and convers. p. 28.
11. to end p. 30.
12. Review Lessons III, IV.
13. Part 3. Lesson V, to drill p. 6. Record IV.
14. to rev. and convers. p. 15.
15. to end p. 17.
16. Lesson VI. to drill p. 24. Record V.

17. to rev. and convers. p. 33.
18. to end p. 35.
19. Review Lessons V, VI.
20. Part 4. Lesson VII, to drill p. 7.
21. to rev. and convers. p. 14.
22. to end p. 17.
23. Lesson VIII, to drill p. 29. Record VII.
24. to rev. and convers. p. 36.
25. to end p. 39.
26. Review, Lessons VII, VIII.
27. Part 5. Lesson IX, to drill, p. 13.
28. Lesson IX, from beginning to mid. p. 16.
29. to rev. and convers. p. 25.
30. to bot. p. 27.
31. to end p. 31.
32. Review Lesson IX.
33. Lesson X, to drill p. 42. Record IX.
34. Lesson X, from beginning to line 6, p. 43.
35. to rev. and convers. p. 51.
36. to line 4, p. 54.
37. to end p. 59. Only read "common phrases."
38. Review Lesson X.
39. Review Part 1. Lessons I, II.
40. Review Part 2. Lessons III, IV.
41. Review Part 3. Lessons V, VI.
42. Review Part 4. Lessons VII, VIII.
43. Review Part 5. Lesson IX.
44. Review Part 5. Lesson X; only read "com. phrases"
45. Part 6. Lesson XI to §11 p. 10.
46. Lesson XI, from beginning to drill p. 17.
47. to bot. p. 24.
48. to bot. p. 29.
49. to §49, p. 34.
50. to end p. 36.
51. Review Lesson XI.
52. Part 6. Lesson XII, to §6, p. 44. Record XI.
53. from beginning to drill p. 48.
54. to mid. p. 53.
55. to mid. p. 59.
56. to bot. p. 64.

SCOPE AND METHOD OF INSTRUCTION IN THEORETICAL AND PRACTICAL WORK

(a) *Scope.*

A reference to the text-books and lists of lessons already given will indicate fully the theoretical course followed.

(b) *Methods.*

The conference system was employed supplemented in each language by informal lectures. These informal lectures in German dealt with declensions and conjugations and such other grammatical points as came up from time to time which were not fully explained in the text; in French they dealt with the verb and all the important points in the grammar.

In general each lesson was gone over twice; once in advance and a second time in review, at the next meeting of the class. In addition, general reviews were held as indicated in the lists of lessons.

As the main object of the course was conversational knowledge of the language, no lessons in translation were assigned and all work was oral. In addition to the conversational work, a considerable time at each conference during the last half of the course, was devoted to reading aloud from simple French and German prose selections; student officers were required to translate orally and often to give in their own words in French or German the substance of what had been read.

PRACTICAL WORK

Scope and Method.

As an aid in securing accuracy in pronunciation and conversational fluency and facility each student officer was required to make the "Phonograph Records", 12 in French and 7 in German, contained in the lessons taken. All papers and cylinders were examined and returned, with a memorandum calling attention to the errors made; the student officer then

went over his cylinder with this memorandum before him and noted and corrected his errors.

REMARKS

The student officers were so conscientious and their work was of such a high order, that I deemed it a duty to submit the following letter:

U. S. STAFF COLLEGE

DEPARTMENT OF LANGUAGES

FORT LEAVENWORTH, KANSAS,
February 10, 1906.

The Secretary,
U. S. Staff College,
Fort Leavenworth, Kansas.

Sir:—

As the course of instruction in Languages of the student officers of the Staff College has been completed, I consider it my duty to make it of official record that in their work the student officers without exception showed the most commendable zeal and enthusiasm.

Urged on only by professional esprit, these officers and gentlemen displayed such attentive application to their studies and, under the severe strain of five hours' daily work in the section room, such a real desire for knowledge, as to be justly entitled to this commendation of their pride and of an important soldierly quality they individually possess—that of doing to the best of their ability the work prescribed for them.

Very respectfully,
(Signed) PETER E. TRAUB,
Captain, 13th Cavalry,
Instructor.

The hard work and able efforts of Captain O. L. Spaulding, jr., Artillery Corps, are responsible in great part for the exellent results attained by the German section of the Staff class.

RECOMMENDATIONS

1. That at least 100 lessons be assigned to French and German in order to give a good foundation in these two languages.

2. That whole days be not assigned in future to the Department of Languages, as after the first third of the course the strain is too great on the student officers and they become "stale."

3. That an additional assistant be assigned to duty with the Department so as to relieve the undersigned from the necessity of actual teaching in the class-room, and to enable him to perform his duty of supervising the instruction in all three foreign languages.

4. That the sum of twenty-five dollars be allotted each year to the Department to be expended in whole or in part in the purchase of such French and German books, not obtainable for the school library, as may be deemed proper by the undersigned with the approval of the commandant.

PETER E. TRAUB,
Captain, 13th Cavalry,
Instructor.

UNITED STATES SIGNAL SCHOOL

Fort Leavenworth, Kansas, August 31, 1906.

The Chief of Staff,
United States Army,
Washington, D. C.

Sir:

I have the honor to submit the following report on this School for the year commencing August 25, 1905, and ending August 24, 1906:

COMMANDANT

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

PERSONAL STAFF

1st Lieutenant William N. Hughes, jr., 13th Infantry.
1st Lieutenant Clarence O. Sherrill, Corps of Engineers.

Lieutenant Sherrill having entered the class of the Infantry and Cavalry School on September 1, 1905, was, at his own request, relieved from duty as Aide-de-Camp, to date November 30, 1905, per Orders No. 15, dated November 28, 1905.

2d Lieutenant Frederick Mears, 5th Cavalry, was directed to report for duty as Aide-de-Camp per paragraph 5, Special Orders No. 282, War Department, dated December 5, 1905, and was announced as Aide-de-Camp per Orders No. 18, dated December 18, 1905.

Lieutenants Hughes and Mears were relieved from duty as Aides-de-Camp per paragraph 19, Special Orders No. 189, War Department, dated April 14,

1906, General Bell having been appointed Chief of Staff.

ASSISTANT COMMANDANT

Major George O. Squier, Signal Corps.

SECRETARY AND DISBURSING OFFICER

Captain Milton F. Davis, 10th Cavalry.

Captain Davis, on May 1, 1906, availed himself of leave of absence, granted per paragraph 11, Special Orders No. 76, War Department, dated March 30, 1906.

1st Lieutenant William N. Hughes, jr., 13th Infantry, performed the duties of Secretary during the absence of Captain Davis on leave, in obedience to Orders No. 14, dated April 30, 1906.

ASSISTSTANT INSTRUCTOR

Captain Charles McK. Saltzman, Signal Corps.

Captain William Mitchell, Signal Corps, was on September 1, 1905, detailed as assistant instructor, Signal School, in addition to his other duties, per paragrah I, Orders No. 5, dated September 1, 1905.

DEPARTMENT OF ENGINEERING

Major Lansing H. Beach, Corps of Engineers, Instructor.
Captain Edwin R. Stuart, Corps of Eng., Asst. Instructor.

DEPARTMENT OF LANGUAGES

Captain Peter E. Traub, 13th Cavalry, Instructor.
Captain Francis Le J. Parker, 12th Cavalry, Asst. Instructor.
Captain Oliver L. Spaulding, jr., Artillery Corps, Assistant Instructor.

STUDENT OFFICERS

Of the nine officers constituting the Signal School class, the following named were members of the Infantry and Cavalry School class of 1904-5, viz:

1st Lieutenant Eldred D. Warfield 30th Infantry.
1st Lieutenant Charles L. Willard 29th Infantry.
1st Lieutenant Paul W. Beck, 5th Infantry.
1st Lieutenant George C. Lewis, 1st Infantry.

These officers were, by authority of the Chief of Staff, conveyed in War Department telegram, retained at Fort Leavenworth, Kansas, as members of the Signal School class, 1905-6, together with the following, viz:

Captain Charles Mc K. Saltzman, Signal Corps.
Captain Mack K. Cunningham, Signal Corps.
Captain Richard O. Rickard, Signal Corps.
1st Lieutenant George C. Wieczorek, 17th Infantry.
2d Lieutenant Olney Place, 6th Cavalry.

CHANGES IN PERSONNEL

During school year the following changes occurred in student personnel:

Captain Saltzman was promoted Major in Signal Corps to date Februrary 10, 1906. No order announcing promotion was received.

Captain Rickard resigned his commission as an officer of the army. Acceptance of resignation announced in paragraph 13, Special Orders No. 1, War Department, dated January 2, 1906.

Captain Cunningham was relieved from duty at school per paragraph 12, Special Orders No. 72, War Department, dated March 26, 1906, and left post on leave of absence April 3, 1906.

Considering that this has been the first year of its existence, the progress made in this school has been not only gratifying but remarkable.

Very respectfully,

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

[APPENDIX A.]

THE U. S. SIGNAL SCHOOL

OFFICE OF ASSISTANT COMMANDANT

Fort Leavenworth, Kansas, August 25, 1906.

The Secretary,
U. S. Signal School,
Fort Leavenworth, Kansas.

Sir:

I have the honor to submit the following report of the work of this school for the year commencing August 25, 1905, and ending August 24, 1906.

The U. S. Signal School was created by General Orders No. 140, War Department, series 1905, which order states in general terms the object of the school and the general scope of the instruction to be followed.

In compliance with paragraph 5, Special Orders No. 108, War Department, series 1905, the undersigned was detailed as assistant commandant of the Signal School and reported, accordingly, on August 5, 1905.

STUDENT OFFICERS

The following student officers reported pursuant to War Department orders:

Beck, Paul W., 1st Lieutenant, 5th Infantry.
Cunningham, Mack K., Captain, Signal Corps.
Lewis, George C., 1st Lieutenant, 1st Infantry.
Place, Olney, 2d Lieutenant, 6th Cavalry.
Rickard, Richard O., Captain, Signal Corps.
Saltzman, Charles McK., Captain, Signal Corps.
Warfield, Eldred D., 1st Lieutenant, 30th Infantry.
Wieczorek, George A., 1st Lieutenant, 17th Infantry.
Willard, Charles L., 1st Lieutenant 29th Infantry.

Captain Richard O. Rickard's resignation from the Army was accepted per Special Orders No. 1, War Department, series 1906. Left post January 2, 1906.

Captain Mack K. Cunningham was relieved from duty at this school per Special Orders No. 72, War Department, series 1906. Left school April 3, 1906.

Captain C. McK. Saltzman, Signal Corps, was detailed as assistant instructor in the Department of Signal Engineering, in addition to his duties as student officer, per Orders No. 56, Infantry and Cavalry School, Signal School and Staff College, series 1905.

Captain William Mitchell, Signal Corps, was detailed as assistant instructor in the Department of Signaling, per paragraph 1, Orders No. 5, Infantry and Cavalry School, Signal School and Staff College, series 1905.

Under the provisions of General Orders No. 140 above mentioned, the course of study embraced three departments, as follows:

I. Department of Signaling.
II. Department of Signal Engineering.
III. Department of Languages.

DEPARTMENT OF SIGNALING

The course of study in this department was divided into two parts, namely, theoretical and practical, and embraced optical, acoustical and electrical signaling, as applied to the military profession.

The course was conducted by means of lectures, recitations from the authorized manuals, conferences, written exercises and practical instruction in the use of the various instruments and appliances required for military signaling in all its branches.

ALLOTMENT OF TIME

From September 1 to September 29, ten half days, theoretical instruction by recitations, lectures and written exercises.

Practical instruction thirty-three half days, from September 1st to September 30th, and May 23rd to June 8th.

The practical instruction in visual signaling extended over this period with examination tests held on June 25th, in order that each student would be required to keep up his interest in visual signaling throughout the course.

TEXT-BOOKS

Signal Corps Manuals, Nos. 2 and 6. Lectures on optics.

ALLOTMENT OF ASSIGNED WEIGHT

Theoretical Examination, ...	33⅓
Practical Work, ...	66⅔

Including both practical and theoretical work, examinations and tests, the highest mark obtained was 97.59, out of 100, the lowest, 92.42, and the average, 95.32.

DEPARTMENT OF SIGNAL ENGINEERING

The course of study in this department was divided into two parts, theoretical and practical, including instruction in laboratory work.

ALLOTMENT OF TIME

From October 2, 1905, to June 8, 1906, 133 half days, theoretical instruction was given by recitations, lectures and written exercises.

From November 14, 1905, to June 29, 1906, practical instruction was given for 169 half days in laboratory work, field exercises, sketching, fire-control installations, wireless telegraphy, photography and experimental work.

TEXT-BOOKS

Lessons in Practical Electricity, Swoope.
Lectures on Alternating Currents.
Signal Corps Manuals, Nos. 2, 3, 4, 5 and 6.
Handbook for the use of Electricians.
Artillery Notes No. 12, (oil engines).
Maver's Wireless Telegraphy.
Signal Corps Memoranda, Nos. 3 and 5.
Root's Military Topography and Sketching.

ALLOTMENT OF ASSIGNED WEIGHT

Theoretical examinations . . . . . 475.
Practical work, ... 500.

Including both practical and theoretical work, examinations and tests, the highest mark obtained was 952.575 out of 975, the lowest, 871.650, and the average, 928.6875.

METHOD AND SCOPE OF INSTRUCTION

The theoretical instruction was conducted by means of lectures, recitations, conferences, and written exercises, and embraced the study of the fundamental laws of electrical engineering, so far as was necessary to a thorough understanding of all the electrical apparatus, or instruments used by the Signal Corps in the field, in fire-control work of the Coast Artillery, in the laying, operation and maintenance of submarine cables and in the construction and operation of wireless telegraph stations, the installation and operation of gas and oil engines, military aeronautics, photography and topography.

The laboratory course embraced practical instruction in making fundamental electrical measurements, and the operation, repair and maintenance of the various instruments and appliances used by the Signal Corps.

The course in military photography was conducted by Captain E. T. Cole, 6th Infantry, assistant instructor in the Department of Engineering, and included ten half days, from March 1st to March 26th.

LABORATORY.

A small electrical laboratory situated in a part of the basement of Sherman Hall was fitted up and equipped for practical instruction, and formally opened by the acting Commandant on November 14th. The equipment of the Laboratory has been continually improved throughout the year by the supply upon requisitions to the Chief Signal Officer of the Army, of instruments, apparatus and material.

DEPARTMENT OF LANGUAGES

The instruction in languages was in charge of the instructor in languages in the Infantry and Cavalry School and Staff College. Three officers took the course in Spanish, prescribed for the Infantry and Cavalry School, two officers took the course in French and two officers the course in German, prescribed for the Staff College.

For a detailed report of this instruction during the current school year, reference is respectfully made to the report of Captain P. E. Traub, 13th Cavalry, instructor in languages, see appendix "H," report of Infantry and Cavalry School.

TOPOGRAPHY AND SKETCHING

The course in these subjects was in charge of the instructor in engineering of the Infantry and Cavalry School and Staff College. Graduates of the Infantry and Cavalry School took the Staff College course.

Reference is respectfully made to the detailed report of Major Lansing H. Beach, Corps of Engineers, instructor in topography and sketching, appendix "E," report of Infantry and Cavalry School.

JOURNAL MEETINGS.

During the current school year there has been conducted a professional journal meeting for the reports, criticism and discussion of such papers pertaining to military signaling or signal engineering as have appeared in the current military journals on file in the library of the school. These meetings have been held ordinarily twice monthly, and have been conducted by the cooperation of the assistant instructor and student officers, who have been required to present verbal reports, abstracts or written precis of articles of importance for general discussion and criticism at its meetings.

THESES

Each student officer has been required to prepare a thesis on a professional subject assigned by the assistant commandant which was submitted in a required form prior to June 15th. These theses have, as far as possible, included some practical investigation, conducted by the student himself and designed to develop initiative and confidence in his own ability to attack and carry to a conclusion original work.

The theses submitted during the current year, together with the names of the student officers who prepared each, are given below.

"Notes on the Equipment of the Smalest Signalling Units," by Lieutenant P. W. Beck, 5th Infantry.

"Military Gun Sights," by Lieutenant George C. Lewis, 1st Infantry.

"A Proposed Range-Finder for Infantry," by Lieutenant Olney Place, 6th Cavalry.

"The Training of Signal Corps Troops," by Major C. McK. Saltzman, Signal Corps.

"The Development of the Field Buzzer," by Lieutenant Eldred D. Warfield, 30th Infantry.

"Balloons and Flying Machines, and their Use in War," by Lieutenant George A. Wieczorek, 17th Infantry.

"The Searchlight in Field Operations," by Lieutenant Charles L. Willard, 29th Infantry.

The original subject assigned to Lieutenant Lewis, was "Field Glasses and Telescopes," but was changed later to "Military Gun Sights," on account of failure of certain necessary data asked for from the Second (Military Inf.) Division, General Staff, to arrive in time for use.

Although but ten half days were scheduled during the month of May for this work, yet the interest and professional zeal shown by each of the student officers in the prosecution of a definite subject in an original way have been very creditable. Copies of each of these theses prepared in the prescribed form,

have been filed with the records of the Signal School for future use.

MAP PROBLEMS AND TERRAIN EXERCISES

Practically the whole month of June was given over to practical instruction in Signal Corps work as applied to an army in the field. A series of problems and terrain exercises have been carried out by the student officers of the Signal School, using the personnel and present equipment of Company A, Signal Corps, which has been at the complete disposal of the School for instruction purposes. Before the actual exercises in the field, a limited number of map problems were prepared by selecting and adapting from the map problems in use in the Staff College certain ones which illustrate forcibly, from campaigns in history, the influence which proper military lines of information would have had upon the result. The class was divided into two committees which, working separately, submitted their solution for general discussion, and an "approved solution" was afterwards prepared and furnished to the members of the class.

In planning the practical terrain exercises, it became necessary to organize tentatively a tactical field-wire train from the Signal troops available, which train at present embraces the following:

Capacity of train, 60 miles of field wire.

Four (4) sections of 15 miles each (one day's march of a division).

Each section consists of but 1 wire wagon, with equipment for 4 buzzer stations, complete; total capacity of train, 16 buzzer stations.

Personnel of each section, 12 men. Of these men all are mounted but two; these latter ride on the wagon.

Total personnel of train, 50 men.

Each individual man, although permanently assigned to a section and having certain definite duties and responsibilities therein, is trained to fill any position in his section.

The above field-wire equipment is supplemented by a buzzer-wire and visual equipment for each section, for use when required for lines subsidiary to the main lines. The buzzer wire is a light steel wire weighing about five pounds to the half-mile coil, and can be easily paid out or reeled up by a mounted man at a trot.

From a military standpoint the immense advantages to be gained in dispensing with the materiel and personnel for pole construction of whatever sort must be apparent. In fact, the commanding officer at present unconsciously pictures to himself, when considering field lines, the comparatively complicated equipment which was used in the Civil War and known as the "Flying Field Telegraph Train." When he learns that one single, substantial field-wire wagon which automatically pays out and reels up a strong, insulated steel wire at any gait up to a fast trot, and which is operated by a personnel every man of which is mounted either on a horse or the wagon and which furnishes him with reliable telegraphic or telephonic communication wherever he chooses to go with his command, he will positively demand this service for all of his field operations.

He learns that his field wire is automatically maintained without specific orders, on the same principle that a railroad track is maintained by the use of section bosses. He learns that the wire trailing behind his command is placed in a concealed position by mounted men, equipped with light pikes for this work, who also keep up with his command. In fact, he learns that the enemy's raiding cavalry at-

tempting to cut his lines, no longer finds them conspicuously on poles inviting destruction.

Mounted field-buzzer squads are organized as follows:

Five (5) mounted men equipped with special hand-pikes, one pack mule, carrying two standard squad boxes, each containing one heliograph complete, one flag kit, one signal lantern, two cavalry buzzers and a supply of buzzer wire in half-mile coils, weighing five pounds each.

Each of these squads is equipped to follow the cavalry screen or light artillery at a trot, and establish field lines joining with and subsidiary to the main field lines laid by the field-wire train above described.

During the current year a portable field wireless telegraph outfit has been developed and limited practice with this apparatus given to the student officers of the school. For antennae the light steel buzzer wire used by the Signal Corps has been employed, which is elevated by collapsible kites made of Japanese silk at this station. The whole apparatus for a complete station is carried on a single pack mule in two standard pack boxes, especially designed and constructed here for the purpose. With this apparatus wireless messages have been received from Chicago, St. Louis, and also from ships in the Gulf of Mexico.

RECOMMENDATIONS

1. That the staff of the Signal School be increased as follows: 1 instructor; 1 assistant instructor, both to be graduates of the Signal School.

2. That the competitive marking system at present employed by the Signal School be abolished, and the courses conducted as far as proficiency is

concerned in the same manner as in the Staff College.

3. That the laboratory facilities of the school be practically doubled, both in space available for instruction, and in equipment.

4. That steps be taken immediately by the proper authorities to determine and officially adopt a standard organization and a standard drill and equipment for a company of the Signal Corps for actual service with an army in the field.

5. That officers of the Signal Corps who may be ordered to this school for instruction should have the privilege of a course of instruction at a garrison school, to enable them to obtain the maximum advantage from the course at the Signal School.

Respectfully submitted,

GEORGE O. SQUIER,
Major, Signal Corps, U. S. A.,
Assistant Commandant.

[APPENDIX B.]

THE U. S. SIGNAL SCHOOL

DEPARTMENT OF LANGUAGES

Fort Leavenworth, Kansas, August 31, 1906.

The Secretary,
U. S. Signal School,
Fort Leavenworth, Kansas.

Sir:

I have the honor to submit the following report of the work of this department for the year ending August 31, 1906:

The Department of Languages at the U. S. Signal School embracing the study of Spanish, French and German was authorized by Paragraph 4c., General Orders 140, August 19, 1905, War Department. Paragraph 5 of the same order further specified that the course in languages was to be conducted in connection with the same courses in the Infantry and Cavalry School and Staff College; that graduates of the Infantry and Cavalry School were to take the Staff College course (French or German) and the other student officers, the Infantry and Cavalry School course (Spanish).

It was deemed inadvisable for various reasons to have the student officers take Spanish with the Infantry and Cavalry class while the remainder of the class were being instructed in some other department, and later to have the latter portion of class take their French and German with the Staff class while those who had already taken Spanish were taking their instruction in the other department just mentioned. So

it was arranged that the whole Signal School should be studying languages at one and the same time, namely, the time that instruction was being given to the Staff class in French and German. Under provisions of Paragraph 5, General Orders No. 140, above quoted, 2 student officers took the French course with the French section of the Staff class under myself, 2 took German with the German section under Captain O. L. Spaulding, Jr., Artillery Corps, and the other five (afterwards reduced to 4 by resignation) were formed in a class by themselves and were taught Spanish by Captain Francis Le J. Parker, 12th Cavalry.

ALLOTMENT OF TIME

From September 1 to December 23, 1905, 80 school days were available for school work of which no time was allotted to the department. From January 3 to June 30, 1906, 125 days were available of which 58 half days were allotted. Total for the year 58 half days. These 58 half days were assigned as whole days, instruction in languages occupying the whole time of the Signal School and Staff College from Wednesday, January 3, to Monday February 12, inclusive, necessitating 4 to 5 hours daily work in the section room.

TEXT-BOOKS

French: De Peiffer's Pronunciation.
Castarède's Verbs.
I. C. S. Conversation Texts, Parts 1-8.

Spanish: Traub's Pronunciation and Verb.
Marion and Des Garenne's Introducción á la lengua Castellana.
Kroeh's How to Think in Spanish.
Worman's First Spanish Book.

German: I. C. S. Conversation Texts, Parts 1-6.

ALLOTMENT OF ASSIGNED WEIGHT

A weight of 100 was assigned to this department and was distributed as follows:

Practical work,	30.0
Examination,	70.0
Total,	100.0

LIST OF LESSONS IN FRENCH

De Peiffer's Pronunciation
Castarède's Verbs.

1. De Peiffer—P. 7 to bot. p. 14. Examples for pronunciation only.
2. P. 15 to bot. p. 19. Examples for pronunciation only.
3. P. 20 to part II. p. 27. Examples for pronunciation only.
4. P. 44 to end p. 50. Examples for pronunciation only.
5. Castarède, pp. 1 and 12.
6. P. 13 terminations 1st conj. only; pp. 16, 17, simple tenses only, of "parler."
7. P. 4; p. 21, simple tenses only.
8. P. 6, to conjug. of "avoir"; pp. 18, 19, 20, simple tenses only.
9. P. 8, to conjug. of "avoir"; p. 22, simple tenses only.
10. Review of "parler," affir., interrog., neg., neg.-int.; simple tenses only.
11. P. 13, terminations 2d, conjug. only; pp. 23, 24, simple tenses only.
12. Pp. 23, 24, simple tenses only; affir., interrog., neg., neg.-int. conjugations.
13. P. 13, terminations 3d, conjug. only; pp. 25, 26, simple tenses only.
14. Pp. 25, 26, simple tenses only; affir., interrog., neg., neg.-int. conjugations.
15. P. 13, terminations 4th conjug. only; pp. 27, 28, simple tenses only.
16. Pp. 27, 28, simple tenses only; affir., interrog., neg., neg.-int conjugations.
17. Review, 4 regular conjug., simple tenses, affir., int., neg., neg.-int.
18. Pp. 2, 3, "avoir," simple tenses only.
19. Pp. 4-8, simple tenses only.
20. Compound tenses, pp. 2-10.
21. Compound tenses, pp. 16-28.
22. General Review, "avoir" and 4 regular conjugations.
23. Pp. 29, 30, 31.
24. Pp. 32, 33.
25. Pp. 34, 35.
26. Pp. 36, 37.
27. Pp. 38, 39.
39. Pp. 78, 79, 80.
40. Pp. 81, 82, 83.
41. Pp. 84, 85, 86.
42. Pp. 87, 88, 89.
43. Pp. 90, 91, 92.

28. Pp. 40, 41, 42.
29. Pp. 9, 10, simple tenses only.
30 Pp. 9, 10, 11, simple tenses only.
31. Pp. 9, 10, 11, complete.
32. Pp. 44, 45, 46, 47.
33. Pp. 48-57.
34. Pp. 61, 62.
35. Pp. 63, 64.
36. Pp. 65, 66, 67.
37. Pp. 70- 74.
38. Pp. 75, 76, 77.
44. Pp. 93-96.
45. Pp. 97-98.
46. Pp. 99, 100, 102.
47. Pp. 103, 104, 105.
48. Pp. 106, 107, 108.
49. Pp. 109, 110, 111.
50. Pp. 112, 113, 114.
51. Pp. 115, 116, 117.
52. Pp. 118, 119, 120.
53. Pp. 121, 122, 123.
54. Pp. 124, 125, 126.
55. Pp. 127, 128, 129.
56. Pp. 130, 131, 132.

FRENCH CONVERSATION TEXTS

Part 1. Lesson I, to drill p. 6 to rev. and convers. p. 9 to end p. 12.
Lesson II, to drill p. 17. Record I. To rev. and convers. p. 26 to end p. 28.
Review Lessons, I, II. Record II.

Part 2. Lesson III, to drill p. 5 to rev. and convers. p. 14 to end p. 16.
Lesson IV, to drill p. 22. Record III. To rev. and convers. p. 29 to end p. 32.
Review Lessons III, IV. Record IV.

Part 3. Lesson V, to drill p. 7 to rev. and convers. p. 14 to end p. 17.
Lesson VI, to drill p. 23. Record V. To rev. and convers. p. 30 to end p. 32.
Review Lessons V, VI. Record VI.

Part 4. Lesson VII, to drill p. 6 to rev. and convers. p. 14 to end p. 16.
Lesson VIII, to drill p. 22. Record VII. To rev. and convers. p. 31 to end p. 34.
Review Lessons VII, VIII. Record VIII.

Part 5. Lesson IX, to drill p. 5 to rev. aud convers. p. 14 to end p. 16.
Lesson X, to drill p. 22. Record IX. To rev. and convers. p. 34 to end p. 35.
Review Lessons IX, X.

Part 6. Lesson XI, to drill p. 8 to rev. and convers. p. 15 to end p. 18.
Lesson XII, to drill p. 24. Record XI. To rev. and convers. p. 34 to end p. 37.
Review Lessons XI, XII.

Part 7. Lesson XIII, to drill p. 5 to rev. and convers. p. 14 to end p. 15.
Lesson XIV, to drill p. 23. Record XIII. To rev. and convers. p. 30 to end p. 33.
Review Lessons XIII, XIV.

Part 8. Lesson XV, to drill p. 6 to rev. and convers. p. 12 to bot. p. 14. Record XV.

GERMAN CONVERSATION TEXTS

1. Part 1. Lesson I.
2. Part 1. Lesson I.
3. Part 1. Lesson II, to drill p. 14.
4. to end p. 23.
5. Review Lesson I, II.
6. Part 2. Lesson III, to drill p. 6 Record II.
7. to rev. and convers. p. 14.
8. to end p. 16.
9. Lesson IV, to drill p. 22. Record III.
10. to rev. and convers. p. 28.
11. to end p. 30.
12. Review Lessons III, IV.
13. Part 3. Lesson V, to drill p. 6. Record IV.
14. to rev. and convers. p. 15.
15. to end p. 17.
16. Lesson VI. to drill p. 24. Record V.
17. to rev. and convers. p. 33.
18. to end p. 35.
19. Review Lessons V, VI.
20. Part 4. Lesson VII, to drill p. 7.
21. to rev. and convers. p. 14.
22. to end p. 17.
23. Lesson VIII, to drill p. 29. Record VII.
24. to rev. and convers. p. 36.
25. to end p. 39.
26. Review, Lessons VII, VIII.
27. Part 5. Lesson IX, to drill, p. 13.
28. Lesson IX, from beginning to mid. p. 16.
29. to rev. and convers. p. 25.
30. to bot. p. 27.
31. to end p. 31.
32. Review Lesson IX.
33. Lesson X, to drill p. 42. Record IX.
34. Lesson X, from beginning to line 6, p. 43.
35. to rev. and convers. p. 51.
36. to line 4, p. 54.
37. to end p. 59. Only read "common phrases."
38. Review Lesson X.
39. Review Part 1. Lessons I, II.
40. Review Part 2. Lessons III, IV.
41. Review Part 3. Lessons V, VI.

42. Review Part 4. Lessons VII, VIII.
43. Review Part 5. Lesson IX.
44. Review Part 5. Lesson X; only read "com. phrases"
45. Part 6. Lesson XI to §11 p. 10.
46. Lesson XI, from beginning to drill p. 17.
47. to bot. p. 24.
48. to bot. p. 29.
49. to §49, p. 34.
50. to end p. 36.
51. Review Lesson XI.
52. Part 6. Lesson XII, to §6, p. 44. Record XI.
53. from beginning to drill p. 48.
54. to mid. p. 53.
55. to mid. p. 59.
56. to bot. p. 64.

PRACTICAL WORK

(See list of lessons in Spanish.)

LIST OF EXERCISES FOR YEAR. PRACTICAL.

Making six phonograph records.

Owing to the fact that the competition between the student officers of the Signal School was for units for "honor graduate" standing, it was necessary in order to make the competition as nearly equal as possible, to employ the same methods in marking the phonograph records, and to give to all a uniform oral and written examination in the three languages. This announcement was made at the beginning and was strictly carried out, giving satisfaction to all.

SCOPE AND METHOD OF INSTRUCTION IN THEORETICAL AND PRACTICAL WORK

(a) *Scope.*—

The scope of the theoretical work was planned with a view to giving each student such a knowledge of the pronunciation, grammar, verbs, vocabulary and idioms as would afford him a sound foundation for a practical speaking knowledge of the language. The time allowed was not suffcient in French and German to accomplish this object. A reference to

the text-books and lists of lessons already given will indicate fully the theoretical course followed.

(b) *Methods.*—

The method of theoretical instruction in French and German is fully explained in the annual report of the Staff College.

In Spanish, recitations, quizzes, conferences, and informal lectures were used. The informal lectures supplemented the text-books or rendered assistance in advance for the preparation of important or difficult points. The course in the "Introducción"—the text-book in grammar—was gone over twice, once in advance and once in review. The last nine lessons in the verb-book were also devoted to general review; while further work in the nature of review was had by means of the quizzes conducted about each fourth day and involving the use, in Spanish conversation, of the constructions, idioms, etc., gone over since the last preceding exercise of the same character. The "First Spanish Book" and "How to Think in Spanish" were employed mainly as a means of enlarging the student's working vocabulary and as a basis for conversation in the section room. About one third of the daily time was devoted to work in the nature of recitations, the remainder being utilized in conversation, quizzes, etc. Except in the case of the informal lectures, all conversation in the section room was, as far as practicable carried on in Spanish.

PRACTICAL WORK

(a) *Scope.*—

The scope of the practical work was planned with a view to giving to each student officer, first a correct pronunciation, and in addition such additional conversational fluency and facility as would be imparted in the brief time allotted to the department.

In French and German, the Signal School student officers had to take the practical work prescribed for the Staff class, and in addition the practical work (6 phonograph records) prescribed for the Signal School student officers who took Spanish. It was on these phonograph records that the student officers of the Signal School were graded. The first record was for practice, each of the other five counted 6, a total of 30 units.

On these the highest proficient mark was 29.-75731; the lowest 24.95037; the average 28.184—one student officer was deficient in Spanish, having made only 21.80868 or 72.69 per cent.

To give a correct understanding of the equalivation of the practical work in the three languages, I insert a copy of the 5th phonograph record required in each language.

FRENCH PHONOGRAPH RECORD NO. 5.

Captain
Lieutenant..... Regt. or Corps.....

The record consists of three parts; total value, 6.0.

In (A) pronunciation alone counts; value 1.5.

In parts (B) and (C), relevancy, completeness, and correctness of sentence spoken into phonograph have, for the two parts, combined value of 3.0; while pronunciation, including sentence accent, has for the two parts, combined value of 1.5. Each sentence spoken into the instrument must contain a subject and predicate and conform where practicable to the polite forms of speech customarily employed by the French-speaking people. The conditions for making this last record are the same as those laid down for record No. 3, *except* that only 20 minutes will be allowed from the time the paper is given to the student officer until the record is handed in.

(A) Pronounce:

Apprenons, veulent, (3d. pl. pres. ind.) ameublement, douzaine, rallonges, réfléchir, fondation, Boulogne, avancer, remercis, hier, voisine, rayon, vingt-cinq, août.

(B) Speak into the phonograph answers in French to the

five questions below; *do not repeat* questions themselves:

1. M'attendrez-vous?
2. Ont-ils perdu leur argent.
3. No vous défend-il pas de lui parler?
4. Quel age avez-vous?
5. Cette maison-ci, est-elle plus jolie que cette maison-là?

(C) Speak into the phonograph French *translations of the* following English sentences; *do not answer* the questions.

1. What time is it by your watch?
2. My watch is ten minutes fast.
3. Will you reflect before speaking?
4. What day of the month was it yesterday?
5. Have you not bought any vegetables?

GERMAN PHONOGRAPH TEST NO. 5.

The record consists of three parts; total value, 6. In (A) pronunciation alone counts; value, 1.5. In (B) and (C), relevancy, completeness and correctness of sentences spoken into phonograph, have, for the two parts, combined value of 3.00; while pronunciation including sentence accent, has, for the two parts, combined value of 1.5. Each sentence must contain a subject and a predicate, and conform where practicable, to the form of speech customarily employed by the German-speaking people. The conditions are the same as for No. 3, *except* that only twenty minutes will be allowed from the time the paper is given to the student officer until the record is handed in.

(A) Pronounce:

Ablegen, hinausgegangen, Einladung, Tausendmal, Speisezimmer, Töchter, während, geschnittenen, Kellnerin, Gemüse, brachte, draussen, einige, Droschke, Stunde.

(B) Answer in German the following questions:

1. Hat mein Bruder Ihre Einladung angenommen?
2. Ist es Ihnen recht, wenn wier Sie heute abend besuchen?
3. Ist es heute wärmer als gestern?
4. Hat sie den Hut nicht ablegen wollen?
5. Denken Sie nicht, dass dieses Messer sehr stumpf ist?

(C) Translate into German:

1. Do you know why your brother could not accept the invitation?
2. He said that he did not want to go home yet.
3. If it suits you we will take a cab.
4. It is so far that we cannot go on foot.

5. My brother has a new carriage but I have not seen it yet.

SPANISH PHONOGRAPH RECORD NO. 5.

Captain
Lieutenant ..... Rgt. or Corps, ...

The record consists of three parts; total value, 6.0.

In part (A), pronunciation alone counts, value, 1.5.

In parts (B) and (C), relevancy, completeness and correctness of sentences spoken into the phonograph have, for the two parts, combined value of 3.0; while pronunciation, including sentence accent, has for the two parts, combined value of 1.5.

Each sentence spoken into the instrument must contain a subject and predicate and conform, where practicable, to the polite forms of speech customarily employed by the Spanish-speaking people. The conditions for making record No. 5 are the same as those prescribed for record No. 4 *except* that only *20 minutes* will be allowed from the time the paper is handed to the student officer until the record is handed in.

(A) Pronounce:

Roano, acaece, principalmente, toucán, feudar, Guanajay, rociada, variáis, giralda, gutural, proveer, berlina, aeronautas, ingeniero, Noruega.

(B) Speak into the phonograph answers, in Spanish, to the five questions below; *do not repeat* questions themselves:

1. Qué son los nombres de los días de la semana?
2. Cuántos días tiene el mes de abril?
3. A qué hora se levantaba V.?
4. Cuándo salió V. de su país?
5. Qué señala la mayor de las manecillas de un reloj?

(C) Speak into the phonograph Spanish translations of the following English sentences, *do not repeat* the sentences or answer the questions:

1. What day of the month is it?
2. Do you see nobody?
3. Are you putting on your hat?
4. I bought this house for 2000 dollars.
5. Has Peter as many houses as Charles?

EXAMINATIONS

The examination was partly written and partly oral, and counted 70 out of a total value of 100

for the course. It took place on February 12, 1906, and lasted the whole day. Its scope and character are fully shown in the copy of the instructions appearing below:

I. Bring this memorandum to the examination room and read it carefully before beginning work.

II. The examination in French, German and Spanish will be partly written and partly oral.

III. WRITTEN EXAMINATION.

1. The written examination will be held on Monday, February 12, between 1.30 and 6.00 p. m.

This examination will have a value of 30, out of a maximum of 100, in determining relative standing. It will consist of two sheets. No. 1 will contain 50 sentences in English to be translated into French, German or Spanish, as the case may be. No. 2 will contain 25 more English sentences, and, in addition, 15 selected tenses of various French, German or Spanish verbs.

2. After turning in their answers to sheet No. 1, officers may, if they so desire, leave the room before taking and beginning work on sheet No. 2.

All papers must be turned in by 6:00 p. m.

3. The questions will not be copied. The answers or translations corresponding to each question will be written in the blank space immediately following such question on the examination paper. Should such space prove insufficient, any desired corrections may be written upon blank sheets of legal-cap paper and appended to the printed sheets. Whenever the answer to a question is thus supplemented, write in the margin to the left of the original question "see also page—;" and number the additional answer to correspond to the question.

4. On each sheet (printed or additional) write your number in the upper right-hand corner, and number all pages consecutively in the lower right-hand corner. The name of the student officer will not appear on any examination paper.

5. All written matter will be in ink, and the writing must be legible enough to show clearly the spelling, accentuation, etc., intended. Write only on one side of the paper.

6. Where a sentence is susceptible of more than one translation, give any one if they are equally accurate and cor-

rect, otherwise give the translation that accords with the best usage.

7. In writing out the tenses of the Spanish verbs write out the verb forms corresponding to V. and VV., thus making eight forms for each tense. The *subject* pronouns will not be expressed in writing these tenses, except that V. and VV., must be written in every case. In writing out the tenses of the French and the German verbs use the subject pronouns and use only one appropriate pronoun for each verb-form.

Each tense will be written in a column and no abbreviation of any verb-form nor ditto marks will be used, each verb-form being written out in full.

8. Before turning in your paper, read it over carefully and make any necessary corrections or additions; after which, arrange the sheets in proper order and fasten all together at upper left-hand corner only, with one paper fastener.

9. Do not translate words inclosed within marks of parenthesis. Such words merely indicate to the student officers what noun is referred to.

10. The examination questions are clear and precise, and no explanation of their meaning will be given.

IV. ORAL EXAMINATION.

1. This will comprise two parts, each of which will count 20, thus giving the oral examination a total value of 40 in determining standing. Part I of the oral examination will be held commencing at 8:00 a. m., February 12, and will consist in making a phonographic record as stated below. Part II of the oral examination will be held immediately after Part I has been completed in French, German and Spanish, and will consist of an exercise in reading and conversation as indicated below.

2. The phonograph record (Part I of the oral examination) will include three exercises, as follows:

(a) Speaking into the instrument French, German or Spanish sentences read from a printed slip. $3\frac{1}{2}$ minutes will be allowed.

(b) Speaking into the instrument a verbal translation of a slip containing a short piece of English prose. 5 minutes will be allowed.

Slips (a) and (b) will be handed the student officer about ten minutes before his examination begins, but he will not be permitted to write out a translation of slip (b).

(c) Speaking into the instrument without previous preparation French, German or Spanish answers to 6 questions put to the student in the foreign language. 3½ minutes will be allowed.

The value of the above will be: (a), 7; (b), 7; (c), 6; total 20.

3. Part II of the oral examination will also include three exercises, as follows:

(a) Reading aloud a selected piece of French, German, or Spanish. 2 minutes will be allowed.

(b) Answering in French, German, or Spanish, 5 questions put to him in French, German or Spanish, and referring to the selection first read. The answers must be correct and pertinent to the questions but need not conform in other respects to the text of the section. 3 minutes will be allowed.

(c) Answering in French, German, or Spanish, 10 questions put to him in French, German or Spanish and involving the use of words and constructions that have been gone over in the course. 5 minutes will be allowed.

The value of the above will be:—(a), 5; (b), 5; (c), 10; total 20.

Every answer in both the oral examinations must contain a subject and a predicate. The simple replies, "Sí Señor" or "No Señor;" "Quí or Non Monsieur;" "Ja, mein Herr or Nein, mein Herr;" will not be accepted.

V. The certificate will not be attached to the examination papers, but will be turned in separately upon completion of the entire examination, written and oral, and will apply to both. It will be signed with the official signature of the officer.

The examinations took place as scheduled; there was no hitch and they were completed before the time limit allowed.

One officer (the same one that was deficient on practical work) made 38.19924 out of a total of 70 in Spanish. Before he was re-examined he was relieved from duty at the Signal School.

The highest proficiency mark on the examination was 69.85; the lowest proficient 53.3643, and the average, 65.237.

Including both practical work and examination, the highest mark obtained was 99.60731 out of 100; the lowest proficient mark, 83.31737, and the average proficient, 93.42.

REMARKS

Under the trying strain of 4 and 5 hours daily work in the section room, for over five weeks of language study, the student officers of the Signal School deserve great credit for the excellent showing they (with one exception) made. The results obtained by the Assistant Instructors, Captain Francis LeJ. Parker, 12th Cavalry, in Spanish, and Captain O. L. Spaulding, Jr., Artillery Corps, in German, are deserving of the highest praise. They labored incessantly and this recognition of their efficient services is due them and is cordially given.

RECOMMENDATIONS

1. That at least 78 lessons be assigned to Spanish in the Signal School and a similar number to French and German.

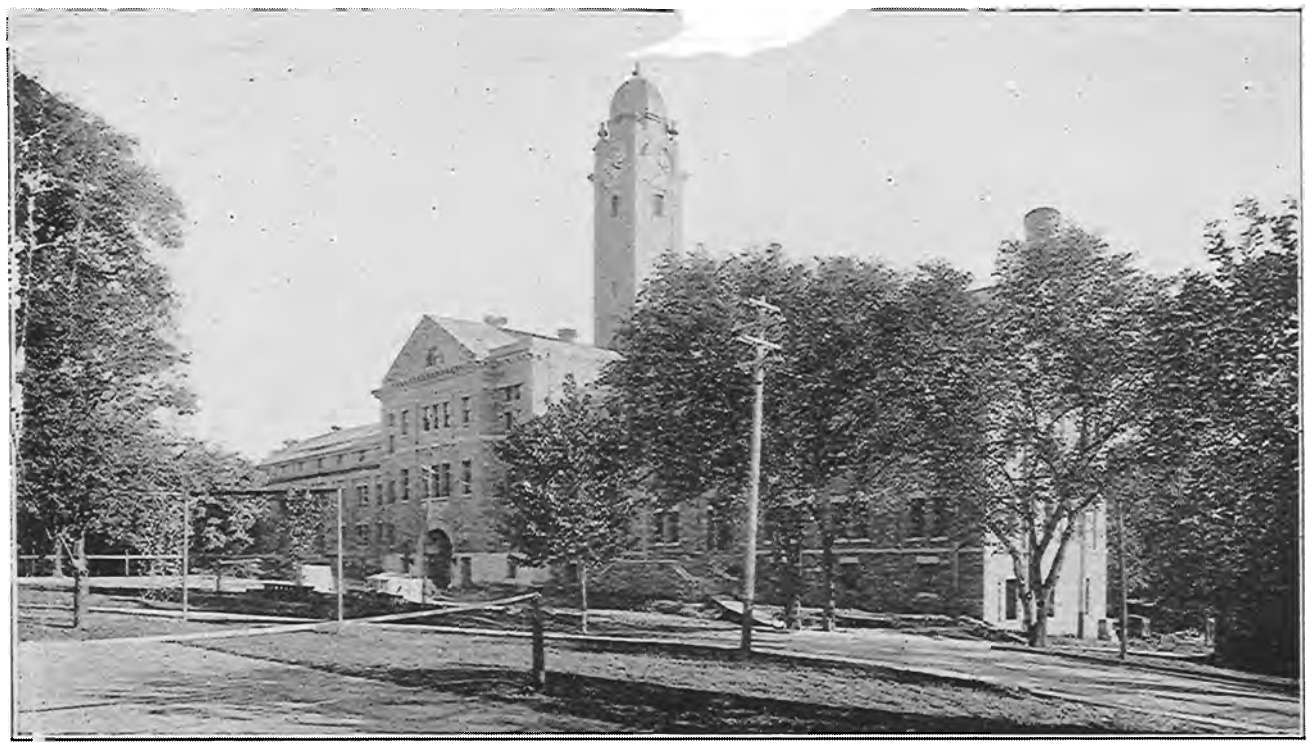
2. That *whole* days be not assigned in future to the Department of Languages, as after the first third of the course the strain is too severe on the student officers and they become "stale."

Very respectfully,

PETER E. TRAUB,
Captain, 13th Cavalry,
Instructor.

LIST OF LESSONS IN SPANISH---Signal School, 1906.

Lectures and Quizzes.	Lesson No.	PRONUNCIATION AND VERB. *Traub.*	INTRODUCCION A LA LENGUA CASTELLANA. *Marion and Des Garennes.*	HOW TO THINK IN SPANISH. *Kroeh.*	FIRST SPANISH BOOK. *Worman.*
Lecture.—Pronunciation	1	To bot., p. 5. } Examples			
" Phonograph	2	" § 44, p. 7. } for			
" Phonograph	3	" § 58, p. 9. } pronunciation			
" Phonograph	4	" bot. p. 11. } only.			
	5		Repaso de Sonidos, p. 5; Ejercicio de Pronunciación, pp. 7, 12, 18, 24, 30, 38, 45, 52, 60, 67, 75, 84, 91, *100. (*Nombres Geográficos).		
	6	General review of pronunciation			
	7	§§ 63-66, incl., and interp. sheet	Lección Primera.—From beginning to Lectura		
Lecture.—The articles and the Subject Personal Pronouns	8	§ 82 (1st conj. only) thro' indicative mood; §84 to subjunctive mood.			
	9	Subj. and imp. moods of § 82 (1st conj.) and of § 84.	Lección Primera.—From Lectura to Ejercicio de Verbos	Sentences pp. 53, 54, for reference only.	
Lecture.—Subject and Verb. Noun and Adjective	10	Review of *Hablar* and §§ 67-71, incl.	Lección Primera.—From Ejercicio de Verbos to end	Sentences pp. 46-49, for reference only.	
	11	§§ 87, 88; omit compound tenses.	Lección Segunda.—Same portions as in lesson 7 above		
Quiz.—*Lecciones Primera y Segunda, Introducción*	12	§§ 89, 90; omit compound tenses.	Lección Segunda.—Same portions as in lesson 8 above		
	13	§§ 91, 92; omit compound tenses.	Lección Segunda.—Same portions as in lesson 9 above		
Lecture.—Demonstratives and Possessives	14	§ 82 (2d conj.); § 93 omitting comp. tenses.	Lección Tercera.—Same portions as in lesson 7 above		
	15	§ 82 (3d conj.); § 94 omitting comp. tenses.	Lección Tercera.—Same portions as in lesson 8 above		
	16	Rev. of *Hablar*; also §§ 72-80 incl. and § 83.	Lección Tersera.—Same portions as in lesson 9 above		
Lecture.—Orthographic Changes in Verb	17	Rev. of Comer; also §§ 72-80 incl. and § 83	Lección Cuarta.—Same portions as in lesson 7 above	From "Objects," p. 31, to "Parts," p. 33.	Lesson 1, pp. 9-11, inclusive.
Quiz.—*Lecciones Tercera y Cuarta, Introducción*	18	Rev. of Vivir; also §§ 72-80 incl. and § 83.	Lección Cuarta.—Same portions as in lesson 8 above	To "Take, etc.," mid. p. 34.	To bottom p. 13.
	19	§ 81.	Lección Cuarta.—Same portions as in lesson 9 above	To "La Pluma," mid. p. 35.	To line 5, p. 16.
Lecture.—Object Personal Pronouns of Third Person	20	§§ 85, 86 and interp. sheet.	Lección Quinta.—Same portions as in lesson 7 above	To "La Casa," p. 36.	To bottom p. 17.
Lecture.—Comparative and Superlative Expressions	21	§§ 87-94, incl. compound tenses only.	Lección Quinta —Same portions as in lesson 8 above	To "Position," p. 36.	To "Aquí", bottom p. 19.
	22	§ 114.	Lección Quinta.—Same portions as in lesson 9 above	Review, pp. 31-36, incl.	To line 4, p. 21.
Lecture.—Object Pers. Pronouns of First and Second Persons	23	§ 115.	Lección Sexta.—Same portions as in lesson 7 above	From "Position," p. 36, to l. 7, p. 38.	To lesson 5, p. 22.
	24	§§ 116-123, incl.	Lección Sexta.—Same portions as in lesson 8 above	To "List of Places," p. 39.	To bottom p. 23.
	25	§ 128.	Lección Sexta.—Same portions as in lesson 9 above	To § 5, p. 40.	To line 5, p. 25.
Lecture.—Position of Personal Pronouns	26	§§ 129-132, incl.	Lección Séptima.—Same portions as in lesson 7 above	To "Direction from Speaker," p. 40.	To lesson 6, p. 26.
Quiz.—*Lecciones Quinta, Sexta y Séptima, Introducción*	27	§ 133.	Lección Séptima.—Same portions as in lesson 8 above	To bot. p. 41; 2d half p. 41 for reference only.	To Dónde, bottom p. 28.
Lecture.—Cardinal, Ordinal and Fractional Numbers	28	§ 134.	Lección Séptima.—Same portions as in lesson 9 above	To "The Opposite Direction," p. 42.	To middle p. 31.
Lecture.—*Ser* and *Estar*. The Personal Accusative	29	§§ 335, 136.	Review of Lecciones Primera y Segunda and quizzes on same	To bot. p. 43.	To line 8, p. 33.
	30	§ 137.	Review of Lección Tercera and quiz on same	Take "Shape," pp. 56-57.	To bottom p. 34.
	31	§ 138.	Review of Lección Cuarta and quiz on same	Take "Colors," pp. 57-58.	To line 4, p. 37.
	32	§ 139.	Review of Lección Quinta and quiz on same	Take "How Things Feel" p. 58.	To "Si", bottom p. 38.
Lecture.—The Object Personal Pronouns	33	§§ 140, 141.	Review of Lección Sexta and quiz on same	Take "Sound," p. 59.	To "Si", bottom p. 40.
Lecture.—Passive Verb and Reflexive Substitute	34	Sec. 142, 143, 144, 146.	Review of Lección Séptima and quiz on same	Take "Taste," pp. 59, 60; pp. 27-30 for reference only.	To lesson 10, p. 43.
Lecture.—Use of Past Tenses of Indicative Mood	35	" 150-155, inclusive	Lección Octava.—Same portions as in lesson 7 above	Take "Smell," p. 60.	To middle p. 46.
Lecture.—Relative and Interrogative Words	36	" 156, 163, 165	Lección Octava.—Same portions as in lesson 8 above	Take "Size," pp. 61, 62.	To bottom p. 47.
	37	" 167, 168.	Lección Octava.—Same portions as in lesson 9 above	From "Ownership," p. 64 to bot. p. 67.	
Lecture.—Irregular Verbs	38	" 157, 172, 175.	Lección Novena.—Same portions as in lesson 7 above	Take "The Hand," pp. 68, 69; only sentences in heavy type.	To line 10, p. 50.
	39	" 158, 176, 177.	Lección Novena.—Same portions as in lesson 8 above	Take "The Fist," pp. 72, 73; only sentences in heavy type.	To lesson 12, p. 52.
Quiz.—*Lecciones Octava y Novena, Introducción*	40	" 159, 178, 196.	Lección Novena.—Same portions as in lesson 9 above	Take "The H'dk'f," p. 75; only sentences in heavy type.	To middle p. 55.
	41	" 160, 192, 193.	Lección Décima.—Same portions as in lesson 7 above	Take "The Penknife." pp. 76, 77; only sentences in heavy type.	To lesson 13, p. 58.
			Lección Décima.—Same portions as in lesson 8 above; omit from l 6, p. 70 to end Lectura, from "Cuantos horas" p. 71 to bot. p. 71.	Take "The Finger," pp. 80, 81; only sentences in heavy type.	To lesson 14, p. 62.
Lecture.—Subj. Mood and use of its tenses	42	" 161, 182, 195.	Lección Décima.—Same portions as in lesson 9 above	Take "The Chair," pp. 82. 83; only sentences in heavy type.	To lesson 15, p. 65.
	43	" 184, 185.	Lección Undécima.—Same portions as in lesson 7 above	Take "The Arm," etc., pp. 84, 85; only sentences in heavy type.	To middle p. 67.
	44	" 186, 187.	Lección Undécima.—Same portions as in lesson 8 above; omit from mid. p. 78 to end Lectura, from mid 80 to end Conversación	Take "The Hands," p. 86; only sentences in heavy type.	To lesson 16, p. 69.
Quiz.—*Lecciones Décima y Undécima, Introducción*	45	" 188, 189.	Lección Undécima.—Same portions as in lesson 9 above	Take "The Drawer," pp. 88, 89; only sentences in heavy type.	To middle p. 71.
	46	" 190, 191.	Lección Duodécima.—Same portions as in lesson 7 above	Take "A Sheet of Paper," pp. 91,92; only sentences in heavy type.	To bottom p. 73.
			Lección Duodécima.—Same portions as in lesson 8 above; omit from top p. 87 to end Lectura and last eight lines Conversación	Take "A Package," pp. 97, 98; only sentences in heavy type.	To line 12, p. 76.
	47	" 197, 199.			
	48	" 200, 202.	Lección Duodécima.—Same portions as in lesson 9 above.	Take "The Door", pp. 104, 105, only sentences in heavy type	To bottom p. 79.
	49		Lección Décima-Tercia.—Same portions as in lesson 7 above		To "VeV.", near bot. p. 82.
	50		Lección Décima-Tercia.—Same portions as in lesson 8 above; omit l 5, p. 95, to end Lectura and l 8 p. 97, to end Conversación		To middle p. 86.
	51		Lección Décima-Tercera.—Same portions as in lesson 9 above		To middle p. 89.
	52		Lección Décima-Cuarta.—Same portions as in lesson 7 above		To "Qué", bottom p. 92.
	53	General Review of Verbs	Lección Décima-Cuarta.—Same portions as in lesson 8 above; omit l 8 p. 104 to end Lectura and last 8 l Conversación pp. 105-6		To end p. 95.
Quiz.—*Lecciones Duodécima, Décima-Tercia y Décima-Cuarta*	54		Lección Décima-Cuarta.—Same portions as in lesson 9 above		
	55		Review of Lecciones Octava y Novena and quizzes on same		
	56		Review of Lecciones Décima y Undécima and quizzes on same		



The U. S. Infantry and Cavalry School, U. S. Signal School, and U. S. Staff College.
Grant Hall in the center, Sherman Hall on the left and Sheridan Hall on the right.