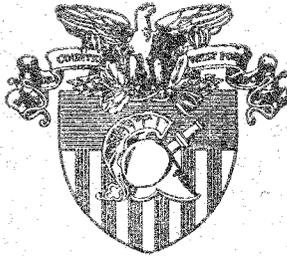


ANNUAL REPORT
OF THE
SUPERINTENDENT



UNITED STATES
MILITARY ACADEMY

1919

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Headquarters United States Military Academy,
West Point, New York, June 12, 1919.

From: The Superintendent, U. S. M. A.
To: The Adjutant General of the Army.
Subject: Annual Report of the Superintendent, U. S. M. A.

1. The last annual report of the Superintendent was dated November 15, 1918, and contained the more important and essential facts connected with the administration of the Academy during the previous academic year and up to that date. As therein stated, efforts at that time were being made to fill existing vacancies in the Corps of Cadets to the full accommodating capacity of the institution. Owing to the early graduation of three classes in 1918, the last two (2d and 3d) on November 1st, there was left on November 2 only the 4th class, the class that entered in June of that year containing 425 members. The total number of appointees after the early graduations of November 1, was 337. These appointees were admitted without the usual mental tests and with the expectation and promise that they would be graduated the following June after having taken a greatly modified course of instruction at the Academy. Owing to the termination of hostilities on November 11, the third class, consisting of 280 members, which had gone out on November 1, was returned to the Academy on December 1 to remain under instruction until June of this year: this class returned to the Academy on December 1 as commissioned officers unassigned. Concomitantly with the return of the 3d Class to the Academy and with the decision made as to its final departure, it was directed by the War Department that the courses of study and the exercises, arranged with the view of graduating the class which entered in June, 1918, in June, 1920, and the class which entered in November, 1918, in June, 1921. In accordance with the above indicated instructions the class of student officers (Academy 3d Class) left the Academy a second time on June 11, receiving modified diplomas testifying to their accomplishments at the Academy. The other two classes which entered (one in June and the other in November, 1918) are being given greatly modified and abridged courses with the view of graduating them in June, 1920 and 1921, respectively.

After the above stated decision was made in December last with regard to the dates of graduation of the two cadet classes then in the Academy, and also because of the termination of hostilities, an unusual number of resignations were tendered by the members of these classes, 24 resigning from the class admitted in June and 85 from that entering after November 1. In the case of the cadets who were admitted after November 1 no examinations were held until the following March. Due to the fact that these appointees were suddenly selected, allowed practically no time for preparation of any sort, admitted without the usual mental tests, and then obliged to undertake at the same time rather intensive training in both academic studies and military exercises, many of them failed to meet the reasonable requirements set at this March examination. At this March examination 73 of this class failed to reach the required standard. Many of the resignations, too, tendered by this class were due to the conclusion of the men that they were not prepared to master the course. The other cadet class which had been admitted in June also labored under serious disadvantages owing to the excitement attending changes in dates successively fixed for their graduation and the necessary modifications of their work accompanying these changes. After the June examinations, and at the time of my relief as Superintendent, there remained in the June class 288 cadets and in the November class 139 cadets.

From the forgoing statement of the academic situations between September 1, 1918, and June 12, 1919, it is evident that the instruction was carried on under most unfavorable conditions. These conditions involved not only the disruption of the courses of study but included frequent reliefs in the personnel of instructors, as well as their transfer from one department to another, thus requiring of them work for which they had little time for advanced preparation. The heads of departments met these most unusual and unsatisfactory conditions with the most zealous and praiseworthy efforts and both they and their instructors deserve the highest commendation for entirely unselfish, though sometimes unsatisfactory, labor in trying to accomplish the best results and the highest benefit for the classes.

As soon as the Armistice indicated a termination of hostilities the Academic Board began the consideration of ways and means to return the Academy to more normal, and if possible, more satisfactory conditions, due considerations being had for the lessons of the war. A fully considered and carefully prepared report by the Academic Board, discussing the relative advantages and disadvantages of three and four year courses was submitted to the War Department on December 13, 1918, with recommen-

dation thereon. The recommendations of the board were not adopted and on May 12, 1919, an order was issued by the War Department prescribing "that the course of instruction at the Military Academy be fixed for three years" and the Superintendent was directed to have the Academic Board submit as soon as possible a revised course of study to embrace three years. The program for the new course of three years had not been completed at the time of my relief, June 12.

In submitting this my final report as Superintendent of the Academy and probably taking my last official action with reference to the institution, after being connected with it for more than one-third of its existence, and at the end of the most unusual and eventful year in its history, and at the beginning of a new academic policy, if not desirable, it is certainly permissible to include a brief reference to the purposes, methods and accomplishments of the Academy up to the present time; for it may be safely assumed that the characteristics which have carried an institution through an unbroken existence of one hundred and seventeen years are worthy of record and also of consideration in connection with any similar purposes that may be attempted elsewhere, such as determining the principles which insure the best results in education, general or special.

The claims upon which the Academy's honor and distinction rest must of necessity be curtailed to the extreme limit in this report.

The purpose of the Military Academy stated in the briefest possible terms has been training and development rather than education alone, by acquisition of knowledge however varied; training and development of the rational faculties to the fullest extent through concentration of effort and thoroughness in accomplishment, at the same time requiring and engendering obedience and subordination to proper authority, thus moulding character through consistent, thorough discipline, both mental and physical; the end hoped for being men of character and power rather than merely men of knowledge and information, as desirable as these latter possessions are admitted to be.

Washington, in the last letter that he wrote, says that he "ever" considered the establishment of a military academy as of "primary importance to this country, and while I was in the chair of the government I omitted no proper opportunity of recommending it, etc." Washington favored West Point as the most appropriate site for such an institution and as early as 1780 and 1781, he was instrumental in having military instruction given at this place. The Military Academy became the successor of this beginning; it was instituted and has continued for the purpose of educating professional soldiers and it is accordingly fitting

that brief reference be made first to its record in this respect. Whether the accomplishments of the Military Academy support and justify fully its limited purposes and methods might rest entirely upon the records and achievements of graduates in military activities alone, but to all who agree with those able men who shaped and continued the West Point policy, viz: that the main and superior object of all education is training, discipline and development, rather than the simple acquisition of knowledge, the success of the academy's graduates in other than military lines may be also appropriately included in viewing the academy's returns to the country and the success of its methods.

Although the Academy was founded in 1802, it did not take final, definite form until 1817; until this latter date it was without consistent and well defined courses of study and at the beginning of the war of 1812, only 65 of its graduates were in service. A number of these young men did excellent and invaluable work in the construction of defensive works at important seaports and won for themselves great distinction at the time. For such works, on the defenses of New York, West Point's very first graduate was voted "a benefactor of the city of New York" and his portrait placed in the city hall. This same first graduate performed many duties of great importance. Of another one of those early graduates General Scott said: "that in my opinion and perhaps in that of all the army he combined more genius and *military science* with high courage, than any other officer who participated in the war of 1812," a most extraordinary and gratifying compliment. Still another of those early graduates who was engaged in this work, became two years afterwards, in 1817, the great superintendent and father of the Academy, General Thayer. Equal distinction and recognition came to many other of these early graduates, and of those serving in the field one-fourth were killed or wounded.

The experiences of the war of 1812, were not without instruction to the nation, and the Military Academy thereafter received more considerate treatment. Almost from the beginning of his administration as Superintendent, General Thayer had, for several years, the earnest and enlightened support of John C. Calhoun, the Secretary of War, and in a short time the framework of the academic system which has prevailed for over a century was firmly established.

At the breaking out of the Mexican war in 1846, there were slightly above 500 graduates of the Academy in the service and nearly an equal number in civil life, many of whom tendered their services to the War Department. With the exception of possessing a greater number of

educated officers, the country was no better prepared for war in 1846, than it was in 1812, but in comparing the operations and results of the two wars, the effects of the West Point education were unmistakable.

Very nearly three-fourths of the line officers in the army at the opening of this war were graduates and nearly all of the officers of the staff corps. The brilliancy of the campaigns which brought this war to an early and victorious termination testifies to the perfection with which the operations were planned and carried out, and therefore to the skill of the regimental officers as well as to the soldierly ability of the commanding generals.

In addition to this evidence we have the direct and positive assertions of the then Secretary of War and of Generals Scott and Taylor and other commanders, that our "unexampled career of success" in this war was contributed to in an eminent degree by the graduates of the Military Academy.

As is well known General Scott, many years after the war, after abundant time for reflection, gave it as his fixed opinion "that but for the graduates of West Point, the war between the United States and Mexico, might, and probably would have lasted four or five years with, in its first half, more defeats than victories falling to our share, whereas in less than two campaigns we conquered a great country and a peace without the loss of a single battle or skirmish."

The instances of gallantry, of professional skill and technical ability displayed by graduates in this war were entirely too numerous for special reference, but it is well known that the Mexican War gave the Military Academy a great reputation. In this war over one-fourth of the graduates in the service were killed or wounded.

Fourteen years after the close of the Mexican War there opened the greatest war in the world's history up to that time. Up to that date there existed no retirement list for officers of the army and the senior ranking officers of the army were not removed from the active list for age or incapacity. Partly due to this fact and to others not pertinent to mention here, and notwithstanding the brilliant record of the graduates in the Mexican War, notwithstanding the commendation that had been bestowed upon the Academy graduates, notwithstanding the continual growth of the Academy in public favor up to the beginning of our civil war only one graduate of the Military Academy had been appointed to the full grade of brigadier general in the line and that one declined the appointment.

At the opening of this war, like all of our country's wars, military re-

quirements were obliged to make compromises with political considerations, but within a year the magnitude of the struggle which had begun was recognized and such compromises were largely avoided or made as innocuous to military success as possible. Bearing the facts and the necessity just mentioned in mind, it will sufficiently demonstrate the part played by graduates in this great war to state a few of the striking results brought out thereby.

While there was not a single graduate of the grade of general officer in the line of the army in January, 1861, in January, 1865, the names of graduates alone appear on this list. This position had been made the reward for successful command in the field.

"Every important battle of the war was commanded on one or both sides by graduates, generally both." "In a list of sixty of the more important battles and campaigns all but five were commanded on both sides by graduates. Of the five exceptions, the army on the one side was commanded by a graduate, and in four of these exceptions he was victorious." At the end of the war all the armies on both sides were commanded by graduates, nearly all of the corps and a majority of the divisions and staff corps and supply organizations as well as many of the brigades.

Of the graduates in service on the Federal side one-third reached the General's grade and over one-half on the Confederate side. Those graduates in service on both sides who did not receive the General's star, were performing services indispensable to their armies. One-third of all West Point graduates in the war were either killed or wounded.

The great national and international military distinction made by many of the graduates in this war greatly increased the prestige of West Point and made world wide its reputation, and at the same time justified the academic and military methods of the institution.

It was more than thirty years after the close of the Civil War when the Spanish War broke out, followed by the Philippine Insurrection and the invasion of China. During these troubles the principal commands were held by nongraduates who were then in the senior position in the Regular Army. The graduates of the Academy were subordinate commanders, and everywhere met the requirements of educated and skilled soldiers.

It is doubtful whether the American Army, officers and enlisted men, have ever received a higher, more eloquent or more deserved compliment than that bestowed by the President through the Secretary of War in General Orders, No. 66, July 4, 1902, upon the service rendered by them

up to that date in Cuba and in the Philippines. This order should be consulted by all who would know the great achievements of the army in those troubles.

The graduates of West Point were full participants in this service and shared in the glory and the praise so justly bestowed; they always and everywhere maintained and in many cases, too numerous to mention, added to the reputation of their Alma Mater.

From the early days of the Academy to near the end of the 19th century the Regular Army fought a pioneer war with the Indians in the northwest, in Florida, and in the great western part of the country from the Canadian line to the borders of Mexico.

This service carried forward the borders of civilization and made possible the wonderful growth of our country. But generally it involved a life of isolation and dreary monotony, broken by periods of the most trying service and intense hardship. In this service are recorded some of the most astonishing military performances on record, involving endurance, determination, courage and high sense of duty. For forty years prior to the Civil War the great majority of the officers of the Regular Army were graduates and a very large proportion of them since that date, so that the graduates fully share the honors of this arduous, valuable, heroic, distinguished and almost forgotten service.

Even in this extremely brief summary of the achievements of the Academy's sons during the first century of its existence it would be inexcusable not to include some reference to the many important and distinguished services rendered by graduates in other than purely military lines. Under this heading we may place services of graduates as explorers, surveyors, builders, etc.

As is well known, West Point antedated the first technical school in this country, the Rensselaer Polytechnic, by twenty-three years, and these two institutions, as stated by President Gilman of the Johns Hopkins, "were the only established places in this country for good technical instruction so late as 1847," when the Sheffield Scientific School was established. In considering the honors due the Academy and in reckoning the achievements of our technically educated graduates we should not forget the profound influence of the Academy as an *example* nor the great influence of our graduates as *teachers* in many institutions which followed the Academy, besides their services now about to be mentioned.

As early as 1820, there were commenced explorations of the country previously unknown between the Mississippi and the Pacific Ocean, which explorations were continued almost uninterruptedly until the first trans-

pacific railroad was finished in 1868. Engaged upon these explorations and services were scores and scores of graduates of the Academy. Space does not permit the enumeration of these men by name. The graduates of the Academy for the larger portion of this time possessed a monopoly of the knowledge necessary for these purposes. As has been truthfully stated, a modern railroad map of the west shows that graduates "blazed the way for the locomotive." In fact, nine-tenths of the recorded geographic knowledge of the great west prior to 1870 was due to the work of the army, almost entirely performed or directed by graduates.

In the great international boundary surveys, the surveys of the Great Lakes, the latter being one of the most refined geodetic surveys of the world, graduates bore the responsibility and were the principal participants in the work.

Likewise, a graduate of the Academy in 1843 was called upon to reorganize the important coast survey and was its distinguished head for twenty-four years. At his death the Secretary of the Treasury wrote: "No man within the present generation was more widely known in the practical walks of science * * * * * and his work has won the approbation of the leading learned bodies of the world, among whom his name has long been held in honor." This graduate made the survey one of the most renowned of the world.

Besides the surveys just mentioned, many other less accurate surveys were conducted by army officers, covering large areas of territory in the west, to the great benefit of the people and government. In 1878, the Chief of Engineers, writing to the Secretary of War, truthfully referred to these surveys in the following words: "Refined methods of topographical surveys were first used in the United States by army officers in the performance of their varied duties, they were among the first to apply the refined methods of geodetic surveys; that from the time the government had territories to explore, the exploration has been made mainly by them; that a large portion of the information contained in all the maps of the United States west of the Mississippi is due to their labors."

Besides the work above specified, the government actually loaned the graduates of the Academy for many other classes of work. In the construction of the first railroad in America, the B. & O., eight graduates of the Academy were employed. Graduates of the Academy were the chief engineers of at least a dozen of the earlier railroads in the eastern United States. One of them planned the Chesapeake & Ohio Canal and

was president of the company. Another graduate in 1842 became the consulting engineer of the Russian government, planned and equipped the Moscow & St. Petersburg Railroad and was consulting engineer of the Neva bridge.

The first railroad in Cuba and also the first in Mexico were built by graduates; several graduates were employed in completing the Panama Railroad. In the planning and operation of nearly all the railroads east of the Mississippi the services of graduates were largely employed.

Similarly in municipal engineering, especially in providing cities with water, in constructing public buildings, parks and docks the services of graduates have been widely made use of, to the benefit of the country and distinction of the officers.

As an illustration we might note their services in connection with the Croton water supply of New York, Philadelphia water department, the supply of Washington city, the hygienic works in Memphis, in Cuba and many other places. Many public structures such as the Washington Monument, the dome of the Capitol and a large number of famous light-houses testify to the competency of the graduates. The vast extent and the almost inestimable value to the country of the river and harbor works of the graduates can be only barely alluded to.

In strictly civil pursuits twenty per cent of the graduates who left the army for civil life have attained what might be called distinction. Among this number may be cited two Presidents, three Presidential and two Vice-Presidential candidates, four members of the Cabinet of U. S., one ambassador, fourteen ministers plenipotentiary, twelve consuls general and consuls, twenty-four members of congress, seventeen governors of States or territories, forty-six presidents of colleges and universities, fourteen Regents and Chancellors and eighty-seven presidents of railroads and corporations.

Two graduates achieved great distinction as practical astronomers, each having charge of the largest telescope of his time, two others became noted geologists, three distinguished physicians and half dozen distinguished clergymen, one a Bishop in the Episcopal Church.

The graduates of the Academy have contributed a variety of text books to the colleges and schools of the country, many of which met with wide use. While the West Point curriculum was never intended to develop literary production, it can be confidently claimed that the writings of graduates, from the autobiographies of Grant and Sherman to the reports of our graduates on the late war, all possess the characteristics of good English in their brevity, directness and lucidity.

A great American bibliographer has said that though our graduates are not trained as writers "yet in the latter capacities they have left a mark upon the nineteenth century highly honorable to their Alma Mater and themselves." As he states, during the first century of the Academy's life 4120 men had graduated and an incomplete bibliography of their writings shows 16,000 titles. Three graduates between 1865 and 1870, in unoccupied moments, have with considerable success entered the field of fiction. Some of these productions have reached the highest standard of good literature.

It is not inappropriate here to refer to an investigation of the subject of the value of college education as a factor of success in life by Dr. J. H. Finley, then President of the College of New York City. He prepared a table giving the percentage of success for the total number of graduates from several institutions through various periods. His list contained eighteen of our leading universities and colleges as well as West Point and Annapolis. The estimate for West Point and Annapolis covered the last fifty years of the nineteenth century. His analysis gave West Point the highest percentage of success. While recognizing that this conclusion must of necessity involve some uncertain assumptions, yet as it is the conclusion of an able and unprejudiced investigator, based upon the best available means of comparison, it may well be claimed as an honorable distinction for West Point.

This mere skeleton outline which suggests only in very small part the full results that have followed from the Academy's teaching during the first century of its existence, is thought fully to justify the great reputation of the Academy as well as strongly to support the theory of education here adopted and the methods pursued in accordance therewith.

We may add much to this convincing record to append here the conclusion of that alert, observing, able, widely experienced statesman, Theodore Roosevelt, with regard to the Academy, at the Centennial celebration of the Academy in 1902. He said: "This institution has completed its first hundred years of life. During that century no other educational institution in the land has contributed as many names as West Point has contributed to the honor roll of the nation's greatest citizens. * * * * I claim to be a historian, and I speak simply in the spirit of one, simply as a reciter of facts, when I say what I have said. And more than that, not merely has West Point contributed a greater number of the men who stand highest on the nation's honor roll, but I think, beyond question, that, taken as a whole, the average graduate of West Point during this hundred years has given a greater sum of service

to the country through his life than has the average graduate of any other institution in this broad land."

Since this opinion was passed on West Point's work seventeen years have elapsed, there have been slight military troubles in Cuba and in the Philippines, more serious ones in Mexico. These have all been met and disposed of by the army and the latter one with the assistance of the National Guard, in the most creditable manner with barely one or two exceptional instances. During this interval too, the work of army officers other than strictly military has been continued as in the last century; indeed the civil duties of army officers have been more numerous and varied than ever before. They have served with great credit to themselves and honor to the country as governors of provinces, mayors of cities, superintendents of education, collectors of revenue, civil engineers and in many other capacities. The river and harbor works have been continued. The interval, too, includes one of the greatest and most successful pieces of engineering construction in the history of the world, which was almost from its beginning conducted and carried to completion by army officers, the Panama Canal.

Finally, the World War came and our country has had an experience, the like of which has never before been known in its history. The Regular Army and the Academy graduates in particular are said to have had their way to the fullest extent in this great crisis. This is not strictly true, but they were in the main the directing forces in the great undertaking and readjustment by which it was attempted to convert four millions of civilians into soldiers, and this without preliminary preparation for the great undertaking. For the lack of such preparation as could have been made before the war, neither the graduates nor the army are responsible. Neither are they responsible for the fact that the regular officers were not numerous enough to do thoroughly what they often saw was desirable and necessary, under conditions for which they were not responsible.

An attempt quickly to convert a one-room railway station into the New York Grand Central Terminal without preliminary preparation, without abundant material and a large personnel would certainly result in confusion, loss of luggage and production of ill temper.

But notwithstanding all the defects of haste, lack of early preparation, lack of personnel and in some cases lack of competency, the great undertaking, the greatest of its kind in the world's history, was accomplished with creditable success; this cannot be denied and was fully demonstrated by our part in bringing the great war to a victorious conclusion.

It is impossible to conceive what would have happened had there been no graduates of the Academy, no Regular Army officers in the spring of 1917. If these officers are to be blamed and criticized for the friction, the loose wheels and the broken cogs in the war machine, they should also have the credit for the marvels accomplished in spite of the defects; which accomplishments many think are equal to, or greater than any in our previous history.

Viewing the great war in the light of all the conditions, we may justly claim that our graduates have been true to the spirit of West Point and its motto, Duty, Honor, Country, and we may properly add thereto, *sacrifice*, for at present the indications are that a greater proportion of the graduates of the Academy have made the *supreme sacrifice* than any other class of officers engaged in the great war.

At the close of the nineteenth century Dr. E. S. Holden, one of the ablest graduates of the Academy, and greatly distinguished in many directions, after editing and preparing for publication the records of all graduates up to that time, wrote as follows: "These records prove in a most convincing way the splendid efficiency of the United States Military Academy as a training school for the American Army and demonstrate that the principles upon which it has been conducted are sound and sufficient and that for a period of nearly one hundred years they have been carried out by competent and faithful hands. The country at large may well be proud of the records here presented and no graduate can fail to feel a new pride in and gratitude to his Alma Mater in perusing them."

With full and accurate knowledge of the Academy's work and of the achievements of its graduates during the twenty years that have elapsed since the above was written, there is no shadow of doubt that the conclusions of Dr. Holden apply with equal fitness at the present time. West Point has proved itself of incalculable value to the country and its alumni may well be proud of its glorious record.

PERSONNEL OF THE ACADEMY.

Between the dates of the present and my last former report the changes in the personnel of the Academy were numerous, and changes in the duty of many of the officers who remained were found necessary. These changes were so numerous that their specification is deemed unnecessary.

The more important changes in the personnel are indicated by the following: The filling of the vacancy in the office of the Commandant of Cadets, made by the relief in August of Colonel Guy V. Henry, by the detail of Colonel Jens Bugge, who assumed this office on November 8,

1918; the detail of Colonel Raymond F. Fowler, as Professor of Practical Military Engineering, on November 16, the position having been successively filled by Colonel George R. Goethals and Colonel R. T. Coiner since the relief of Colonel Markham in August last; the appointment of the Reverend Clayton E. Wheat as Chaplain of the Academy in succession to the Rev. H. Percy Silver who resigned on October 1; the detail of Colonel S. R. Jones (retired) as Quartermaster of the Post and Academy and constructing officer, he assuming the duties on November 11 upon the relief of Colonel Timberlake, and the resumption of those duties by Colonel Timberlake on March 31, 1919.

BUILDINGS.

My report of last year of date November 15, together with the accompanying report of the constructing quartermaster give full information with regard to the progress and condition of building operations. The items for new construction contained in the appropriation bill for 1918 and 1919 are continued in the present appropriation bill for the fiscal year closing June 30, 1920.

I would here refer to my report of last year, page 17, and again call attention to the desirability of giving further consideration to the building program projected for West Point in connection with our future military policy and organization; these latter (policy and organization) are not determined and the building program is accordingly without definite basis. Besides the reasons given in the foregoing part of this report for expecting a deterioration in the product of the Academy under existing conditions, if such conditions continue, it is now evident that under the modern developments of war the topographical features of West Point render it exceedingly unsuitable for much of the purely military instruction which it is desired to give in the intervals between purely academic duties during the academic terms. The terrain in reasonable distance of barracks is entirely unfit for the performance of many of the desired exercises, and equally so for cadets to derive the maximum benefit from the observance of such exercises as can be partially performed. This lack of facility for practical military exercises will be increasingly felt as this branch of instruction increases relatively to the purely academic work. The effort to overcome this lack has led to the necessity for going to considerable distances from barracks for drill purposes and this necessity, as already stated, has left little or no time unoccupied during the daily intervals between academic exercises in which cadets are supposed to have some recreation periods.

West Point, during the first century of its existence, with a small student body and under the then existing conditions, met admirably the purpose for which it was intended. Under the present conditions, with the limited topographical features of West Point, with largely increased numbers and the modern development in the Art and Science of War, it is not thought that both the general education and the intermediate military education of officers can be given cadets with results anywhere nearly as satisfactory as in the past in the same time and especially not in a shortened time. It is accordingly only exercising a reasonable foresight to reconsider the building program for West Point in connection with the military policy yet to be adopted. I am fully satisfied and firmly convinced that the interests of military education will be better served by establishing one or more other schools on West Point lines than by trying to operate the West Point plant beyond its efficient capacity. I would strongly recommend that with the completion of the south wing of barracks, now under construction, that no further barrack provision be made for enlarging the Corps. With this completion and with two to a room there can be accommodated 900 cadets, which number is the extreme limit that should be assembled in this school; if the military policy adopted for the future requires that a greater number be kept under instruction other schools should be established.

If the requirements for admission to the Academy are retained as at present and the course of instruction limited to three years I recommend that during the academic terms, from September 1 to May 31, no drills be had other than those necessary for purely ceremonial purposes. That all other purely military drills and instruction be confined to the three periods of camp life, each embracing three months. This recommendation is based upon the belief that some of the obstacles which exist, and which are set forth in this report, to the best training, development and general education of cadets can thereby be removed. It is recognized that there would result some loss in the elementary military knowledge that might be given cadets, but every competent junior subaltern, in ordinary times and under a proper superior, can readily make good this loss and has ample opportunity for that purpose, whereas conditions and opportunities for mental discipline are never likely to be so good as at West Point.

PHYSICAL TRAINING.

The instruction in this department, under the head thereof, Colonel H. J. Koehler, and his assistants has been conducted with the usual success and satisfaction. Colonel Koehler's sixteen months' extraordinary ar-

duous service at the various training camps of the country between May, 1917, and September, 1918, enabled him to apply and try out his methods under all sorts of conditions. During this time he gave instruction to over 200,000 men: his success in accomplishing results is universally testified to both in a disciplinary and physical way.

This remarkable success of Colonel Koehler has given to others as well as to himself increased confidence and satisfaction in his important work at the Academy. This officer has now served the Academy for more than a full generation in a position which makes unusual drain upon physical strength. It would be only a just reward and merited recognition could he be given permanently the rank bestowed upon him for his distinguished service during the war emergency.

DEPARTMENT OF TACTICS.

The report of the Commandant of Cadets, Colonel Bugge, who assumed command on November 8, 1918, is given in full below. With some of his views and conclusions I do not concur. Upon the assumption of his duties here as Commandant of Cadets the subject of the military discipline of the Corps, which is especially intrusted to the Superintendent and Commandant, was fully considered and discussed, particularly with reference to the control, instruction, and discipline of the newer cadets by those of longer standing. The policy in this regard that was in force, as stated in my last annual report, was fully explained to the Commandant and met with his full endorsement. In pursuance of and as an aid in carrying out this policy he suggested that frequent "talks" to the Corps be given by himself that the desires and aims of the authorities might be better understood by the Corps. This suggestion I thought excellent and fully endorsed, but it had not been long in practice until it was discovered that the Commandant and myself while agreeing as to the general results desired, differed considerably as to the details of how these results should be accomplished: some acts that he would permit and encourage were considered by me as perpetuating the practices that I thought should be abolished. In other words, we found that our ideas of improper treatment, hazing and discipline of new cadets differed considerably. As stated in the Commandant's report, hazing developed in a short time after the admission of the November Class: then a fuller understanding between the Commandant and myself was sought as to actions forbidden and permissible, and stringent orders, as he states, were issued in connection therewith. The Commandant was authorized to continue his advisory talks to the Corps. The Commandant now reports, as has been

frequently reported before, that we succeeded in practically abolishing hazing: in this conclusion I do not concur. Certain actions on the part of the older cadets as late as June 3d, which I personally observed, convince me that this conclusion of the Commandant is not justified.

I refer to this matter at some length as showing that there must be the fullest possible understanding as well as the fullest possible accord between the Superintendent and the Commandant, down to the junior tactical officer, with regard to these improper and undesirable practices in order to suppress them; then and only then can it be done. The greatest possible loyalty of the Tactical Department to the Superintendent cannot accomplish the result unless the officers of that department are in full sympathy with his aims, and in full agreement, without reservation, with his views as to what constitutes improper practices. It would also be most effectual in producing and maintaining the desired disciplinary attitude of the Corps of Cadets, if the heads of all the other departments were kept fully informed of the actions taken by the Superintendent and Commandant toward this end. These department heads are all in favor of suppressing "hazing", establishing the proper disciplinary regulations and compelling obedience thereto, but the assistance which they could render in disciplinary control outside the section-room has been availed of to only a very slight extent. There are many questions of discipline, custom, and tradition, which the heads of departments, who are permanently here and who are familiar with the past, are far more competent to decide than are the Superintendent and Commandant whose tours of duty are short and who are not familiar with the continuous past and its developments. If the full influence residing in the heads of other departments, were brought to the assistance of the Superintendent and Commandant in every way that it could be made available, there would soon be created a feeling throughout the institution which would eliminate "hazing" or any other really discreditable or harmful practice. All officers of the Academy, as well as those of the Tactical Department, should be required to carry out strictly all the disciplinary regulations of the Academy, and to that end they should be fully informed in regard to these regulations, their origin, purpose and necessity; this is readily practicable by making avail of the influence of the heads of departments. These heads of departments could demand that their assistants observe the proper attitude toward all disciplinary matters and such as failed in this respect should be relieved. As stated in my report of last year, among the reasons for the persistent survival of improper practices here, is the fact that there has not only been tolerance but often encourage-

ment from several sources. By action along the lines suggested there could soon be created an "atmosphere" at the institution entirely opposed to such practices instead of one that partially countenanced, or in some respects favored them.

The regulations of the Academy and custom have authorized the disciplinary control of the cadets outside of academic exercises by the Superintendent and Commandant alone, but the Superintendent could readily bring the means suggested to his assistance. It would undoubtedly result in general benefit if the knowledge and experience of the other department heads were more frequently called to the consideration of the discipline and duties of the Tactical Department.

The views of the Commandant as to the variety and extent of the information and military training that each cadet should acquire in his department are admirable, but, in my opinion, the fully satisfactory accomplishment that he aims at, will require more time than can be given the department with due regard to the general educational interest of the cadet; however, the standard that he proposes is one which should be approached as nearly as practicable with proper consideration of other departments.

The recommendations of the Commandant at the close of his report all meet my approval except the second; the report is as follows:

* * * * *

1. On November 1st two classes were graduated from the institution, one having been here two years, the other only one.

When the armistice was signed on the 11th of November, the necessity for officers ceased to be so great, and the War Department therefore decided to return one of the classes for another year of training. The result was that we had one class of Student Officers, which was kept entirely separate from the Corps of Cadets. This class was organized into four provisional companies, and their drills and instruction were separately conducted.

Due to the fact that all the older cadets were suddenly graduated, leaving only men who had just entered the Academy present in the Corps, the custom was instituted of weekly talks to the Corps by the Commandant of Cadets. In these there was set forth the customs and traditions that should be preserved and perpetuated.

Some cases of hazing occurred during the early part of the year, and stringent orders were issued by the Superintendent with respect to such practices. With the aid of the Corps of Cadets this practice was practically abolished, and I wish to compliment the present Fourth Class "A" on the very excellent spirit that they showed in trying to eradicate the undesirable practices, and preserve the good. This office has taken the position that if the Corps of Cadets disapproves of a certain practice, it

will be discontinued; and if the cadets understand and know what the authorities desire, they will cooperate and carry these desires into effect.

Considering conditions, the discipline of the Corps has been excellent. The practice has been to constantly increase the responsibility placed on the cadets by urging them to adopt certain ideals, for the keeping of which they are responsible. This practice will be continued.

There has been a constant effort throughout the year to develop team work between the cadets and the Tactical Department. It is evident that if both cadets and officers have the same aims, and work towards the same end, there will be the maximum result. Members of the Tactical Department have been cautioned to look upon themselves as advisers to the Corps of Cadets, and to be always ready to point the way where an improvement can be made. Tactical officers are authorized not to necessarily report a man for every offense, but to use their judgment so as to secure the best results. The ideal situation would be when it would not be necessary to report any one. The only offenses for which there should be reports are those resulting from carelessness, and disregard of regulations.

For the first time in the history of the institution a course in Minor Tactics has been devised, and with very gratifying results. A system of lectures on this very important subject was prepared, and given both to Fourth Class "A" cadets and the Student Officers. From these a manuscript has been completed. Permission has already been requested from the War Department for its publication, and request has also been made to have it adopted as a text book for the Corps of Cadets. This instruction has been limited to what is thought absolutely necessary and basic for a man who is to train soldiers. The system is simple and makes use of the one-sided war game, wherein the principles are all illustrated. After sufficient practice the cadets are examined through the solution of one or more map problems, in which they are required to apply the principles they have already acquired. The academic credit for this work should be largely increased. This year the weight of the subject including Drill Regulations was entirely inadequate, tending to mislead the cadets as to its importance. Leadership should be one of the most important things learned while a man is a cadet. If a man is not pronounced proficient as an instructor of other men, he should not be commissioned as an officer. The Department of Tactics should, therefore, have such a weight as to put it on the same basis and of equal importance with other departments. If a man is deficient in leadership, he should not be graduated no matter what other qualifications he may possess, and the report of the Department of Tactics should be the final test as to whether or not a cadet is to be graduated.

It is thought that all instruction given cadets should be limited to such things as are absolutely basic for all officers, no matter what the branch of the service. Infantry drill is absolutely essential for everybody; similarly, to learn how to ride is absolutely essential. However, to become an expert in equitation is something that should be required if the man decides to go into the mounted service. Similarly, the technique of Coast

Artillery or Field Artillery is something that is acquired after a man has selected those branches for his future calling. The object of the course for cadets should be to show them the relation of the various branches to each other and the functions of each, but we should not give instruction that will not be of value to every member of the class.

The training in Minor Tactics should commence with the first camp, and the full course of lectures, with the map reading should be given to the new men then, so that they will understand the tactical language all the time they are in the Academy. They will learn the principles the first year, apply them the second year, and become full fledged instructors the last year.

Of the 350 cadets who entered in November less than 150 are now present. There were numerous resignations due to the ending of the war, but an unusual number were dismissed for deficiency, the lowering of entrance requirements having permitted the entrance of many who did not possess satisfactory qualifications.

The limits of the camp were enlarged to permit the formation of twelve companies, but the present size of the Corps justifies only nine. Small companies are desirable for the purpose of giving practice in leadership to a greater number.

Recommendations:--

1. The allowance of greater academic credit to the Department of Tactics.
2. Proven ability as a leader to be a requisite to graduation.
3. Temporary rank and pay of full colonel for the Commandant of Cadets.
4. Temporary rank and pay of lieutenant colonel for the assistant to the Commandant.
5. Pay of major for three battalion commanders.
6. A motor car at constant disposal of the Commandant of Cadets.

JENS BUGGE,
Colonel, U. S. Army,
Commandant of Cadets.

DEPARTMENT OF CIVIL AND MILITARY ENGINEERING.

The report of the head of the department is as follows:

Due to the graduation of the Second and Third Classes on November 1, 1918, the instruction of those classes in this department was limited to a series of lectures on army organization and field fortification, covering as much of these subjects as the limited time assigned to this department would permit. It was decided to omit the regular text book method of instruction and to substitute lectures, as the time allotted to this department was short and it was deemed a better way of giving to the classes the results of the observations that had been made by the head of the

department in his tour abroad. Tables of organization and pamphlets, prepared by the general staff on these subjects were given to the members of these classes and explained to them.

Due to the shortened period of instruction, it was found impossible to deliver the usual series of lectures on the conduct of the great war.

G. J. FIEBEGER,
Colonel, U. S. Army.

DEPARTMENT OF NATURAL AND EXPERIMENTAL PHILOSOPHY.

The report of the head of the Department of Natural and Experimental Philosophy, with unimportant omissions, is herewith appended. The recommendations at the end of the report are concurred in. The two-year schedule of recitation therein referred to should be accompanied by an arrangement for study shortly preceding the recitations, if such arrangement be possible. The report is as follows:

1. The head of the department left for overseas duty with the American Expeditionary Forces, France, in the latter part of June, 1918, just prior to the close of the fiscal year. He returned to West Point the last week in August, 1918, in time to start the course of instruction with the then 2d Class on September 1.

* * * * *

2. On September 2, 1918, the regular academic work in the department began with the regular 2d Class, the class of 1920, which was graduated November 1, 1918.

* * * * *

The instruction of the class of 1920 continued until October 5, 1918, on which date, due to instructions having been received to graduate the class on November 1, it was transferred to other departments for instruction. At the beginning of the course with this class it was the intention and expectation that they would remain under instruction in the department of philosophy until about March 1, 1919, when they would be advanced to the 1st Class and graduated in June, 1919.

Upon leaving the department on October 5, this class had practically completed their work in General Physics, with the exception of partial and general review work and examination.

Of 225 men who were still with the class on October 5, all except the last 19 were considered proficient on the work to date. While these 19 were not considered proficient on the course, in view of the circumstances under which the class was advanced to first class subjects and the war emergency then existing it was recommended that the deficiency of these 19 cadets be waived. This was the action decided upon and recommended in all other departments and approved by the Academic Board.

3. On October 7 the then Third Class, class of 1921 (graduated also November 1, 1918), reported to the department of philosophy for daily lectures in Elementary Mechanics; each lecture covered a period of one hour and no time for study or preparation was allotted. In all there were approximately 16 lecture periods and a brief outline only of Elementary Mechanics was given. No instruction in Sound and Light was given.

4. On December 5, 1918, the class of 1921 which had been graduated November 1, 1918, and commissioned as 2d lieutenants, unassigned, reported for instruction in the department of philosophy as student officers. This class had had fourth year mathematics and a little less than two months of third year mathematics. They were therefore not equipped to take up the study of mechanics, sound and light as ordinarily pursued in the department. The recitation schedule provided that they should attend work in the department of philosophy on alternate days, three attendances per week. They were to be relieved from duty at the Military Academy in June, 1919. Each student officer therefore received approximately 70 periods of instruction in this department. It was decided to give instruction to this class in elementary mechanics, sound and light. They were not advanced far enough in the study of the calculus to enable them to make use of that subject in the department of philosophy until near the end of the academic year. It was therefore necessary to adopt for their use a text book which did not make use of the calculus. A text book of physics, Duff's fourth edition, was selected as more nearly satisfying the conditions than any other available text.

The class therefore began instruction in General Physics on December 5, and the remainder of the academic year until June 4, 1919, was devoted to instruction in mechanics, sound and light as covered by Duff's Physics. The department was able to complete this instruction only by omitting most of the periods which were ordinarily devoted to partial and general reviews.

While the text book selected was not entirely suitable for use with classes at the Military Academy it proved fairly satisfactory and is probably better for a short course than any other modern text book of similar scope that can be obtained.

* * * * *

5. The general scheme of instruction in the department was to have two periods of recitations and one period of laboratory exercises each week. About one-sixth of the total number of periods was devoted to lectures.

The progress of the class was satisfactory. It was the first time that the text book had been used in the department, and the laboratory and lecture room equipment while generally satisfactory was far from perfect for use with this particular text.

6. During the greater portion of the year each instructor carried three sections of 12 men each day, that is, six sections in all as the sections attended on alternate days. The recitation room period was uniformly one hour and 25 minutes. This entailed on each instructor approximately 25 hours and 30 minutes recitation room work weekly. In addition to this

each instructor had to keep up the academic records of 72 student officers, supervise their laboratory work and correct their notebooks. This is more work than the average instructor, particularly in a new subject, can satisfactorily perform. The character of instruction received by the student officers did not reach the standard desired in the department and particularly for the reason that the instructors were overloaded with recitation room and notebook work. It left them little time to do anything more than prepare their regular recitations. They were not able to do a large amount of collateral reading and their instruction work was correspondingly restricted.

7. Of the 275 student officers who remained throughout the course the records showed that all but the last 64 had attained proficient grades. No regular partial or general reviews were held and there was no final examination. Had time permitted giving partial and general reviews it is believed that approximately one-half of those deficient would have attained proficiency. It is doubted if the remainder would have passed the course. This condition was almost entirely due to the fact that the department of mathematics had not completed its work with the members of this class when they took up their work in the department of philosophy, and there was therefore a considerable amount of material in the class which under normal conditions would not have reached their second class courses. It was also evident throughout the year that a few members of the class did not put proper effort on their work. Disciplinary action was resorted to when justified. This class worked throughout the year under great disadvantages generally, and it is believed under usual conditions it would have proved a highly efficient class.

8. The class which is to go under instruction in the department of philosophy on September 1, 1919, will have been at the Academy only one year and is to be graduated at the end of its second year, that is in June, 1920. This class is to have recitations in the department of philosophy for approximately 110 periods. It is proposed to use the same text book with this class as was used with the preceding (student officers') class. The portion of time allotted to the department and not devoted to general physics, approximately 35 recitation periods, will be devoted to more advanced mechanics and to applied optics.

9. The physical laboratory apparatus is being continually added to and a special effort is being made to secure or build apparatus of such size that the cadet will receive instruction which will constitute a part of his working knowledge after graduation. This applies particularly to the instruction in statics.

The laboratory work is being expanded and while the laboratory periods, one hour and 25 minutes each, are too short for satisfactory laboratory work they enable the cadet to perform numerous simple experiments. In preparing these experiments much work which would be performed by the cadet himself were the periods longer, must be done by the department in advance. This materially handicaps the work and detracts from its value.

A short course in precision of measurements was given in the beginning of the laboratory work. The principles involved therein were worked out in five laboratory experiments which were prepared as quantitative experiments for this purpose. These principles were later applied throughout the course.

Difficulty was experienced in securing slide rules for use in the department although they were ordered as early as practicable. These are now a part of the regular equipment for the cadet in the department of philosophy and their appropriate use is obligatory in this department.

10. No instruction in astronomy was given during the year just past. The time available to this department did not permit of it.

Three thousand dollars will become available on July 1 next for repairs to the main observatory. When this work has been completed it will be possible to put and keep the observatory instruments in commission. When instruction in astronomy is again undertaken it is hoped to make suitable use of the main observatory in connection with the instruction in general astronomy. It is expected in this way to add interest to that course.

11. During the past six weeks of the course just finished the assignment of an additional instructor to the department made it possible to have each instructor take two one-hour and 25 minutes recitation periods each day. This gave him ample time to attend to the academic records and notebook work of the cadets under him and also some time for outside preparation so that his value as an instructor was materially increased.

12. The arrangement of the schedule during the past year and, so far as can now be estimated, during the ensuing year, makes it necessary to deliver each lecture six times. It is hoped that a satisfactory schedule may be adopted which will permit at least one-half the class to attend lectures simultaneously thus necessitating their repetition only once.

13. In view of the adoption of a three-year course and the uncertainty as to the amount to be allotted this department, no general recommendations with respect to its future development are submitted at this time. So far as can now be foreseen there is no reason to change the policies outlined in the report of the head of this department for the year ending June 30, 1918.

14. The following recommendations will apply to any course of instruction given in the department and should be put into effect at the earliest practicable date:

- (a) Each instructor to take two sections only each day;
- (b) The academic schedule for the class to be so arranged that no lecture need be repeated to any class more than once;
- (c) The schedule to be so arranged as to permit of a two-hour laboratory period.

15. The services of the assistants in the department have been highly satisfactory, and whatever success has attended our efforts has been due largely to the loyalty and earnestness of all concerned.

C. C. CARTER,
Lieut. Colonel, U. S. A.

DEPARTMENT OF MATHEMATICS.

Attention is invited to the statement of the Professor of Mathematics as to the unusual amount of work of the kind performed by his instructors during the war emergency. His recommendation for a return to the two-period schedule is fully concurred in, both for the reason given by him and for the better opportunity for study afforded the cadets; the more important part of his report is as follows and extends to June 30:

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Personnel.—At the time of the submission of the last report in June, 1918, there were attached to the department the professor and fourteen instructors. The professor was on detached service abroad from June 20 to September 2. The instructors were performing temporary duty in the Departments of Tactics and Practical Military Engineering.

There are on duty in the department on June 30, 1919, inclusive of the ten officers detached, one professor and eighteen instructors.

Instruction.—The regular 4th Class, later designated as 4th Class "A" to distinguish it from the November class, began its academic work on September 1 and pursued the 4th Class course of instruction as given in previous years. Recitations in mathematics were held daily except for the last sixty-six days of the year, during which alternation of mathematics with surveying took place. Academic time lost at the period of the November graduating exercises was regained by the omission of holidays during the last week of December.

This class was the largest that ever entered the Academy, beginning its studies in September with 429 members.

Examinations were held in December and June with the following results:

	No. in Class	Deficient	Turned back	Discharged
December.....	403	72	0	72
June.....	304	6	1	5

(Of those failing 54 had been admitted by certificate. At a re-examination held in March, 26 ex-cadets appeared and three passed satisfactorily.)

An additional 4th Class, designated 4th Class "B", was admitted to the Academy during the first week of November to replace the 2d and 3d Classes which were graduated on November 1, 1918.

No entrance examinations were held for this class, which, on account of war conditions, was to be graduated in June, 1919, together with 4th Class "A".

A course in algebra, plane trigonometry, surveying and the elements of analytical geometry was outlined for 4th Class "B" with the intention of amalgamating the class later with 4th Class "A".

The unusual handicap under which Class "B" entered and the inequality of preparation of its members soon made itself apparent. Therefore, when, on account of the armistice, it was decided to hold the class at the Academy for two additional years, a new schedule was prepared provid-

ing for the review of the foundations of algebra and the taking in its entirety of the subject of solid geometry, matter which it had been necessary to omit for lack of time. The class has now become stabilized and will be able to finish its subsequent course with credit.

Between November 18, 1918, and March 26, 1919, algebra through logarithms and solid geometry were taken in alternating recitations. Between March 26 and June 4, algebra and plane and spherical trigonometry were completed in alternating recitations.

Examinations were held in March and June with the following results:

	No. in Class	Deficient	Turned back	Discharged
March.....	239	65	6	59
June.....	143	3	0	3

The 3d Class started the year in September with the usual course of plane analytical geometry in alternation with descriptive geometry. After six weeks' work in mathematics, September 1 to October 10, the class was marked for graduation on November 1 and was immediately shifted to an emergency course of lectures in the subjects of the 2d and 1st class years.

This class was, after the Armistice, returned to the Academy as a Student Officers' Class and resumed its work in mathematics on December 4.

By omitting the reviews of plane analytical geometry and the subject of perspective for all sections, and selected portions of other subjects for the lower divisions of the class, it was possible to carry the class through the calculus as usual. Examinations and general reviews were held in February and June for the purpose of instruction and the determination of order of merit.

No members of the class were reported to the Academic Board as deficient in mathematics alone, but a special report was made by the Student Officers' Class Committee concerning those members deficient on the total work of the Student Officers' course.

Remarks.—During the past year the duties of the department have been multiplied somewhat. The instruction and supervision of three large classes has been accomplished. Numerous and hasty alterations of the schedule of instruction have been required. The policy has, however, been persisted in of maintaining three divisions in each class with distinct schedules adapted to the capacity of each group. The results have on the whole been satisfactory.

Under the emergency schedule, each instructor, besides his clerical and routine and preparatory study, has been teaching in the section room from 8:00 a. m. to 12:35 p. m. daily—three periods of one hour and twenty-five minutes each. This is at the rate of twenty-five and a half hours per week of actual section room instruction, which, it is safe to say, is not undertaken ordinarily at any college in the country by an instructor in such subjects. Every one concerned has recognized the necessity for this effort in the two years just passed. In the interests of efficient instruction, however, it is hoped that the two-period schedule can be re-

sumed with the coming session. The two-period schedule does not leave the instructor so mentally exhausted after several months of continuous work; it gives time for the professor and his assistants to hold conferences of the new instructors upon the work they will teach; it gives the young officer time to prosecute his professional improvement in matters outside the subject upon which he must instruct.

The coming academic year again requires the supervision of three classes by the department of mathematics. The second-year classes, "A" and "B", will have 290 and 140 cadets, respectively. The new class is estimated at 504 or over. It is earnestly desired that the detail of instructors be made as soon as possible in order that suitable assignment to classes may be effected.

CHAS. P. ECHOLS,
Colonel, U. S. Army.

DEPARTMENT OF CHEMISTRY, MINERALOGY AND GEOLOGY.

The report of the head of this department is herewith given in full. The conclusions contained in the two final paragraphs of the report are concurred in:

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2. Instruction of the 2d Class began September 2, 1918, and continued daily until October 2, 1918, when telegram was received from the War Department directing the graduation of this class on November 1. The course in chemistry was brought to an abrupt close on October 5, the class having had but 16 recitations in heat and chemistry and four lectures.

3. The graduated 3d Class, 285 members, was returned to the Academy for supplementary instruction and on December 5 began course in chemistry, reciting by half class on alternate days. The course was carried through to June 4, 1919, at which time the class consisted of 275 members.

4. The course beginning December 5 instead of September 1, and recitations being on alternate days instead of daily, the subjects of mineralogy and geology were omitted and the courses in chemistry and electricity very materially reduced, the laboratory work in chemistry being entirely omitted and that in electricity being greatly curtailed. It was not possible to give any instruction in the very important subject of internal combustion engines.

5. After some years' experience with the present system of three sections per instructor and sections passing from one recitation to another without intervals for preparation, I must most strongly condemn it. The students are overtaxed and overloaded to the verge of breakdown, the instructors are exhausted and instruction deteriorates correspondingly.

6. Instructors, in particular those having subjects extending beyond one hour, should have but two sections, even if, in order to handle the

same number per instructor, the size of the sections be increased 50 per cent, and there should be a study period between recitations.

WIRT ROBINSON,
Colonel and Professor, U. S. M. A.

DEPARTMENT OF DRAWING.

The work of this department accomplished under emergency conditions is shown by the report of the assistant professor which here follows:

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Third Class Course.—The third class followed the regular course until October 4, 1918, when the order received directing that this class be graduated November 1 made changes necessary. A special course in topography was begun immediately and continued throughout the month of October.

Student Officers Class.—This class was returned to the Military Academy December 3, 1918, as the Student Officers Class and took a special pencil course covering the essentials of the ordinary two years course.

Second Class Course.—The second class started the usual course in machine drawing which was continued through September. Due to the orders for graduation November 1, 1918, the month of October was devoted to topography in order that the instruction given this class before graduation might be more nearly balanced.

R. L. AVERY,
Lieut. Colonel Infantry,
Assistant Professor Drawing.

DEPARTMENT OF MODERN LANGUAGES.

As stated in the report of the head of this department there was practically no work during the year. The recommendations of the head of the department as to the consideration that should be given the civilian instructors in the department are fully concurred in and it is strongly recommended that action be taken to secure the desired result, either as suggested by him or otherwise:

* * * * *

1. Almost no work was done in the Department of Modern Languages for the year just closed, owing to the graduation of the class of 1921. This class had barely begun the third class year course in French when orders were given to graduate it in November.

2. Since the operations of the department were practically nil, there is, of course, nothing to report. All the instructors were, with one exception, shifted to other departments.

3. I recommend that the remarks made heretofore concerning the civilian instructors in this department in respect to their pay and retirement be taken into careful consideration. As I remarked in my estimate for the fiscal year 1920-1921, the pay of \$2000, fair enough fifteen years ago, falls far short of being adequate to-day. With the change of times, come charges and responsibilities. Something ought to be done to aid the civilian instructors in meeting these charges and responsibilities.

Mr. Asensio has been at West Point for fifteen years, during which time his pay has not been raised. Of Mr. Vauthier much the same thing may be said. He has not been in this department during his entire career at West Point but he has been on duty at the Academy as civilian instructor, whether in fencing or French, about as long as Mr. Asensio.

I recommend that the longevity increases of ten per cent for every five years' service be incorporated in the estimates of the Academy, and that this longevity increase be made, retroactive so far as the two instructors in this department, at present on duty in it, are concerned. If any trouble should be anticipated in getting this graduated increase of pay, I recommend that a flat increase of \$500 be made.

I also urge that the question of retirement be considered. As matters stand now, the civilian instructor, after giving the best years of his life to the Department of Modern Languages, may find himself through no fault of his own compelled to give up his post at West Point without any provision having been made for old age. Even if these instructors are not officers, their position is assimilated to that of an officer and certainly should be so assimilated in the principles governing their emoluments.

C. deW. WILLCOX,
Colonel, U. S. A.

DEPARTMENT OF LAW.

Owing to the early graduation of classes little instruction was practicable in this department. However, the head of the department, Colonel Frank L. Dodds, rendered much valuable service to the Superintendent in deciding legal questions, interpreting orders and in the consideration of certain questions of discipline, besides conducting or supervising the various trials that become necessary. His report, with the exception of a statistical record of the court martial business during the year, is appended:

* * * * *

Owing to orders from the War Department, directing the graduation of two classes on November 1, 1918, there was a period of only a little more than three weeks during October, 1918, in which instruction could be given to these classes. Six days were devoted to lectures on elements of law. During the remainder of the time four morning periods were devoted daily to the two classes, in halves. Instructors were loaned to the

department for this purpose. The cadets were required to read certain of the essential parts of the Manual for Courts-Martial and, in the section rooms, the instructors read over each day the portion assigned, with appropriate comments and explanations, which were previously suggested by the head of the department in conference; and opportunity was given in section for questions by the cadets.

During the year, there were nineteen enlisted men and two cadets tried by General Court-Martial. By reason of sentence of dismissal, one of the cadet cases was sent to the War Department for the action of the President. There were three cases in which enlisted men were sentenced to dishonorable discharge. In one of these cases, the Superintendent so reduced the sentence as to retain the soldier in service.

There were nine trials by special court and two hundred and thirteen by summary court. The percentage of trials by summary court was 25.68, which is not an excessive percentage. By far the most numerous of any one class of cases was the several sorts of absences under the sixty-first Article of War, 209 in number. On the whole, however, I should say that the state of discipline for the command was very good if not excellent.

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Besides the work outlined above, this office reported on a number of questions of law or discipline submitted to it by the Superintendent, and gave advice upon such questions to others who came in for consultation.

F. L. DODDS,
Colonel, U. S. A., Retired.

DEPARTMENT OF PRACTICAL MILITARY ENGINEERING, MILITARY SIGNALING AND TELEGRAPHY.

The work of the department which was carried on under the successive heads during the year is indicated in nature and variety, though not in full extent, in the report of the present head. The conditions referred to as "unsatisfactory" under the head of "Post Fatigue and Extra Duty" should receive full consideration of the proper authorities in connection with the general interest of post administration. The report of the Professor of Practical Military Engineering is as follows:

* * * * *

The department is maintained for the outdoor instruction of cadets in the several classes of military engineering, the use of engineer tools, the execution of field fortifications and accessory works, the construction and maintenance of roads, the construction of standard and improvised types of floating and fixed bridges; demolitions, the use of rigging and tackle, map production; a short, though comprehensive, course in surveying is pursued, including the furnishing of survey data for indirect fire; military signaling is taught to the extent of qualification of the dispatch and receipt of wig wag and buzzer messages, wiring and demonstrations in all standard methods of electrical and luminous exchanges.

The general character of instruction in military engineering consisted in the explanation of the theory by lecture followed by the practical execution of the works by the cadets.

The instruction of the several classes during the year may be summarized as follows:

Third Class.—During the summer encampment 1918, from June 16 to July 6, one-third of this class was instructed daily from 7:00 a. m. to 5:00 p. m. in stadia surveying. Each party was required to run a closed traverse approximately 12,000 feet long, extending from one end of a cadet base line, along main road west of parade ground, thence via Lusk Reservoir, to quarters No. 64, and return along road west of officers' quarters, cadet hospital, mess hall, etc., to starting point. Topography was determined by transit and stadia under field conditions. During the rest of the summer encampment one-third of the class attending daily from 8:00 a. m. to 12:00 m. were instructed in knots and lashings, use of tackle, rowing, ponton bridge building, the construction and operation of ferries, the value and use of improvised floats for stream crossing and spar bridges.

Lectures on maps and map reproduction.

From March 17 to April 29 this class (now student officers) was instructed in field fortifications, accessory works, and their application to modern warfare. The Department of Practical Military Engineering has had a book of instructions printed on these subjects. During the first attendance each student officer was issued one of these books which he was allowed to retain as his personal property. Student officers were required to read up the subject for the following lesson and to refer to their books from time to time during the lectures and practical instruction in the field.

The course was divided into two divisions. The first division embraced a series of lectures as follows:

1st Lecture.—Character of engineer work executed in the zone of advance and in the service of supply. Outline of simple fixed bridges and roads within the zone of operations.

2d Lecture.—Outline of field fortifications, including organization of a defensive position. Obstacles.

3d Lecture.—Observation posts, tracing of trenches, snipers' posts, machine gun positions, communicating passages, shelters, cut and cover dugout.

4th Lecture.—Artillery positions, incidental works, signs, telephone lines, drainage, latrines, transportation facilities and camouflage.

5th and 6th Lectures.—Map problems. Each student officer was required to lay out a regimental sub-sector and the battle positions of a sub-sector on a map which was issued to him.

The above lectures were conducted in the lecture room of the Department of Drawing, west academic building. The subjects under discussion were in each case illustrated by lantern slides. Time for each lecture about 2 hours, half the class attending.

The second division of the subject on field fortifications was practical instruction in the field as follows:

1st Exercise.—All student officers attending were escorted over a regimental sub-sector which had been previously laid out in the vicinity of the engineer garden, enlisted men's hospital, and Sinclair Pond, by the U. S. M. A. Detachment of Engineers, under the supervision of the Professor of Practical Military Engineering. The exercise was concluded by a demonstration of a 6-ton tank operating over trenches.

2d, 3d, 4th Exercises.—Making of screens of various types, building of tank mines, high wire entanglements, ribard wire, double aprons, portable obstacles, grave shelters, trench tracings, measuring a stream by weir, reconnaissance for improvements to a road, machine gun emplacements, trench mortar, and trench digging.

The student officers attending were divided into suitable parties to work on the above and were required to actually construct and build the various objects as set forth in the above.

5th Exercise.—Construction of a single lock spar bridge. Construction of a suspension foot bridge over Sinclair Pond. Construction of Lampert Floating Foot-Bridge. Handling and operation of a gasolene field pile driver.

6th Exercise.—Construction of a heavy 90-foot trestle bridge to withstand the passage of a 30-ton tank. Erecting a 56-foot field derrick.

Time of instruction 2 hours; one quarter of the class attending.

4th Class "A".—During the summer encampment from July 8 to August 17, 1918, six weeks, one-third of the class attending for one hour, this class was instructed in visual signaling, wig wag, and semaphore, and were required to qualify in each.

From February 18 to March 14, one-fourth of the class attending for one hour, a series of lectures was given on field fortifications and their application, same as was given to student officers outlined in the beginning of this report. The department manual on field fortifications was issued to this class and they were required to review the various lessons. Lectures were illustrated by lantern slides; the course being conducted in the same manner as given the student officers class.

From May 2 to June 4 in the afternoon, one-half of the class attending for one hour on alternate days, practical instruction was given in field fortifications as was given the student officers.

From March 17 to the end of the academic year, this class pursued a course in surveying, instruction alternating therein with mathematics. Twenty recitation periods were thus available for theoretical work, followed by thirteen 3-hour and 15-minute attendances devoted to a series of practical exercises.

Breed & Hosmer's "Principles and Practice of Surveying" is the text book used.

Throughout the theoretical course in surveying, each section room is provided with a complete instrumental equipment to the end of affording

cadets abundant opportunity for familiarizing themselves therewith. In addition, instruments are maintained at all times during release from quarters at the disposal of cadets.

The field exercises, above referred to, are selected with special reference to their applicability to the probable duties of commissioned officers and are as follows:

- Measurement of a base line,
- Establishing a bench mark,
- Simple triangulation,
- Plane table survey,
- Profile leveling,
- Transit and stadia traverse,
- Staking out a building,
- Plane table and stadia survey,
- Cross-section leveling,
- Topographic survey, transit and stadia method,
- Re-section,
- Staking out and drainage of a camp site for one regiment.

4th Class "B".—From May 12 to June 4 this class was given theoretical course in surveying; "A" half of the class attending from 1:50 p. m. to 2:50 p. m., and "B" half of the class attending from 2:50 p. m. to 3:50 p. m., daily.

Breed & Hosmer's "Principles and Practice of Surveying" is the text book used.

Throughout the theoretical course each section room was provided with a complete instrumental equipment same as during the 4th Class "A" course.

From June 16 to July 28, one-third of the class attending from 8:00 a. m. to 12:00 m., the field exercises in surveying as follows were pursued, thus completing the plebe year course in surveying:

- Measurement of a base line,
- Establishing a bench mark,
- Simple triangulation,
- Plane table surveying,
- Profile leveling,
- Transit and stadia traverse,
- Staking out a building,
- Plane table and stadia surveying,
- Topographic surveying, transit and stadia method,
- Re-section including battery location for indirect fire.

The instrumental equipment of the department is at present far from adequate to meet the needs of instruction for the larger class now entering the Military Academy. This department has been loaned instruments for instruction in surveying from the Engineer Depot. This arrangement cannot be depended upon to continue, however. It is the intention of the department to add as much to its permanent equipment as possible from

the increase of its appropriation. It is anticipated that in one year hence, it will no longer be necessary to borrow any equipment.

General.—A considerable quantity of new engineer sapper equipment was obtained from engineer depots.

In view of the greatly increased amount of equipment and materials needed for the practical instruction of the larger class, \$6000 per year should be available for this department.

A triangulation system, covering the West Point reservation and vicinity, is being established to be used in battery location for indirect artillery fire. The detailed maps of this region have also been covered with a 1000-yard grid.

Instruction in Signaling.

In order to bring the signal instruction up to date, an officer of the signal corps was requested and was detailed as an assistant in the department. He has secured modern equipment throughout and is revising the course so as to cover all modern means of communication. The signal corps is prompt and generous in honoring all requisitions for signal property pertaining to cadet instruction, which is accordingly maintained at a very satisfactory standard.

The U. S. M. A. Detachment of Engineers.

This organization is authorized, under the Professor of Practical Military Engineering, primarily for assistance in the instruction of the cadet corps, for the collection and maintenance of equipment and materials relating to cadet drills, and for the complete or partial fabrication of structures for demonstrations. In addition, it performs the usual duties of guard and police, and receives practically the same instruction as obtained in other engineer organizations of the army. This organization also maintains a number of men qualified in military signaling to the extent of receipt and dispatch of semaphore, wig wag, buzzer communications, also in the assembling and operation of heliograph and field radio pack set.

The authorized strength of the detachment is 105 men. The average during the year has been 96 men.

On account of the increased number of cadets over former years and the greater variety of engineer drills to be carried on, an increase in the size of the engineer detachment is urgently needed. It is therefore recommended that legislation be secured as early as possible, raising the strength of the detachment as follows:

Present	Increase	Rec. Total	Grade
0	1	1	Master Engr., Senior Grade
0	2	2	Master Engr., Junior Grade
1	0	1	1st Sergeant
3	0	3	Sergeants 1st Class
8	0	8	Sergeants
0	1	1	Mess Sergeant
1	0	1	Supply Sergeant
12	0	12	Corporals
2	1	3	Cooks
0	1	1	Horseshoer
0	4	4	Wagoners
2	0	2	Musicians
38	35	73	Privates 1st Class
38	0	38	Privates
<hr/>		<hr/>	
105	45	150	Total

The present engineer barracks was built in 1858 to accommodate fifty men and is entirely inadequate for the present engineer detachment. The ventilation and lighting throughout is very poor. I recommend that the present barracks be enlarged to accommodate 150 men, to include sufficient number of noncommissioned officers' rooms, a reading-room, a company storeroom, a kitchen and dining-room. This same report has been made repeatedly by this department as well as by several Inspectors General.

The detachment's discipline and instruction have been quite satisfactory since last annual report. The number of desertions recorded were three, probably accounted for somewhat by the usual causes of temperament, personal troubles, insobriety, etc.

Question of Post Fatigue and Extra Duty.

It is desired to invite attention to the following conditions which are not entirely satisfactory from the view point of the detachments on the post whose duty is the instruction of cadets. The army service detachment which was originally organized to take care of the labor on the post, has gradually changed until now the greater number of its members are rated as clerks and mechanics due of course to the greater amount of work to be done. For some time back most of the ordinary post fatigue, post guard, ice-cutting, erecting grandstands, construction work, target range work, etc., has been performed by fatigue details from the other detachments on the post, engineer, cavalry and artillery. This condition has frequently hampered cadet instruction due to the fact that insufficient labor was available to properly prepare for the drills, and the personnel of the detachment were not properly trained. Furthermore, most of the members of the army service detachment draw extra duty pay as skilled laborers, etc., and it very frequently happens that they work alongside men from other detachments who do not draw extra duty pay. Obviously the above conditions are quite unsatisfactory. It would therefore seem

desirable that steps be taken to correct the above situation, which no doubt could be accomplished by an increase in the service detachment.

Improvement to Roads and Grounds.

The work was in general accord with original suggestion of the landscape architects, Olmsted Brothers.

During the year repairs were made to the following trails:

From Lusk Reservoir to Fort Putnam, to Delafield Pond, repairs were made, surface graded, water breaks established and repaired.

Along the Round Pond pipe line for a distance of about 1½ miles repairs were made, surface graded, and water-breaks repaired.

From Lusk Reservoir by way of Redoubt Nos. 1, 2, and 4, thence west to the reservation line for a distance of about 3½ miles, retaining walls were repaired, surface regraded, water-breaks established, and those already existing were put into shape.

During the winter months after heavy wind storms trees that had been blown across the trails were removed. A total of about 123 trees were cleared off the trails during the winter. No new trails were constructed.

Fortunately the recent appropriation bill for the support of the Military Academy provided a fund of \$3000 for continuing the improvement of roads and grounds. The work thus far accomplished has proved to be of great value in affording access throughout the forested portions of the reservation, in facilitation of timber removal, fire fighting, etc. In addition, most attractive riding circuits are provided, giving desirable impetus to horseback exercise and tramping, of peculiar value to many officers here engaged upon confining academic duty.

Water Supply.

The supply system has operated uninterruptedly throughout the year with a minimum amount of trouble, excepting for about two weeks due to a serious break in the line. It was found that several breaks have resulted in this vicinity due to settlement of the pipe in quicksand and erosion of the pipe. It is proposed to incase this section of pipe line in concrete, and rest same on piling to prevent future settlement.

Five hundred feet of retaining wall was constructed along the line during the year.

Water was drawn from Queensboro Brook until June 15, 1919, when it became necessary to draw water from Popolopen Creek on account of very dry weather.

By constant inspection, sanitary conditions over the watershed have been maintained satisfactorily with the result that the monthly examination by the post surgeon of both raw and filtered water have disclosed nothing of an objectionable or suspicious nature.

Consumption continues to be extravagant, though less than during prior years. The available margin is large, however, and further reduction should readily be possible in case of need.

Consideration is being given to the practicability of arranging for the use of raw water in place of filtered water for several of the post's activities.

The maximum recorded daily consumption was 1,188,000 gallons and minimum 650,000 gallons. The average has been 919,000 gallons. The total for the year was 332,000,000 gallons.

Construction.

During the year a new combined plotting room and primary station for the 6-inch gun battery was erected as an addition to the present station. A 100-foot steel metal fire-proof shed for housing material used for cadet instruction was also erected. The work of construction was executed by the U. S. Military Academy Detachment of Engineers under the direction of the Professor of Practical Military Engineering.

R. F. FOWLER,
Colonel of Engineers,
Professor of P. M. E.

DEPARTMENT OF ORDNANCE AND GUNNERY.

Owing to the early graduation of classes there was no opportunity for the usual theoretical instruction in this department. The instruction given consisted of inspection of material by cadets with description of same and explanation of its use by officers of the Tactical Department. The report of the officer of the department with unimportant omissions here follows:

* * * * *

2. All instructions in ordnance and gunnery were given under the Department of Tactics.

Ordnance Material.

3. The armament of the post has been kept in good repair during the year. Changes and alterations ordered by the War Department have been incorporated in the field and seacoast artillery at the post.

All guns and mortars have been returned.

Enough Light Brownings and grenade discharged to complete equipment of regiment of cadets.

An ample supply of ammunition for small arms, machine gun and field artillery target practice has been furnished during the year.

Ordnance Laboratory.

4. Included in the ordnance laboratory are the barracks for the ordnance detachment, two storehouses and a number of sheds for the storage of ordnance property and a machine, carpenter and blacksmith shop for use in the instruction of cadets and in the repair and alterations of ordnance property on the post.

These buildings have heretofore been sufficient for their purpose, but the increase in the size of the Corps of Cadets and the policy of handling

of ordnance property through the instruction of cadets in shop work, as well as a greater amount of storage space.

It is proposed to obtain this room by placing a second story on the buildings used as a machine, carpenter and blacksmith shop and building a new ordnance barracks, permitting the use of the old barracks as a storehouse.

Estimates for new construction were submitted by Colonel W. H. Tschappat, Colonel of Ordnance.

Museum.

5. The museum attracts an increasing number of visitors. Considerable use is made of the ordnance exhibits in the instruction of cadets. The work of repairing valuable flags has continued during the year, and a number of articles of interest have been added to the museum list.

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Ordnance Detachment.

7. The work of this detachment consists principally in receiving and issuing ordnance stores and ammunition to the Corps of Cadets and to other detachments on the post, caring for seacoast armaments, repairing, altering and handling target material for cadet target practice, furnishing the enlisted personnel required in museum, furnishing assistance in the instruction of cadets in shop work, furnishing clerical assistance to the Department of Ordnance and Gunnery, and keeping in good order the grounds and buildings pertaining to the ordnance laboratory.

The increased work of this detachment due to the change in the method of handling ordnance property referred to above, the increase in the size of the Corps of Cadets, the greater use of machine guns, trench mortars, etc., at cadet drills, will require an increase in the authorized strength of this detachment from 22, the present authorized strength, to 28 men. Separate recommendations as to this increase and a new barrack building for this detachment have been made.

CHARLES HINES,
Major, Coast Artillery Corps,
In charge of Dept. of O. and G.

DEPARTMENT OF MILITARY HYGIENE.

The report of the head of this department, Lieut.-Colonel Haskin, is as follows:

* * * * *

1. Owing to the abbreviation of all courses by 2d indorsement A. G. O., W. D., November 12, 1918, the course as outlined for Military Hygiene had to be abandoned.

2. The Class of 1921 received three lectures in October, 1918, and two in 1919 by the Professor of Military Hygiene and one hour and a half was devoted to demonstration of field sanitary appliances that were installed in 1918, under Major D. M. Shewbrooks.

3. It is to be deeply regretted that such an important part of the training of officers had to be omitted and it is earnestly hoped that some way will be found to give future classes at least as much instruction as has been given in the past.

4. The health record of our army during the past two years has surpassed all possible hopes in spite of the great incidence of disease caused by the epidemic of measles and of influenza, and it is the greatest possible tribute to the value of Military Hygiene.

5. It is a well recognized fact that the successful maintenance of sanitation cannot be obtained without the full cooperation of the line officers with the medical officers.

6. To secure this cooperation, it is absolutely necessary that the line officer be given sufficient instruction to at least be able to appreciate the necessity of implicitly carrying out all sanitary orders when received. Colonel Ford's Field Sanitation and Colonel H. A. Shaw's Syllabus on Transmissible Diseases, were issued to each student officer, and during the lectures that were given, they were urged to carefully study them at some later date.

7. No instructors were used during the year.

W. H. HASKIN,
Lt. Col., M. C.

DEPARTMENT OF ENGLISH AND HISTORY.

The report of the head of this department given below in full, well illustrates the difficulties and interruptions in the course of study as carried on during the last academic year; the report is as follows:

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1. The course of study in the Department of English and History has been seriously interrupted, as has that in other departments, by the derangement incident to the war. The regular entering class of June, 1918, which will hereafter be called 4th Class "A", started on the usual work in English and history. Within three weeks after the beginning of the course, however, the order from the War Department requiring the early graduation of this class led with the approval of the Academic Board to the substitution of history for the English lessons. It was the plan to carry the history work through until February, and then to give up the remainder of the time for advance studies in other departments. The signing of the armistice in November caused another change in the schedule. The Academic Board approved a course by which the members of 4th Class "A" alternated English and history with studies of the tactical department. The course for the Spring term was, therefore, cut down to half the usual number of recitation periods. Beginning in January, the English work was again taken up, the recitations alternating with history.

2. The class entering in November, 1918, hereafter known as 4th Class "B", was, of course, unable to have allotted to it the full quota of recitation periods ordinarily given to English and history. In addition to having lost the work of the months of September and October, it was decided after careful consideration to close the work in English and history for this class early in May, 1919. The course, therefore, began November 1, 1918, and ended May 9, 1919. During this period it was possible to give the fundamental work of English composition and part of the prose reading. Practically all of the real literature part of the English course had to be omitted. In history, the entire first half of the regular course, consisting of the period from the French Revolution up to 1860, was omitted. Furthermore, it was then possible in the limited time to give only about two-thirds of the ordinary course in the study of government.

3. In addition to the above conditions with regard to the work of the 4th Class "B", we must take into account the fact that these men were permitted to enter the Military Academy upon greatly lowered entrance qualifications. The result was that, although some excellent students were admitted, many cadets proved to have insufficient foundation to carry the course at the Academy. This material held back the development of the course below what it might have been under more normal conditions.

4. The method of teaching in the department has not been materially changed except as modified in slight particulars to meet the needs of certain sections of 4th Class "B". In the English work, the front board recitation method was used as heretofore for insuring the careful preparation of the fundamental principles, and frequent written exercises were required in order to give the cadets ample practice in the use of those principles. In the history work, the front board method was used exclusively at the beginning of the course. As soon as the capacities of the cadets had been determined by this method, the upper sections of the class were taught by the question and answer method, which gave more time for instruction.

5. The special courses naturally suffered as a result of the changes in the department. The course in United States History was given to the cadets who qualified for the special work in 4th Class "A" at the end of the Fall Term, and a very short course, based on the text book, Latane "From Isolation to Leadership" was introduced at the end of the Spring Term. In English, no special section work was given at the end of the Fall Term, since the work of this class had been almost exclusively in history; and only a short course in Lamb's Essays of Elia and in Modern English Poetry was offered at the end of the Spring course. For the members of 4th Class "B", a short special course similar to the course based on Latane was given in March, 1919, and a short English course based on Lamb and selected examples of Modern English Poetry during the same period.

6. With the curtailed course, it has been possible to spare the time for only a few outside lectures. Professor Keller and Professor Adams of

Yale are the only ones who have lectured to the class. It is hoped that with the resumption of normal work next year the department will be able to have a much longer list of lectures.

7. The regular quota of instructors was sufficient under the changed conditions to handle the work for 4th Class "A". With the entrance of 4th Class "B", however, arrangements had to be made to increase the corps of instructors in the department. As the changed curriculum left the Department of Modern Languages and the Department of Law without recitation work, and the Department of Drawing with only one-half its usual work, it was possible to draw from these departments men to help out in the emergency. All of the instructors, both those regularly assigned to this department and those who were called in to assist during the emergency, deserve commendation for the spirit in which they have done their work. I desire especially to mention Lt. Col. W. E. Morrison, who has served at the head of the history group in 4th Class "B"; Major C. A. King, jr., who has served as Assistant Professor of English and History for 4th Class "A" and Captain E. A. Everts, who has served as Assistant Professor of English for 4th Class "B". In the unusual burden which has fallen to the department during this year these men have done most efficient work in the conduct of the course.

8. It is with deep regret that I mention here the death of Major Lester E. Moreton, Assistant Professor of English. Major Moreton had served at the Academy for two years. He was loyal and efficient throughout all of his service. With his ability he combined a peculiarly delightful personality which rendered it a pleasure to have his cooperation in the work of the department.

LUCIUS H. HOLT,
Lieut. Colonel, U. S. A.,
Prof. English and History.

HEALTH AND SANITATION.

The surgeon, Lieut. Colonel Haskin, and his assistants, among whom there were several changes during the year, have been watchful in looking after the sanitary conditions of the Post; his report with a few omissions here follows:

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2. **Corps of Cadets.**—The past year has seen many changes in the Corps of Cadets with the graduation of two classes and the entrance of one class in June and another in November, in all 750 men.

When it is realized that none of these cadets had been in the institution long enough to have received the full benefit of the splendid physical training that is afforded and that the majority, at all times, were green, undeveloped men, one can feel that the report of the yearly non-effectives is most satisfactory.

The two epidemics of influenza were severe and the after effects were felt for several months, as was to be expected, and influenced the incidence of non-effectives very decidedly:

TABLE I.

Year.	Mean actual strength command.	Cases.	Rates per thousand.	Non-effective Rates per thousand Hospital
1915-1916	579	579	1000	13.82
1916-1917	712	756	1061	14.54
1917-1918	740	1044	1410	20.67
1918-1919	866	1273	1469	26.74

It was most remarkable that during the first and severest part of the epidemic in October, we lost only one cadet, and most satisfactory that even in the recurrence, we lost only two others. This result was entirely due to the untiring devotion of the medical staff, both officers and enlisted men, who never failed in their efforts to relieve the sick.

It is all the more remarkable when it is realized that we had no trained nurses at any time and that the enlisted personnel were mostly new men who had received their training within one year at this post.

During the year, four cadets were discharged for physical disability; three were transferred to Fort Bayard, N. M., and one to New Haven on account of tuberculosis, following influenza; one to Hot Springs for rheumatism; one to Plattsburg for neurasthenia; two were sent to General Hospital No. 1 for observation.

Thirteen cadets were granted leaves of absence as a result of the influenza, there being no suitable accommodations to handle convalescent cases of this kind.

One case of malaria in the Corps and no typhoid.

The report of the examinations made in the laboratory is given below:

Examination of blood.....	154
Examination of feces.....	44
Examination of urine.....	835
Examination of pus.....	62
Examination of throat cultures.....	89
Examination of sputum.....	119
Examination of stomach contents.....	9
Examination of water.....	18
Examination of milk.....	14
Examination of urethral discharges.....	57
Miscellaneous examinations.....	131

This will show the great need of a fully equipped laboratory, which we have not, chiefly owing to the fact that there is no room in which to install it. Owing to this lack of room, no useful information could be obtained of the bacteriological nature of the cases of influenza nor in fact can any satisfactory bacteriological work be done under present conditions.

X-ray.—One thousand eighty-nine patients were given roentgen examinations. A complete new equipment has been received and satisfactory installation has been effected.

Contagious Diseases on Post.

Diphtheria.....	1
Whooping cough.....	9
Chicken pox.....	1
Measles.....	27
Mumps.....	1

A mild outbreak of measles occurred among the families of the enlisted men and was controlled by strict isolation.

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3. Enlisted Men.—During the past year, there were 586 admissions to sick report, equivalent to an admission rate of 719 per thousand; total number of days lost was 5407, giving an average non-effective rate of 18.4 per thousand for the year.

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Fourteen deaths were due to direct effects of the influenza; three cadets, two officers and nine enlisted men.

Considering that the diagnosis of influenza was made in 652 cases and that there were undoubtedly many other cases not under treatment, the total record of deaths from this disease is very small and redounds greatly to the credit of my entire staff who worked so arduously throughout the entire time.

In all, 408 operations were recorded at both hospitals, including 24 appendectomies, with no fatalities, a most excellent record.

4. Sanitation.—The sanitary conditions at this station for single enlisted men, cadets, and officers are excellent. The same cannot be said for the quarters of the married enlisted men, many of which are badly overcrowded.

Frequent inspections of the band barracks have been made and it can at least be said that they have been kept in a better sanitary condition, although it is impossible to make them satisfactory until proper plumbing has been installed throughout.

The total inadequacy of the Cadet Hospital was made evident again in the epidemic of influenza, and it is a great satisfaction to realize that a new hospital has been authorized, which will provide for all possible emergencies in the future.

The completion of the new laundry will remove one of the most serious danger spots on the Post, the old laundry being a veritable death trap in case of fire, and most unsanitary in its equipment.

A special report and recommendation was made on the Post School in February, 1919, and it is again earnestly urged that a new building be provided to meet modern requirements.

Anti-mosquito measures were carried out rigidly during the summer of 1919 and were most successful, there being but very few insects in evidence and those only of the culex variety. The area of ground it is

necessary to constantly inspect is great and it has never been possible to secure enough men to keep all the territory properly policed and oiled to secure perfect results in controlling these insects.

Anti-fly measures have been ordered from time to time and instructions as to proper screening and the use of fly traps have been issued, but flies were found in great numbers in the bakery and commissary in spite of these precautions. The cadet mess was also badly infested with them in 1918, although no breeding places could be found. This year new screens have been installed throughout the cadet mess and it is hoped that there will be a marked improvement.

The milk supplied by the Arden Farms has been most satisfactory and has met all requirements at the several tests that have been made both bacteriologically and for fats.

5. Shoes.—Sore and blistered feet were very frequently found in the 4th Class last summer, due, as usual, to the inability to properly fit the shoes from measurement provided by regulations. The class this year will be supplied with the regulation Munson last, and it is confidently expected that they will effect a marked decrease in the number of casualties from this cause, if the measurements are properly made, as per regulations.

6. The recommendations made in the Annual Report of 1918, under the heading "Respiratory Diseases and Exercises" are again submitted for earnest consideration after careful observation through the past winter.

7. Dental.—There have been many changes in the dental personnel during the past year, which has not worked for efficiency on the whole. In spite of this, marked progress has been made in overcoming the deplorable conditions found in the personnel of the enlisted men.

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It has not yet been possible to correct all the defects found in the mouths of cadets, but steady progress is being made, and with four dental officers on duty, the next year should see a great improvement among all residents of the post.

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9. Report of Veterinary Officer is hereby appended.

W. H. HASKIN,
Lieut. Colonel, M. C.

Post Veterinarian.

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2. Upon my arrival I found many cases needing veterinary attention, due to the fact that this post was without the services of a veterinarian from July, 1918, to August 4, 1918. During this time, Sergeant 1st Class Joseph McCray, V. C., (colored) acted as veterinarian.

3. The total strength of organization was 503 horses and 25 mules. Thirty-five horses and 4 mules were carried on sick report.

4. On October 4, 1918, 34 horses and 3 mules were condemned and sold at public auction. On March 14, 1919, 56 horses and 14 mules were condemned and sold at public auction.

5. On January 24, 1919, this post received six horses and on May 2, 1919, this post received 76 horses, and again on May 23 we received 36 horses, which brought our strength up to 530 horses and eight mules.

6. To date, there have not been any epidemics. At this post, we have tested 607 horses and 36 mules for glanders and all were negative.

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7. All meats and meat products are inspected at this post at the time of receipt. This makes it necessary to visit each market every day.

8. There are two dairies supplying milk to this post, and these are inspected every month, a report being rendered in compliance with orders from the Surgeon General of the Army.

9. The various stables are visited every day and the sick are treated with the help of a farrier. At this time, the sanitation of the stables and picket lines are noticed and reported to the Surgeon of the post.

10. The Veterinary Detachment consists of one 1st lieutenant, one sergeant, 1st class, one sergeant and one private (the enlisted personnel is colored). The office of the veterinarian is located in the Cadet Hospital.

11. There is no veterinary hospital at this post. One is needed. The average sick report is about 20 horses per week. These cannot be isolated and, due to the fact that our stables are all over the post, much time and energy are spent on transportation. A veterinary hospital at this post would improve the veterinary service and also relieve the various detachments from the care of the sick and injured.

JOHN D. MOORE,
1st Lieutenant, V. C.

THE ADJUTANT'S OFFICE.

The administration of this office since my last report has been most efficiently and satisfactorily conducted, under many unusual difficulties, by the officer in charge, Lieut. Colonel Ganoë, whose report is hereto appended in full. The admirable spirit and service of the office force expressed by him is fully testified to by me and his appreciation thereof heartily concurred in. The specific commendations by name made by the Adjutant are merited in the highest degree, and the simplest elementary justice requires that the recommendations in connection therewith should be carried to fruition. The action proposed by the Adjutant to secure consideration for the old clerks of long service is fully approved by me.

1. During the past fiscal year I was present for duty except for a leave of absence of 13 days from January 10 to 23, 1919. During that time the duties of Adjutant and Secretary of the Academic Board were performed by Major Herbert E. Marshburn, Infantry, Treasurer, U. S. Military Academy.

Major James B. Ord, Infantry, was detailed as personnel adjutant and intelligence officer, the duties of which offices he very creditably performed until his relief February 7, 1919, when he was assigned to The Hague as Assistant Military Attaché. Major Ord was relieved February 7 by Major Adam E. Potts, C. A. C., who in turn was relieved June 17 by Major Willis E. Teale, C. E. Each of these officers zealously performed all the duties assigned him.

2. The policy adopted last year in reference to the reduction of paper work has been further extended this year. Only by selection and subordination has the tremendous mass of clerical matter been handled under the very unusual conditions imposed by the war. The result has been that of raising the positions of the chiefs of divisions to the place they should occupy in accordance with the advanced methods at this and other institutions.

The military section of the office has been especially hampered by change in its personnel. The condition of influx and efflux of enlisted men was so constant that dilatory and inaccurate work repeatedly embarrassed the office.

There has been established a highly needed statistical section, which has prepared for ready reference many accurate tables. One of the senior clerks of long and creditable service at the Academy is co-ordinating all the old records and putting them in such shape that they may be referred to by consulting one instead of many documents scattered throughout the various offices. An instance of this work is the comparison made between candidates who entered through mental examination and those who entered by certificate. The tabulation extends over all the years in which the certificate privilege was allowed. During that time 66 per cent of the certificate men graduated in the upper half of the class against 34 per cent of the examinees. Twenty per cent of all the candidates admitted by certificate during those years were found deficient, whereas 22 per cent of all the candidates admitted by examination during the same period were found deficient. In either case, whether considered from the top or the bottom of the classes, the certificate men have the advantage of scholarship.

The printing and binding divisions have been extremely handicapped by loss of personnel so that their work has been unusually onerous. The energies of the chief printer, Mr. Tripp, under these trying conditions is most commendable, for through discharge, furlough to the reserve, and death, the printing force during the year was 50 per cent depleted.

An item will be inserted in the Military Academy bill for three civilian printers to replace some of the extra duty details now on duty with a view to building up a permanent printing office force.

A new wire stitching machine has been purchased to replace an obsolete model in the bindery.

During the epidemic of influenza and while at home on furlough, Corporal David Carrico, Army Service Detachment, one of the most skilled compositors in the printing office, died October 17, 1918. The loss of his

valuable services was very much felt. He was an excellent soldier as well as a first class printer.

3. The present and future work in the Adjutant's office is a concomitant of the greater strength of the Corps of Cadets. In addition, the three-year course enlarges the size of classes so that the work for any one class in examinations, written reviews, committee reports and completion of records of graduation is practically one-third larger. The office force should accordingly be increased. It is far better to replace soldiers with civil service clerks than to be retarded by desultory details of extra duty men. The process of training new men only to lose them after they have attained a degree of proficiency is delaying and inefficient. The record of the civil service clerks at headquarters shows that their average tenure of office is about twenty years. Naturally each one of these employees of long experience has become so valuable to the office that his accomplishment replaces that of several transient clerks. Not only would it be a saving of money to the Government to substitute for the present soldiers in the office young civil service men who would progress in their efficiency and be a permanent asset in the force, but there would be released to the service soldiers enlisted for military duty. Accordingly, three new clerks will be asked for in the next estimates with a view to reducing the entire personnel of the office and at the same time increasing the output with less ultimate outlay of money.

Several of the clerks are well advanced in years and an item looking to their retirement will be inserted in the next estimates. This is in accordance with a custom prevailing at the Academy, two senior clerks having already been retired.

The entire office force is highly commendable for its industry during the most trying and exacting period in the history of the administration of the institution. Its members gave freely of their energies beyond the requirements of regulations; because of three graduating and two entering classes in a single year, labor after hours and through Sundays and holidays was normally necessary. Without adverse inference to others in the office I wish to mention especially the chief clerk, Mr. Boyle, the Superintendent's stenographer, Miss Hager, and the chief of the Academic Division, Mr. Middleton, for their excellent response to the demands upon them. An increase which will cover in part the great deficiencies in pay of all the experienced and efficient clerks in this office, who could not be replaced for far larger amounts than those requisitioned, will be embodied in the next estimates.

W. A. GANOE,
Lieut. Colonel, Infantry.

**TREASURER, U. S. MILITARY ACADEMY, QUARTERMASTER AND
COMMISSARY FOR THE CORPS OF CADETS.**

The report of the Treasurer of the Academy, Major H. E. Marshburn, contains much instructive information of a statistical nature and is inserted in full. All the recommendations of this officer stand on substantial bases and should receive the strongest support and indorsement:

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Statement of business April 30, 1919:

	Assets.	Liabilities.
Accounts payable.....		\$101,316.34
Cadets and Student Officers accounts.....		52,553.81
General accounts.....	\$7,781.00	
Officers' accounts.....	2,667.92	
Cadet mess stock.....	28,208.22	
Cadet store stock.....	73,088.87	
Cloth stock.....	87,852.38	
Tailor trimmings.....	15,022.73	
Shoe material.....	1,584.20	
Cadet store.....		39,637.71
Cadet laundry stock.....	2,386.00	
Treasurer's cash.....	193,555.55	
Equipment Fund—Treas. U. S. M. A.....		150,000.00
Equipment Fund—Cadets.....		55,162.00
Dialectic Society.....		72.96
Glee Club.....		.80
Miscellaneous Fund.....		8.50
Pay—Cadets.....	27,728.32	
Y. M. C. A.....		212.13
Tennis account.....	61.77	
Reserve Fund—Cadet Store.....		37,144.80
Reserve Fund—Cadet Mess.....		289.29
Reserve Fund—Cadet Laundry.....		2,401.75
Monument fund.....	49.86	
Howitzer 1917-1918.....		570.69
Howitzer 1919.....		541.85
Howitzer 1921.....		317.14
Student Officers' Club.....	90.14	
Dry cleaning stock.....	179.56	
Golf account.....		26.75
	\$440,256.52	\$440,256.52

Total business for the year ending May 31, 1919:

Receipts from all sources.....	\$1,511,559.31
Disbursements, all accounts.....	1,330,668.25

The cost of living has shown no tendency to decrease and the cadets are now in debt \$76,891.56. The last Congress increased the pay of a cadet from \$600.00 to \$780.00 per annum. This increase is effective July 1, 1919, and although it will be a very great help it is not sufficient, and the ration allowance should be materially increased.

Attention is invited to the fact that the present initial deposit required of cadets is insufficient, and it is recommended that it be increased from \$160 to \$200.

A careful analysis of expenditures for new cadets during the past year shows that their pay and allowances go about as follows:

Initial clothing issue, repairs to clothing and shoes, books, monthly requisitions, etc.....	\$556.67
Board.....	396.00
Laundry.....	36.00
Equipment Fund.....	168.00
Total.....	\$1,156.67

Their credits during the same period are:

Pay and rations.....	\$1,028.20
Initial deposit.....	160.00
Total.....	\$1,188.20

which leaves them something like \$32.00 a year for amusements, athletics and other incidentals. Unfortunately many cadets fail to deposit the required \$160 upon admission and this only adds to their indebtedness.

Cadet Store.

In spite of the greatly increased cost of all material and the difficulty in obtaining the same the Cadet Store has maintained its high standard of service for cadets.

Store sales for the year amounted to \$477,630.69, and the tailor shop manufactured 12,265 articles of clothing (blouses, trousers, dress coats, overcoats, etc.) for cadets and 1,390 for officers. In addition to this work they made up 2,250 clothes-bags and 1,000 gun covers, and made repairs to about 35,000 articles of clothing.

The shoe shops repaired 4,000 pairs of shoes.

As the size of the Corps increased from year to year the Cadet Store functions with correspondingly greater difficulty. Its present facilities are in every way inadequate to meet the many demands made upon it by 1,100 cadets.

The Cadet Mess.

The average cost of board for the year has been \$31.82 per month. The Treasurer, in his last report, submitted data showing the increased cost of all foodstuffs. These high prices still prevail.

The largest number of cadets cared for at any one time was 1,053 and the service was exceedingly difficult. This was due both to the small seating capacity of the mess and to its limited kitchen facilities.

The servants' quarters and storerooms are not large enough, and a report recently made on the refrigerating plant by a government expert discloses the fact that a new plant will soon be an absolute necessity.

The Cadet Laundry.

The business of the laundry proper for the year amounted to \$45,736.84, while that of the dry cleaning department was \$4,806.98.

The new laundry building is nearing completion as rapidly as the Quartermaster can push it and most of the new machinery is on the ground ready for installation. A few more pieces of machinery will be bought as soon as the money is available. They are needed to make the laundry up to date in every particular.

A sterilizing, disinfecting and dry cleaning department is most urgently needed and an effort will be made to obtain the money for the same in next year's appropriation.

General.

It will be seen from the above that at present every department is doing work greatly in excess of that for which it was originally intended. This difficulty will soon be obviated in the case of the Cadet Laundry but the need for a new Mess Hall, Cadet Store and Dry Cleaning department is increasing daily.

The Treasurer desires to take advantage of this opportunity to commend to the Superintendent the loyalty and efficiency of all the employees of this office, and especially of the heads of the several departments.

H. E. MARSHBURN,
Major of Infantry,
Treasurer, U. S. M. A.

THE U. S. M. A. LIBRARY.

The report of the Librarian hereto appended in full brings the information up to date with regard to the important and interesting features of the Library:

On June 30, 1918, the catalogue of the library, not including bound volumes of periodicals, proceedings of societies, maps and pamphlets not bound, showed 103,620 titles of books. On June 30, 1919, the corresponding number is 105,946, showing an increase during the fiscal year of 2,326 titles, a growth that may be considered satisfactory in view of the character and limited resources of the library. There has been a much greater proportional increase in the number of unbound pamphlets, many of which are awaiting classification and may prove to be of no permanent value. Comparatively few additions have been made to the collection of maps, the production of which has been largely suspended during the war, except of those which have been issued, from time to time, to exhibit the phases of military operations. Of such maps, many of which, however, are of doubtful value, a good collection has been made.

The conditions existing during the continuance of the war have had the effect of increasing very materially the cost of producing books and diminishing the output of works of permanent value in the fields of general history and literature. The production of works of substantial merit in the field of military history and the art and science of war has been practically suspended. With the return of peace, the re-establishment of the publishing business on new industrial and economic basis, and the restoration of facilities of importation from foreign countries, there will undoubtedly come a great increase in the production of works of permanent value, especially works of general and military history and technical military history and technical military books, of primary importance to this library. The increased cost of all books will make necessary some curtailment of the extension of our collections in some departments if the section of military books is to be properly maintained, unless the resources of the library are increased in proportion to the increase in the cost of books.

The following tabular statement gives the record of books taken from the library, for outside reading, during the year, classified as fiction and non-fiction.

STATISTICS OF CIRCULATION.

Month.	CADETS.				OTHER THAN CADETS.				Total for month.
	Fiction.		Non-Fiction.		Fiction.		Non-Fiction.		
	No.Vol.	%	No.Vol.	%	No.Vol.	%	No.Vol.	%	
1918									
July.	152	62	97	38	262	48	279	52	790
Aug.	108	54	92	46	249	55	196	45	633
Sept.	240	50	241	50	198	44	246	56	927
Oct..	188	40	281	60	290	43	382	57	1141
Nov.	131	49	137	51	260	39	399	61	927
Dec..	167	42	231	58	278	30	660	70	1336
1919									
Jan..	187	40	282	60	323	37	643	63	1435
Feb..	106	43	144	57	309	33	615	67	1174
Mar.	171	50	170	50	299	33	611	67	1251
Apr.	64	24	208	76	119	23	407	77	798
May.	125	34	227	66	112	26	315	74	779
June.	229	51	217	49	125	35	232	65	803

The library building has been repainted and repaired during the year and is now in excellent condition.

Many interesting and valuable gifts have been made to the library since the last annual report. Among the donors, to whom the thanks of the graduates, officers, and cadets of the Academy are due and have been tendered, are the following: the Carnegie Endowment for International Peace, Charles Scribner's Sons, A. Iselin & Company, American Museum of Natural History, Mrs. J. Marsden Lawton, Colonel Alexander S. Bacon, Charles Stewart Davison, The Houghton, Mifflin Company, A. A. Hopkins, Amherst W. Barker, The Yale University, General Claudon, Chief of

the French Advisory Commission, The Athenaeum Library, Boston, Mass., Colonel George Fabyan, New Jersey State Library, The Submarine Defense Association, The Honorable Simon E. Baldwin, Thomas Willing Balch, M. Camille Thurwanger, Arthur MacDonald, Major General G. O. Squier, Dr. J. Ackerman Coles, The Courier Journal, Louisville, Ky., The Yale University Press, General G. H. Estes, The Banker's Trust Company, George J. Baldwin.

Mrs. J. M. Hewson, of Washington, D. C., has deposited in the Library all the personal and official correspondence and other records of the late Lieut. General John M. Schofield, one of the most distinguished graduates of the Academy and at one time Superintendent, who had filled the offices of Secretary of War and Commanding General of the Army. Such a collection is invaluable for the purposes of the historian and the military student and the Library of the Military Academy is a fitting place of deposit for such a collection, affording it, as it does, ample security for the historical material and facility of access for those students interested in research. There is a prospect that other collections of papers of the same character will soon be secured for the Library.

A valued addition to the collection of portraits that adorn and dignify the Library was made by the gift of a fine portrait of General U. S. Grant, by Anderson, the contribution of Dr. J. Ackerman Coles, of New York City. Hitherto the Library had possessed no creditable portrait of the most distinguished graduate of the Academy, and we are sincerely grateful to Dr. Coles for his generous gift.

In connection with this it may be of interest to note that, by the action of some graduates of the Academy, there was presented to the Military Academy of the Argentine Republic a fine copy, by Arthur Dawson, of the original portrait of George Washington, by Gilbert Stuart, which hangs in our Library. The gift was made to the Argentine Embassy, by the Secretary of War, in acknowledgment of the courtesy of the officers of the Argentine Army who presented to this Library a portrait in oil of General Jose de San Martin, the famous soldier and patriot whom they revere as the liberator of South America.

J. E. RUNCIE,

Librarian.

THE CHAPLAIN.

The report of the Chaplain, the Rev. Clayton E. Wheat, shows the nature and variety of his many works in addition to the regular routine duties of his position; the extent of these works is not at all fully indicated by his abbreviated report. The Post of West Point, the Academy and the Chapel have been placed under renewed and lasting obligations to Mrs. James M. Lawton for the valuable and appropriate Chimes presented by her as a memorial to her father, General Robert Anderson, of which the Chaplain speaks. On the same day that the chimes were accepted and dedicated the Association of Graduates

at its Annual Meeting placed in the record of its proceedings the recognition of the Association that General Anderson was the originator of this Association just fifty years before, in the Spring of 1869.

Attention is again earnestly invited to the inadequate provision made for the support of the Chaplain; as has been stated before, both by my predecessor and myself, the salary is entirely inadequate to the importance of the position and not commensurate with the work done and benefit conferred. It is not creditable to the Government to expect to retain men as competent as the present Chaplain, so worthy to fill this important position, without a just compensation, which is not now provided. Under present living conditions one hesitates to specify how inadequate this compensation is; it is unjust to the individual and discreditable to the Government. The Chaplain's salary should be increased by at least one-half.

With the exception of certain statistical data the Chaplain's report is here given in full:

	*	*	*	*	*
Religious Services:					
Number of public services.....					224
Baptisms.....					8
Weddings.....					8
Funerals.....					42

Services were held as usual throughout the year in both the Cadet Chapel and in the Old Chapel. In the summer, when the cadets were in camp, field services were held for them at Battle Monument.

Sunday School for the children of the Post was held in the basement of the Cadet Chapel. The officers and teachers of the school were drawn from the Corps of Cadets. As a rule the members of the football team teach the Sunday School, but this custom could not be followed this year, in that there was no organized Academy team last Fall. The cadets who took charge of the classes were faithful and efficient in the discharge of their duties.

Cadet Bible Classes.—These classes met in the Cadet Chapel after the regular Sunday morning services, under the leadership of twelve officers of the Post. Over 200 cadets enrolled in the classes and much interest was manifested in the studies taken up. The officers would hold occasional meetings with the Chaplain to talk over the progress of the work.

The Miss Warner Bible Class.—This class is conducted during the summer months at Constitution Island by the Chaplain on Sunday afternoons. The associations that gather about the old Warner home where Miss Anna B. Warner taught the cadets for so many years in Bible study, and the historical setting of the spot, all contribute toward making the class helpful and enjoyable.

The Cadet Y. M. C. A.—This organization has been an important factor in the religious life of the Academy. Its officers take a lively interest in the morale of the Corps and have cooperated with the Chaplain in every suggestion made

to them that looked to the uplift of the life in the Academy. I accompanied a delegation of twelve cadets to the Northfield Student Volunteer Conference, where they heard men of prominence and students of many colleges and universities give their message of the importance of Christianity in men's lives. The Y. M. C. A. has had a monthly program of speakers through the year, and has helped in other ways along moral lines.

Two-Minute Services.—I held a two-minute service each day during Lent, directly after breakfast, for the Cadets. It was a voluntary service and yet was quite popular. There were never less than 200, and quite frequently 400 cadets who stepped in at that early hour in the morning to hear just a word to carry with them through the day.

The Chapel Organ.—Extensive additions are being made to the organ, the east gallery section being now in the course of construction and the installation of the new console in a less conspicuous place, and of a new blowing plant in the basement will greatly improve our present splendid instrument. This work is being supervised by the organist, Mr. Frederick C. Mayer, whose skill and personal interest together assure its being done in the most highly approved manner.

Cadet Chapel Choir.—Too much praise cannot be given to the choir for the splendid way in which they have done their part in making the Chapel services attractive and helpful. That they have been able to accomplish this, rendering difficult anthems and leading the congregational singing so acceptably, has been due in large part to the careful and painstaking work of our organist, Mr. Mayer, who has not spared himself in his efforts with the music of the Chapel. His organ recitals have been enjoyed and appreciated by cadets and visitors alike.

Memorial Windows in the Cadet Chapel.—During the year there have been twenty memorial windows installed and dedicated by the following classes: 1860, 1865, 1866, 1867, 1868, 1869, 1871, 1872, 1873, 1876, 1884, 1887, 1892, 1903, 1908, 1909, 1913, 1914, 1920 and 1921.

The Chimes.—On June 10, the Lawton Memorial Chime of Bells to General Robert Anderson was dedicated, and played for the first time from the Chapel tower. The chime consists of twelve bells, the largest weighing over two tons. The tone and quality of these bells are most pleasing and should add much interest and charm to our Chapel in its attractive setting.

Enlisted Men's Club.—This organization has been in operation for about five and a half years. It ministers to the soldiers on the Post on a cooperative basis. There are no dues to the Club. The use of the bowling alley and billiard room of the club library and reading room is open to all members. The lunch room is a great convenience in that it provides a place where refreshments and meals may be had under appetizing conditions, with no thought of making a profit, but simply keeping the club on a self-supporting basis. Such surplus as may accrue to the club is given to the members in the form of moving picture entertainments, free dances and similar benefits. The commanding officer of the Detachment of Engineers is the president of the club, and the Chaplain has the general supervision of the finances and policy of the organization.

The Children's Playground.—This is one of the most popular spots on the Post in the eyes of the children. Its swimming pool, swings, slides, wading pool, and various playground paraphernalia, all are kept busy from the time school is out until late in the Fall. I have a playground director, who takes charge of and directs the daily activities at the playground. A caretaker is also on the ground the year around, looking after the upkeep of the property and beautifying the place in general. This is financed largely by the cadet offerings through the year.

Camp for Boys and Girls.—The Boy Scouts and the Girl Scouts were each given a week's outing this year at Long Pond, where the days were spent in hiking and other healthful sports.

Motor Boat.—The Chaplain's motor boat which he uses for the benefit of all on the Post, giving them outings and river trips which they might not otherwise have, is being overhauled at the factory of the builders. It will make its regular daily trips this summer as soon as it is in order.

Charity Work.—The surplus of the War Work Fund, \$357.27, was turned over to me by the Custodian, by direction of the Superintendent, to be used for the purpose of a Local Relief Fund. This furnishes us with funds that will meet all ordinary demands and can be augmented from year to year. We have entered into an agreement with the visiting nurse at Highland Falls, whereby we can get her services as needed.

Children's Christmas Tree.—Each Christmas the children of the Post gather at the Cadet Chapel for their carols and Christmas tree. This is always looked forward to by them with much pleasure, as Santa Claus appears in person with his remembrances to make glad the heart of every child present.

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CLAYTON E. WHEAT,
Chaplain, U. S. M. A.

CHAPEL ORGANIST AND CHOIR MASTER.

The zeal, energy and enthusiasm of the organist, Mr. Frederick C. Mayer, seem to increase with time. Knowledge of his interest and ability continues to bring gifts for additions to the organ with the prospect of making it one of the finest in the whole country. Mr. Mayer deserves great praise for his remarkable success as choir master, in interesting cadets in the choir service, thereby organizing and maintaining a voluntary choir of one hundred or more members. Besides his regular duties as organist at Chapel services Mr. Mayer's recitals have been continued and are much appreciated and enjoyed by all nearby lovers of music.

It is now well known that Mr. Mayer is sacrificing his material welfare because of his interest and pride in the fine organ and in the work that he is doing here; this self-sacrifice should not be expected and as his services are very valuable to the Academy his salary should be increased without delay to at

least \$2200; this increase is also in large part demanded by the increased cost of living, independently of other justification.

THE QUARTERMASTER'S DEPARTMENT.

The report of the officer in charge of this department, Colonel E. J. Timberlake, is herewith appended in full and gives all desired information with regard to the various operations being conducted by the department. During Colonel Timberlake's absence from duty here (October 31, 1918, to April 1, 1919,) the work already outlined was carried on by Colonel S. R. Jones as rapidly as the winter season, the shortage of material and labor would permit. The annual financial statements of the Quartermaster are not herewith included since they are at all times available from the files here.

* * * * *

1. The following report of operations of the Quartermaster's Department, including the disbursing officer, U. S. M. A., and supply officer for the fiscal year ending June 30, 1919, is submitted:

2. The undersigned was relieved from detail in the Quartermaster Corps and from duty at this post October 29, 1918, and reported back for duty as Quartermaster March 31, 1919. During the period mentioned Colonel S. R. Jones, Retired, was Quartermaster of the Post.

3. *Quartermaster Corps.*—The Quartermaster Corps has performed the many duties devolving upon it in an entirely satisfactory manner during the past fiscal year. The detachment of the Quartermaster Corps now consists of 23 enlisted men. It has been practically impossible to keep the detachment filled up to its authorized strength of 38 enlisted men, due to demobilization of the Army. It has been necessary on this account, to request authority for hire of temporary civilian employees in order that the required work of the post should be carried out.

4. *Supply Officer.*—In addition to his duties as Quartermaster of the Post of West Point and disbursing officer, U. S. M. A., the Quartermaster is also designated supply officer. This change took place in accordance with regulations issued under the direction of the Director of Purchase, Storage and Traffic of the General Staff last Fall when many of the duties formerly performed by the Quartermaster Corps were taken over by the Director of Purchase, Storage and Traffic. As supply officer all requirements of whatever nature, including engineer, signal, medical, ordnance and quartermaster are now supplied through this office. This change has added very materially to the amount of work performed by this office and has required the hiring of ten additional clerks for this purpose. The new property accounting system prescribed in Circular 131, W. D., 1918, has been inaugurated covering the branches above mentioned, but the great amount of paper work and additional clerical hire is not considered commensurate with the results so far obtained at this post. This system has been inaugurated under the supervision of a commissioned officer from the office of the Director of Purchase and Storage, and it is believed has been given a thorough workout, but as far as can be ascertained at the present time, the great amount of paper work required has resulted in more

or less confusion with no better results than under the old property system. It has not been deemed expedient to start this system for accounting of the Military Academy property, and it is recommended that no steps in this direction be taken until the system already inaugurated for property purchased under provisions of the Army Appropriation Act has been perfected.

5. *Army Service Detachment.*—The usual work has been performed by the Army Service Detachment during the past year. It has not been possible to keep the detachment recruited up to its authorized strength, and at the end of the fiscal year there were 76 vacancies. Circulars have been prepared for distribution to the several recruiting offices in the Eastern and Southeastern Departments, and it is believed that suitable men for this detachment will shortly be obtained.

6. *Civilian Employees.*—The great volume of work of the office of the Quartermaster and Disbursing Officer, U. S. M. A., proper, has been efficiently performed by the present office force. The civilian clerks temporarily hired to take the place of enlisted men discharged from the service should be replaced by enlisted men just as soon as competent men are available for assignment to this post, as the services of men who have had previous military training in Quartermaster Corps is of paramount importance in the property accounting branch, where the temporary civilian employments have been authorized.

7. *Motor Transport Corps.*—During the past year all motor transportation of the post has been turned over to the Motor Transport Corps. The Motor Transport Corps detachment consists of 19 enlisted men; authorized strength 44. Due to the many discharges of enlisted men, it was necessary to call for authority to employ civilian chauffeurs in order that the motor transportation of the post should be kept in commission. Hire of nine chauffeurs at \$1,000 per annum and thirteen chauffeurs and mechanics at \$1,200 per annum was authorized. However, it has not been possible to keep chauffeurs at \$1,000 per annum, and it is necessary to pay \$100 per month in order to keep good chauffeurs. At the present time there are ten civilian chauffeurs and mechanics employed. These civilian employes are solely used for driving motor trucks and are not used on passenger transportation. The following is a statement of present equipment of motor transportation at this post:

- 15 $\frac{3}{4}$ -ton delivery trucks,
- 2 $1\frac{1}{2}$ -ton cargo trucks (one dump),
- 1 2-ton cargo truck,
- 16 3-ton cargo trucks,
- 3 5-ton dump trucks,
- 1 $3\frac{1}{2}$ -ton cargo truck,
- 2 7-passenger touring cars,
- 2 8-passenger touring cars,
- 1 16-passenger touring car,
- 14 5-passenger touring cars,
- 1 2-passenger touring car,
- 2 ambulances,
- 16 motorcycles with side cars,
- 2 motorcycles with machine gun side cars,
- 2 motorcycles without side cars.

The Motor Transport Corps performed the many calls made upon it in a most satisfactory manner and the entire equipment has been kept in almost constant daily use.

8. *Power Plant.*—The power plant has been efficiently and economically operated. One stoker has been installed during the year and is at present being tested out pending final acceptance and payment. The soot blowers authorized last year have been installed and are satisfactory. Considerable difficulty has been experienced in obtaining competent labor for the power plant, such as engineers, firemen and oilers. This is due mainly on account of small salary appropriated for this purpose. Congress has refused to appropriate funds for increases of pay for these employees, which has resulted in old men leaving, and it is practically impossible to obtain men who are willing to stay more than a few months. It is believed this condition could be remedied by placing these employees on a wage basis similar to that obtaining in plants of this character in nearby cities.

9. *Heating and Ventilating System.*—The work of upkeep of heating and ventilating system has progressed satisfactorily during the past year. Due to the exceedingly mild winter no serious difficulties of any kind were encountered. During the summer all the systems of the post were repaired and renovated as far as practicable with the funds available for the purpose.

10. *Fire Department.*—There was one house fire on the post during the past year. This fire occurred in officers quarters "H" and resulted in material damage to inside the quarters. This set of quarters is situated in a stone building, and the fire was confined entirely to one set. The damage has been repaired and the quarters are now occupied as quarters for Army Nurse Corps attached to the Cadet Hospital. Attention is invited to the fact that no action has been taken on request of this office forwarded to the Quartermaster General for a combined guard and fire apparatus house. This building is considered a necessity, as the fire apparatus is now scattered over the post and efficient work cannot be expected. The present guard house is entirely inadequate and not satisfactory for the purpose. An additional motor fire engine (La France) has been recently received and the men are being instructed in its operation.

11. *Gas Plant.*—During the year 27,176,500 feet of gas were manufactured. Over a quarter of a mile of street mains were overhauled and repaired; the exhauster has been overhauled also, and it is now running continuously day and night; new screens were installed in scrubber and one new bench has been erected. The above repairs and installations have resulted in a supply of gas of better quality and in greater efficiency of plant.

12. *Special Contingent Fund.*—This fund is authorized under provisions of Chapter 212, R. S., Act of Congress May 1, 1888, and disbursements are made under direction of the Superintendent, U. S. M. A. The wages of the personnel of the forestry department are paid from the Special Contingent Fund; also three firemen employed in the Gas Works and Power Plant receive pay from this fund. Other disbursements are made as authorized by the Superintendent.

Receipts during the fiscal year, 1919.....	\$16,764.51
Disbursements during fiscal year, 1919.....	21,010.61
Balance June 30, 1919.....	6,704.61

13. *Forestry Department.*—A woods foreman and four woodsmen have been employed during the year, and other men have been employed as required. During the summer of 1918, logs were hauled to the sawmill from the reservation, and the mill started operating in August, continuing for two months. Logs hauled to mill, 26,600 bd. ft. Mill tally of lumber sawed, 31,318 bd. ft. Rails cut, 800; posts cut, 700; bean poles cut, 1000. Numerous condemned shade trees were removed and several others planted. The trees on main portion of post were sprayed and trimmed. Cutting was commenced on Constitution Island during the summer and logs were rafted across the Hudson to the post. The fire hazard along the West Shore Railroad tracks was reduced. Measures were also taken for the protection of the white pine from the pine weevil.

14. *Public Works. Laundry.*—Construction upon the new laundry, now well advanced toward completion, has been retarded greatly by an insufficiency of laborers accustomed to construction work and delay in obtaining structural steel, columns and beams. Installation of machinery will proceed upon completion of interior of the building and the plant will be ready for occupancy and use in the Fall.

Quarters for Married Officers.—Proposals received for quarters for eight married officers being in excess of the appropriation, material is being purchased and work in progress for completion of these quarters by day labor, as they are urgently needed to provide living accommodations for officers assigned here for duty.

Cadet Barracks and Headquarters.—Contract has been awarded for construction of south wing of south cadet barracks and guard house and preparations are being made by the contractor to proceed with the work, rock blasting and excavation by day labor being well advanced toward completion.

North Dock.—Proposals received for reconstruction of north dock, being in excess of the appropriation, contracts have been awarded in open market for reconstruction in a permanent manner with concrete superstructure and deck. The appropriation is insufficient to allow dredging contemplated.

South Dock.—Contract has been entered into for reconstruction of north fender wing of south dock in a permanent manner with concrete deck.

Cadet Camp.—The grounds for encampment of the Corps have been extended, streets laid out and facilities provided for the increased number of cadets, including underground electric ducts, lighting and telephone cables, water mains, drainage and sewer piping, also an additional temporary latrine.

A new permanent latrine building, fitted with additional latrines and baths, is urgently needed for adequate accommodation, and to replace the older unsanitary latrines inconveniently located for access from camp as now arranged.

Artillery and Cavalry Group.—Proposals have been received for construction of east wing of gun shed and wings for artillery and cavalry barracks within the limit of appropriations available for such construction.

Proposals will soon be invited for construction of addition to artillery stable and quarters for twenty bachelor officers.

15. *General Repair and Upkeep*.—The repair work of the post has been performed and improvements undertaken as justified by funds available for the purpose.

16. *Roads*.—The roads of the main portion of the post have been kept in as good condition as possible within the fund appropriated.

17. *Disbursements*.—The following disbursements were made during the past fiscal year:

Quartermaster.....	\$2,061,618.27
Disbursing Officer, U. S. M. A.....	585,640.58
Total.....	\$2,647,258.85

E. J. TIMBERLAKE,
Colonel, Coast Artillery Corps,
Quartermaster.

THE POST SCHOOL.

Owing to the many changes in the official personnel of the post, the supervision of the children's school has devolved upon several different officers, but the interest and competency of the principal of the school and his assistants, the other teachers, have accomplished excellent results, as well as could be expected under the limiting conditions. It is very important for the post that the effort to secure a new school house, so long sought and desired, be pressed with renewed energy.

The report of the present supervising officer, Major V. W. Wales, here follows in full:

* * * * *

The following report of the children's school for the fiscal year ending June 30, 1919, is submitted:

The organization of the school for the year was as follows:

	Grades	Pupils
Mr. Earl E. Graves, Principal.....	8th	16
Miss Margaret Noonan.....	6th and 7th	35
Miss Henriette Schopper.....	5th and Sewing	15
Miss Mary Ryan.....	3d and 4th	46
Miss Anna O'Connor.....	1st and 2d	45
Total.....	8 grades	156

The above organization is the same as last year except that Miss Ryan held the position formerly occupied by Miss Amy Driscoll who resigned at the close of the preceding year to accept a better position.

Miss Henriette Schopper, who has taught 5th grade, 5th to 8th grade sewing, and 8th grade penmanship satisfactorily during the past three years, has resigned to accept a position at a higher salary, and her place has been filled by

the appointment of Miss Gertrude M. Goetz. Miss Goetz comes as a graduate of the New Paltz Normal School well qualified for the position, being highly recommended by her instructors and those under whom she has taught.

The appropriation of \$4780 for the maintenance of the school was expended as follows:

Pay of principal	\$1280.00
Pay of four grade teachers	2400.00
Pay of janitor at Chapel	100.00
Purchase of books, stationery and other supplies	610.56
Repairs to buildings and equipment	380.84
Balance on hand at end of year	8.60
	\$4780.00

The school was opened on Tuesday, September 5, 1918, and closed on Friday, June 20, 1919. Owing to the epidemic of Spanish influenza in the Fall school was closed from October 7 to November 4, 1918, both dates included. Every effort was made to overcome this loss of time by more intensive work and good progress was made in that direction. The school throughout is so nearly up to the standard that should prevail had the term not been interrupted that the work of the next term can go ahead without hindrance.

A class of thirteen pupils was graduated from the 8th grade at the close of the year ready for entrance to high school. Among these were two who were promoted from the sixth grade to the eighth at the close of the previous year by reason of excellent standing and both were among the best of the class at the close of the term, though one was but eleven years of age and the other but twelve. One of the difficult problems in a school of this kind is the treatment of the exceptional pupil and this is receiving special attention. There are throughout the school both those who are able to advance more rapidly than the average and those who find difficulty in advancing as rapidly as the average, and an effort is made to enable both classes of pupils to advance as rapidly as their respective abilities permit.

As was recommended at the close of the previous year effort was made to incorporate a course in physical training to include organized play, but as funds were not available for this purpose it was impossible this year. It is hoped that by another year this course can be started as it is believed that it would be of great value as the better physical condition would tend toward greater mental alertness.

The sale of Thrift Stamps and war Saving Stamps at the school was continued with good results both in number of sales and the training in patriotism and in habits of thrift.

The attitude of the teachers toward the pupil has been commendable, in each instance their sole effort being for the advancement of the children along proper lines. The discipline of the school has been good and a really high standard been maintained throughout. The poor housing facilities of the school have been somewhat of a handicap, but the effort has been not to have the progress of the children affected. The better building which it is hoped can be

provided in the near future will make possible the training of the children along broader lines, including more social activities, thus fitting them for better citizenship.

V. W. WALES,
Major of Infantry.

ACKNOWLEDGMENTS.

In conclusion I would repeat and emphasize the statements of my last report as to the zealous and efficient efforts of the Academic Board in meeting and solving in the best interests of the service the many difficult problems of academic administration which were developed by the war emergency. The system of instruction established through long experience was greatly dislocated by the war and only by the able and unremitting work of the Board as a whole and of its individual members was it possible to obtain fairly satisfactory results. The Board throughout the past has been the continuing, developing and stabilizing factor of the Academy in all the valuable results of the institution and its influence should not be diminished or its conclusions disregarded. Service with this body will convince anyone of the ability and high purpose of the Board collectively and individually.

The Headquarters staff and office assistants have continued to deserve the highest commendation for unremitting zeal and efficiency in the increased routine work of the office, and also in the varied and unusual labors of the emergency situation; the results accomplished herein are in large part accredited to Mr. Isaac A. Boyle, the chief clerk. It is strongly recommended that the consideration asked elsewhere in this report for specific members of the force be approved by higher authorities.

The members of the military staff have been most efficient in the performance of their respective duties. Especially is the Academy and Post, as well as myself, greatly indebted to the labors of the Constructing Quartermaster, Colonel E. J. Timberlake, and the Adjutant, Lt. Colonel W. A. Ganoe, for the satisfactory administration which has prevailed under such unusual conditions. Through the military experience and knowledge of these two officers and through their impartial regard for the public interests the Superintendency of the Academy and the administration of the Post has been made far less onerous and much more efficient.

S. E. TILLMAN,
Brigadier General, U. S. Army,
Superintendent.

