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Perspectives in the History of Military Education and Professionalism  
Richard A. Preston, 1980

An anniversary is a time for the recognition of achievement. At its twenty-fifth anniversary, the United States Air Force Academy, although young among the world's military colleges, has achieved a great deal. Created in time to produce officers for America's longest and most difficult war in which air power was a prime factor, it was invaluable for the production of officers for the prosecution of that war. At the same time, with the twin advantages of the experiences of its sister colleges and a new start, it has pioneered progress in military education.

But an anniversary is also an occasion for self-examination. In 1902, Julian Corbett, historian of the Royal Navy, fearing that in a crisis the Navy might be found as deficient as the British Army had recently been in South Africa, wrote as follows: "When we see a department of state [he meant the Admiralty], sitting aloft like Buddha contemplating its own perfections, experience assures us there is something seriously wrong. Any airy admission that you have reached your standard of perfection is a certain indication of decadence . . . It is an old and treasured saying that Waterloo was won on the playing fields of Eton. It is at least equally true that Colenso [a shattering defeat at the hands of the Boers] was lost in her classrooms." Armed forces must meet whatever changes social and technological developments require, otherwise, as Corbett warned, they will "rot."<sup>1</sup> This principle applies equally to service academies.

Lt. Col. David MacIsaac of this Academy has indicated that the Vietnam War led American professional long-service officers to ponder seriously the role of the military in society.<sup>2</sup> Any such consideration must take into account the past history of officer production. As no full definitive history of military education exists to guide us, this brief lecture can only be my personal assessment of a few vignettes to stimulate thought and decision on a topic that demands continual attention.

I shall address the creation of professional officer corps in Prussia, France, and Britain during the nineteenth century and add a few observations on the adaptation of officer corps to the needs of the twentieth century, with special reference to developments in the United States. These three examples were chosen because they are in the period when military professionalism developed. Although the social climate was different from today's, when due allowance is made for that circumstance, the problems faced were remarkably similar to ours. If my survey does no more than demonstrate that the problems we face in military education are complex and persistent, and that attempted solutions have almost invariably fallen short, it will have served its purpose that of encouraging open minds to accept the need for continual adaptation.

But I must first trace some aspects of officer development prior to the nineteenth century to show why military academies emerged. Greek citizen phalanxes and Roman legions had more in common with modern military organizations than had the feudal levies that followed them. Some classical military formations, the phalanx for instance, may have been deliberately imitated in the early modern period, and classical education and thought were dominant in the Western world until late in the nineteenth century; so we might expect to find some continuity in officer production from the classical period or some parallels. But the rigid phalanx, as well as the somewhat more flexible legion, had little need of junior officers and thus of officer training. Greek hoplites were literally pushed into their places in the ranks, and orders were passed back from front to rear. The liberty-loving Greeks also talked back to their instructors. Most Greek armies were led by elected officials. Early Roman legions were commanded by aristocrats who served first in the cavalry. Centurions were more like

senior NCOs than company commanders or platoon leaders, and they had no prospect of senior command.<sup>3</sup>

Yet there were precedents. Xenophon tells us that Socrates quizzed a man who had attended a military school and found that his course had been limited to drill. The great philosopher commented that drill was only the smallest part of military command, and he noted the need for instruction in supply, planning, and effective management. He also said that intelligence was more important for leadership than long experience.<sup>4</sup> This anecdote suggests that problems that recurred in later periods have a long history; but neither the Greeks nor the Romans succeeded in fashioning an effective system for overcoming them or for training officers. We have inherited nothing in this area from the classical period, unless it is the negative lesson that lack of a sound officer corps backed by good education and training may eventually be followed by decay.

Feudal society and feudal armies were very different from those of our own day, yet some aspects of their military leadership have exercised a great influence on ideas about military education right down to the present. Knighthood was the equivalent of a commission and the qualification for command in the field.<sup>5</sup> But the knight received no military education except weapons training for, and in, tournaments. His early training as a page had been designed to teach loyalty and obedience and to be a civilizing process, a kind of general education. In his next stage, squirehood, he had been an aide to a knight, carrying his armour and learning to handle weapons.<sup>6</sup> Chaucer's description of the squire strikes a familiar note. He was,

A lover and a lusty bachelor  
.....  
Of twenty years of age, . . . I guess  
Of his stature he was of medium height,  
And wonderfully active and great of strength  
.....  
Singing he was, or fluting all day,  
He was as fresh as in the month of May  
.....  
Well could he sit a horse and excellently ride,  
He could songs make and well indite,  
Joust, also dance, draw well, and write.  
So hot he loved that by the nightertale  
He slept no more than doth the nightingale.  
Courteous he was, lowly, and serviceable,  
And carved before his father at the table.<sup>7</sup>

The duty in the last line is I believe now restricted to fourth-classmen; but most of the rest of the description-with suitable allowance for the day and age-could fit most modern cadets. A fifteenth-century source said it was "proper that a squire first serve and be subject before he became a lord. Otherwise he would not understand the nobility of his authority when he became a knight."<sup>8</sup> Although some modern psychologists have denied that one must learn to follow before one can lead, this is still one of the fundamentals of cadet training.

The most important concept knighthood had handed on to us is the code of chivalry. In the Middle Ages, religion and chivalry became inextricably mingled, and though the general education of the knight did not include much of contemporary scholasticism, the church taught him simple lessons of honor and conduct.<sup>9</sup> Those whose business it was to administer force (or to "manage violence" in the terminology of modern sociology) had to use it only for the protection of the fair sex and the weak, that is to say, of civilization. Most modern armies have adopted from that source the idea that an

officer must have the qualities of a gentleman. Although it is no longer associated with aristocratic birth, this idea is still an essential concept in character development for military professionalism.

Feudal military structure, based on the service of the knight who held land in return for providing defense, stability, and security, was remarkably effective in those respects over several centuries. Yet, from the first, the feudal hierarchical structure had innate weaknesses as a command system. As a result, two distinct phenomena appeared, especially after the rise of a money economy and cities. These were mercenary troops and city-state militias.<sup>10</sup> John Schlight of this Academy has shown that the role of mercenaries in medieval warfare has been greatly underestimated;<sup>11</sup> and Professor Alfred Vagts in his *History of Militarism* has argued that what smashed feudalism was not a technical invention, gunpowder, but socio-political change represented by the phalanxes of plebian pikemen from the cities and rapid-firing cross-bowmen and long-bowmen.<sup>12</sup> Mercenary leaders of these new forces presumably learned their trade by a kind of apprenticeship system. Thus Gonsalvo de Cordoba, the "Great Captain" who served the Emperor Charles V in the sixteenth century, taught two successive generations of military leaders through apprenticeship.

Machiavelli had already shown, however, that independent mercenary bands were a menace to order and that they could be at the same time militarily inefficient.<sup>13</sup> Feudal monarchs, and also the bourgeoisie, wanted a more reliable military force and system of command. Jacques Coeur, the merchant financier who was adviser to France's King Charles VII in the fifteenth century, suggested a means of overcoming the unreliability of mercenaries, namely, by the creation of a standing army to take some of them into permanent royal service.<sup>14</sup>

What was needed next was a means of producing officers for the royal army. Several centuries were to pass before service academies were created to meet this need, but France, the strongest power in Europe in the seventeenth and eighteenth centuries, began in the meantime to move in that direction. Although the French nobility had resented Charles's usurpation of their traditional right to raise and command troops, many young gentlemen sought careers in the royal armies. There were two roads to a commission: by service as a page in a royal or noble court or by service as a gentleman-volunteer in the ranks. Unfortunately, both methods had serious shortcomings. Pages, like their medieval predecessors, saw the finer side of contemporary life but got little or no military instruction and discipline. In 1587, Francois De la Noue declared that pages had become slack in speech, blasphemous, destructive, and mendacious. They were as inattentive to lessons in mathematics (already becoming important for the profession of arms with the introduction of gunpowder) as they were to sermons. They rejected discipline, dressed improperly, caused mayhem in the streets, and even fought pitched battles with rival pages of other courts.<sup>15</sup> On the other hand, youths "trailing a pike" as gentlemen-volunteers in the regiments got practical military experience but learned discipline from the debauched men who were their teachers. De la Noue's proposed solution was the establishment of military academies.<sup>16</sup> In 1604, Henry IV did found a military school at La Fleche for the sons of penurious nobles and the orphans of officers. He put it under the control of the leading educators of the day, the Jesuits. But as it stressed general education and moral instruction for boys, the school at La Fleche was more likely a preparatory school or junior military college than a modern military academy.<sup>17</sup>

For the next century and a half, the French Bourbon kings experimented with various means of establishing a loyal and efficient officer corps. The natural source of officers was still from among the descendants of the feudal nobility who regarded military leadership as their natural gift and right. The monarchy wished to use them to counterbalance the growing economic power of the bourgeoisie, and with landed property declining in relative value, a career in royal service was an attraction. But the nobility, especially those who lived in the provinces, preferred robust sports to literary studies. Many were unschooled and also resisted intellectual effort and study. Courses at court for young nobles, the attachment of "cadets" (younger sons in aristocratic families) to regiments in the army, and the creation of special companies of cadets stationed in garrison towns, were all tried from time to time to train young officers, but they were as often abandoned because discipline was difficult to maintain or

because the cadets resisted academic instruction. A few sons of farmers or city merchants managed to break the nobles' monopoly of commissions by the end of the eighteenth century, but these were rare exceptions to the rule that military leadership was based on birth and to its assumed corollary that nobly born leaders had little need for systematic education or training.<sup>18</sup>

A growing need for mathematical expertise in warfare prompted a break in this traditional monopoly of commissions by the nobility. The development of artillery and fortifications, the use of geometric knowledge to invest cities and even to conduct infantry drill, and the emerging science of sea navigation all figured in the appearance of technical academies at the end of the seventeenth and the beginning of the eighteenth centuries. Two such schools became more than transitory: the Ecole du Corps Royal du Geme at Mezieres, which gave the most advanced technical education in France beginning in 1748-49, and the artillery school established at La Fere in 1756. Because the nobility looked down on the technical commissions offered by these schools, Louis XV's Foreign Minister, Count D'Argenson, the founder of Mezieres, admitted sons from middle class families.<sup>19</sup>

The first non-technical military academy appeared almost concurrently in 1751 when Louis XV founded the Ecole Royale Militaire in Paris. That monarch questioned the attitudes of officers who confused honor with bravery and were more inclined to die uselessly than to accept instruction in military knowledge, as well as the views of those educated in the contemporary colleges and schools stimulated by the Enlightenment and emphasizing rhetoric and literary studies who were inclined to question orders.<sup>20</sup> Even though Louis was worried lest the disorders earlier experienced in the cadet companies would recur at the Ecole Royale Militaire, he let himself be persuaded by D'Argenson and the royal mistress, Madame Pompadour, to open the new academy.<sup>21</sup>

At first, the Ecole Royale Militaire admitted boys from eight to eleven years old whose four grandparents were all of noble birth to give them an eight-year course leading to commissions as lieutenants. There were scholarships for the sons of impoverished nobles, but the wealthy nobility gained a monopoly of the school's advantage. In 1776, this school, for which the admission age had been raised to fourteen, was closed down for a year when the old problem of cadet insubordination broke out. After the Ecole Royale Militaire reopened, it became the centerpiece in a reorganized officer training system, preparing only the best graduates from ten colleges in the provinces. The top Ecole Militaire mathematical graduates joined the artillery; others went to the non-technical corps. The most famous graduate of this system was Napoleon Bonaparte, who started his preparation to be an officer at the regional college in Brienne and graduated from the Ecole Militaire in 1785.<sup>22</sup>

At this Academy's 1969 Military History Symposium, Professor David Bien produced contemporary evidence that suggested that when Ecole Royale Militaire was founded there was a conscious intention to stress mathematics, not so much for its immediate military application as because contemporary civilian education was based on rhetoric and the classics which were believed to be more suitable for training the minds of scholars than of soldiers. Bien saw a deliberate intention to make the army a separate world by virtue of its distinctive educational system.<sup>23</sup> This argument, that mathematics is more suitable than are the liberal arts for training minds to make the kinds of decisions that a military man faces, has long been used in support of a mathematical curriculum in military academies and has persisted to our time. Whether the argument is as valid today as it was then is a matter of debate.<sup>24</sup> However, what was probably more important about the establishment of the Ecole Royale Militaire than its mathematical bent was that the French had discovered that the best way to produce officers was in a military academy rather than through apprenticeship training with the regiments. That discovery included not merely the realization that the academy was more suitable for cultivating study; it also made for better discipline.

During the nineteenth century, military and naval academies proliferated. Although the French royal academies were abolished during the Revolution as havens of privilege, they were soon replaced by very similar institutions. About the same time, Sandhurst opened in Great Britain and West Point in the United States. The creation of similar academies within a short space of time in three of the great

democratic powers of the future was largely coincidental. Yet their appearance provided each of those three countries at almost the same moment with the essential base for what emerged in all great states during the course of the nineteenth century, a military profession that could claim in important respects to be kin to the older professions of law, medicine, and religion.

Samuel P. Huntington has shown that a profession differs from a trade in that the skills involved are not merely mastered by an apprentice "without reference to what has gone before," but are general in application without respect to time or place, are intellectual by nature, are capable of preservation in writing, and are dependent upon knowledge of their historical application. Furthermore, the professional man or woman has a responsibility in the functioning of society and is a member of a corporate association or bureaucracy that governs the application of his or her skills. The particular function of the military profession is the organized management of violence in the interests of the preservation of society, a very complex task without which civilization cannot exist and one which therefore requires intensive study and dedication.<sup>25</sup> Military professionalism calls for a trained mind and for a broad study of war's purpose and of methods and problems in conducting it. The officer who is only interested in drill, ceremony, and discipline, important as those are, is thus not fully professional. Nor is the technical expert ipso facto a military professional. Finally, the officer trained only for low-level tactical operations is not yet a fully-trained professional in the complete sense. Military academies, even though usually not the only means of entry to a professional career, set the basis for, and the criteria of, professional standards. Academies thus have made military professionalism possible. In turn, they have had to meet requirements which professionalism imposes.

Everyone in service academies is aware that there is an inherent conflict between two aspects of officer production, education and training.<sup>26</sup> Military training is assumed by its advocates to produce greater dedication, decisiveness, loyalty, leadership, and technical proficiency, while education is supposed by them to disperse effort into often unnecessary and irrelevant intellectual pursuits, foster questioning and diffidence, and endanger the essential homogeneity of a disciplined force. From the opposite point of view, education is held to develop independent and original thought, while too much devotion to training is alleged to crush initiative and to close minds.

This supposed dichotomy is, however, misleading. Brig. Gen. Robert McDermott, one of the founding fathers of this Academy, has shown that there is no truth in the belief that an academic program promotes intellectual talent at the expense of leadership training or personal athletic ability;<sup>27</sup> and Col. Monte Wright, another former member of this faculty, has argued persuasively that the apparent conflict in the Academy is valuable preparation for confrontations that cadets will meet later in their careers.<sup>28</sup> Excessive stress on the conflict between training and education is, however, unfortunate because it detracts from the overriding goal, production of a professional officer who can meet all demands made upon him in peace and in war. The most serious result of this overemphasis on a dichotomy in officer production is that it grossly oversimplifies the tensions that lie within systems of military education. What I plan to do here is to examine nineteenth-century examples of those tensions.

There are at least three, perhaps four, distinct processes within officer-production systems. These are the development of personal qualities of character and leadership, general education, military training, and professional education.<sup>29</sup> But there are large areas of coincidence among all four of these major objectives and processes. Thus general education is what any educated man needs to enable him to lead a useful life in society, including following any chosen career or profession; but some general or liberal studies also have considerably more relevance than others to professional military development. Furthermore, character-building is an essential component of all other elements.

But what was most important historically in regard to these four processes in officer-production was the time in life when each occurred, that is, in early youth, on reaching early manhood before commissioning, or later in an officer's career. Another complication was that the education of special technical officers appeared to require different curricula from that for line officers in the army, deck officers in the navy, and flying officers in the air force. More difficult was the identification of military

character with social position. These problems have had a long history during which service academies responded imperfectly to technical, and even more so to social, change.

Although nineteenth-century military technology and the teaching of practical science in military academies no longer had the monopolistic lead enjoyed in eighteenth-century Europe, the obvious need to keep abreast of potential enemies, as well as the spinoff for non-military development, were incentives that inspired one aspect of professionalism and propped up the quality of military technical academies and the technical corps. But it was very different with officer-production systems as a whole. There were, of course, many officers in all countries who, from habits and interests developed in early schooling or from personal inclination, continued to grow intellectually throughout their careers. But in the officer-production systems as they became institutionalized, identification of qualities of leadership with those of an upper class, resistance by many officers to intellectual effort that seemed to them to be alien to the practical job of soldiering, the concept that a mathematical foundation essential for technical officers was also the best means of fostering the kind of mind all officers required, and the classical tradition in British public school education hampered progress towards effective reform of military education and the leavening of the whole officer corps.

Huntington credits Prussia with having originated the military profession.<sup>30</sup> In the eighteenth century, German princes had imitated French experiments with cadet companies and had then turned to Kadet-Akademien. These academies instructed artillery officers in mathematics but often despised other scholarship as "useless drivelling." Frederick the Great, who once said "if experience were all a great general needs, the greatest would be Prince Eugene's mules," set up a special school in Berlin to turn out scholarly staff officers, but he did not attempt to raise the intellectual level of the vast majority of army officers who came from country districts where a preliminary education was not available.<sup>31</sup> However, after the great defeat at Jena in 1806 at the hands of Napoleon, a Prussian cabinet order dated August 6, 1808, declared that the selection of officers in peacetime, and their further promotion, should be based on professional knowledge and education.<sup>32</sup> In theory and in law, this was a case for military professionalism and the death-knell of the Prussian landed aristocracy's monopoly of commissions through the concept that birth endowed the qualities needed for leadership.

The Prussian avowed objective in the nineteenth century was to ensure that all officers had a good general education followed by a sound professional education. Most young officers came from cadet houses, residential military schools with many free places for the sons of army officers and state servants, which were designed to build a strong military spirit. They gave a general education with professional subjects only in the senior year for selected cadets. Preselected prospective officers passed from the cadet houses to conscript service in the regiment before going on to divisional schools for professional education. In the divisional schools, military authorities exercised strict control over the quality of instruction. Classes were small and were said to cultivate powers of reasoning rather than the accumulation of factual knowledge. Curricula were practical rather than theoretical. Mathematics (which was left for later study by those who showed aptitude) and languages were excluded. Instruction was limited to reconnaissance sketching, military law and administration, drill, fencing, riding, and gymnastics.

The operation of the Prussian system was, however, much less open than it appeared on the surface. So much attention was given to accepted practical military qualifications, both moral and physical, that those attributes were often allowed to compensate for partial failure in theoretical attainments.<sup>33</sup> Cadet houses were class-ridden and largely restricted to the sons of the nobility. Competition was minimized throughout the whole Prussian educational system, and in the Army, it was confined to promotion to the senior class in the cadet houses and to entrance to the War Academy for senior staff officers. The reference to educational qualifications in the cabinet order in 1808 had indeed been qualified by a statement that "the chief requirements for a good officer are not knowledge and technical ability alone but presence of mind, rapid perception, punctuality, and accuracy, not to mention proper behavior." As Army entrance examination standards were low, colonels of regiments

used this to give preference to applicants with noble backgrounds;<sup>34</sup> and regimental messes also exercised a veto on admission to their comradeship.

In his book *The German Officer Corps in Society and State, 1650- 1945*, Karl Demeter argued that throughout the nineteenth century there was a great struggle in Prussia between those who wanted to improve the intellectual quality of the officer corps and those who emasculated the regulations in order to permit the aristocracy to retain its privileged position on the alleged ground that it provided the best military leadership. "Military die hards" regarded bourgeois officers as an unfortunate necessity. In 1859, when study in the divisional schools was made obligatory for all officers except entrants from the universities, it was deemed necessary to add that bad spelling and grammar were to be causes of rejection, an indication of the prevailing acceptance of low standards from the cadet houses. An attempt to impose a university entrance standard on the commissioning system was unsuccessful, and special exceptions from educational standards continued for members of noble families. The debate raged on until the eve of World War I. In 1860, sixty-five percent of the total officer corps was of noble birth. By 1913, the percentage had been reduced to thirty, but that reduction had only come about because of the great shortage of officers. The rationale for the theory that noble birth provided the necessary personal qualifications for military leadership often even went as far as an assertion that too much education made bad officers.

The nineteenth-century Prussian officer-production system thus assumed that an officer's general education had been completed before commissioning but did not ensure this by competitive selection; furthermore, it allowed an assessment of personal characteristics, often based on social class, to override educational qualifications. Post-commissioning training was practical rather than theoretical and did not encourage intellectual effort.<sup>35</sup> Prussian military professionalism, much admired by the end of the nineteenth century, was thus not maintained by the system of selection or by the quality of the divisional professional schools, but rather by competitive selection for the high level War College and the General Staff. The Prussians fell far short of their ideal of professional standards for all officers as announced in 1808.

In contrast to nineteenth-century Prussia, the rejection of aristocratic privilege in France reduced the potential impact of social discrimination in officer-production. The Revolution had brought the closure of Mezieres as well as of the Ecole Royale Militaire, and as Robespierre wanted to officer the Army with sans-culottes, he opened a purely training school called Ecole de Mars. But as this did not provide technical officers, a civilian engineering school, Ecole Centrale des Travaux Publics, was established in 1794. A year later it became the Ecole Polytechnique charged with producing qualified technical men for the Army as well as for public service. In 1803, after Robespierre's training school had proved quite useless, the Consulate opened the Ecole Speciale Militaire at Fontainebleau, which moved the next year to St. Cyr. Polytechnique and St. Cyr, the two military schools offering commissions, quickly became popular because they were among the top scholastic prizes to which a young man could aspire and they were almost the only route to the best employment under the state. By the time of Napoleon III, they had given a great impetus to the nation's education because the lycees fashioned their curricula towards their entrance examinations. From St. Cyr, many graduates went on to the Staff Schools and the General Staff.<sup>36</sup>

Both St. Cyr and Polytechnique were for young men who had completed their general education in the excellent lycees that Napoleon had founded rather than for young boys of secondary school age as in the Prussian system. Because the entrants into St. Cyr and Polytechnique were assumed to have completed most of their general education, the courses in the academies were directed towards professional development. Professional education at both schools was largely theoretical and academic, stressing mathematics and science, and it was assumed that capacity for practical application would be acquired in the regiments. At St. Cyr, however, there were, especially after 1856, lectures in military history and literature, subjects which were neglected in school competition for entry.<sup>37</sup>

The big difference between the French and Prussian systems of education, both generally and in the services, was that France placed heavy emphasis on competition and recruited more widely. Entry to the Polytechnique and St. Cyr was by academic competition (with particular attention to mathematics), and there were competitive examinations throughout the courses. There was fierce competition for the twenty-five to thirty places available in the Staff School which went to St. Cyr graduates. Because Ecole Polytechnique was the means of entry to civilian employment in government technical positions, the standards of the military engineers and artillery officers who graduated from there were enhanced. Choice of career and of service depended on placement in examinations.

The standard of education of French officers in the nineteenth century was higher than, for instance, that of their contemporaries in the British Army, but according to Charles de Gaulle, they lacked broad vision. Before the Franco-Prussian War, a noticeable difference from Prussian military education was that education virtually ceased on commissioning. There were no post-commissioning schools in the French Army except for the staff schools and the practical engineering and artillery school at Metz. Study (except of cartography) was frowned on as a self-serving attempt to gain at the expense of brother officers. This standard of values was to linger on after 1870 when, for instance, one candidate for promotion, who advanced as his chief qualification that he had studied geology, found that the board had no use for him until it learned, "He rides a horse like a centaur." Gen. MacMahon is alleged to have said that he removed from the promotion list any officer whose name he found on the cover of a book. According to the historian of the French Army, Revol, the usual qualifications for promotion were a good physique, good health, and a correct bearing. He said that in the infantry the latter meant looking upon an officer's work as being similar to that of a corporal: holding the thumb tightly to the stripes on the pantaloons, and keeping the eyes fixed fifteen paces ahead while listening to the colonel. There were many first-class specialists in the French Army, former Polytechnicians, but they were ironically called *savantes*; and, unfortunately, the special nature of their technical knowledge blocked broad vision. Other officers gifted with superior intelligence too often stayed so long in an office job that they lost their sense of action. Competition in academic examination for entry to St. Cyr and Polytechnique and in their curricula had thus failed to develop adequate professional standards because intellect and education were given inadequate weight in further promotion. In 1870, the failure of military professionalism added to other weaknesses contributed to defeat.<sup>38</sup>

As had been the case with Prussia in 1806, France's downfall led to a military revival. The period of conscription was raised to five years, a more effective staff college was established, and officers received instruction in handling large formations. Applications for St. Cyr increased significantly, and the great majority of Polytechnicians chose a military instead of a civil career. Several new schools were founded for NCOs and for the various corps of the Army, and French officers gained a habit of work they had previously lacked. They began to write technical papers, and their intellectual standards continued to compare favorably with those in any other army right down to 1914. The enlargement of the Army provided more opportunity for commissions and promotions, and the officer corps attracted a new elite. The Army basked in public favor.<sup>39</sup>

This new prestige of the military did not last. French democratic opinion was opposed to the formation of a military caste like that in Germany fed by its junior military schools. A call for economy in the 1880s led to a reduction of the period of conscription to three years, and public opinion compelled the application of conscription to the sons of the rich and to intellectuals who had hitherto avoided it. As a result of these things, hostility in important quarters brought ridicule of the Army by part of the public press. Long periods of garrison duty in peacetime soon had their usual effect, the fostering of sedentary attitudes that weakened the spirit of the officer corps. Career openings became limited, and promotion was subject to favoritism. Unpopular colonial campaigns and unpopular duty in aid of the civil power to suppress strikes and disorders undermined morale and threatened the French officer's freedom of thought. Reduction of the term of enlistment to two years after 1905 imposed heavy training duties on the officers and NCOs. Political disputes between left and right in the nation

and the Boulanger and Dreyfus incidents which stemmed from them removed much of the patriotic glow that had transformed France in the 1870s. In the twenty years before 1914, the number of candidates for St. Cyr fell from thirty-four hundred to eight hundred. There was a deficiency of eight hundred lieutenants in the combatant arms, and there were increased applications for commissions in the service corps. In the Army and the country, acrimonious disputes arose about the relative merits of a professional army as against an "armed nation." By 1913, staff teaching had fastened, as if in desperation, on a faulty creed of strategic and tactical offensive in all circumstances. Gen. Charles de Gaulle claimed later that the extent to which promotions to high command came to depend on political compromises meant that in 1914 half of the generals had to be dismissed. France's military revival after her defeat in 1871 and the cultivation of intellectual interests in her military educational institutions had been unable to overcome the country's internal maladies which were to bring her close to defeat in 1914-18.<sup>40</sup>

In Prussia, the military disasters in the Napoleonic wars had been the impetus for change. In France, the Revolution had brought military professionalism, and defeat in 1871 had reinforced it. Britain, lacking either of these impulses and safe behind its naval shield, retained its eighteenth-century military system for at least half a century after reform had come on the continent. British officer-production continued to be built around the concept that military leadership was a natural concomitant of social status. Until purchase was abolished, there was no possibility of the British officer corps acquiring professional qualifications to fit it to meet the problems of modern wars.

But for a long time the purchase system was popular. It produced an officer corps, relatively cheaply for the taxpayer, from the younger sons of the wealthy classes. For many officers, a commission was an investment that yielded a pleasant career, social amenities, and the equivalent of a retirement pension. As in the eighteenth century, officers came from a class accustomed to giving orders and whose authority was accepted by subordinates. Many of these officers possessed a high sense of honor and duty and were conscientious, keen, and strong in morale based on regimental pride.<sup>41</sup> Indeed, a leading British military historian, Brian Bond, argues that there is overwhelming evidence that the aristocratic officers of the nineteenth century had a passionate concern for professional development.<sup>42</sup> It must also be noted that the sons of upper middle-class families, fashioning themselves on the landed gentry, were included by a system in which money bought the admission ticket.

On the other hand, purchase was a deterrent to efficiency when the Army continually emphasized the importance of character, which it equated with class, at the expense of intellect, which was regarded as of little immediate practical use to the average officer. As promotion was also subject to purchase, a rich man could command a regiment at thirty, and the ignorance of some commanding officers was appalling. Officers in the cavalry and infantry learned their trade in the regiment or troop. Those assigned to colonial garrisons, the chief occupation of half the Army, relied on practical rules of thumb rather than intellect to solve recurrent problems. In colonial warfare with ill-armed native peoples, visible courage was more valued than the contributions of technical specialists, who introduced tensions that the Army found unacceptable. Conformity was preferred over originality. At home, military duty took up only half an officer's time. Routine duties were left to NCOs and those officers too impoverished to pursue outside interests. Officers with artistic interests sketched, sang, or engaged in amateur theatricals, but few read books. Intellectual life hardly existed, and those who had a personal bent that way often expended it in unrelated interests like geology or Asian cultures. Military theory, which should have been the basis for military decision making, related only to techniques of drills, rituals, and ceremonies that allegedly supported the development of such characteristics as steadiness on parade which were regarded as the big tests of soldierly qualities.<sup>43</sup>

There were exceptions. Capt. Charles Kincaid-Lennox of the Life Guards became a Fellow of academically prestigious All Souls' College, Oxford, and Generals Sir John Fox Burgoyne, Sir Charles William Pasley, and Sir William Napier wrote important military works.<sup>44</sup> Yet Burgoyne was one of

the most articulate opponents of the abolition of purchase.<sup>45</sup> The British officers' traditions, says Correlli Barnett, were "against books and study and in favour of a hard gallop, a gallant fight, and a full jug."<sup>46</sup>

The history of British officer-production shows the nature of the problems that impeded the development of true professionalism even more clearly than that of France and Germany. Its repeated investigations and abortive reforms therefore need to be told in more detail. Britain had established a technical military academy for engineer and artillery officers as early as Mezieres. What would become the Royal Military Academy (RMA) had originated at Woolwich about 1741, and from 1761 its graduates received commissions in the Royal Engineers without purchase.<sup>47</sup> But for half a century, RMNs academic standards for admission and for progression through its courses were low. The cadets were callow youths, some of whom were admitted when only ten years old. Bullying was rife and was used to organize cadet resistance to study. Admission was by nomination by distinguished patrons until 1855, when open competition at the age of fifteen upwards was introduced, but this brought little improvement. The curriculum included mathematics, French, German, history, geography, drawing, and fortification, with practical classes in artillery, surveying, field work, and geology. In the mid-nineteenth century, the Royal Military Academy had only one redeeming feature, the prestige of its faculty which included Michael Faraday, the distinguished pioneer in electromagnetism.<sup>48</sup>

The introduction of academy training for non-technical officers in the British Army was the work of Col. (later Maj. Gen.) Gaspard Le Merchant, a Channel Islander who had seen the incompetence of British staff work in 1794 during the Duke of York's campaigns in Flanders. Le Merchant proposed the establishment of a "college" (the word may have been used to distinguish it from RMA) to train boys, cadets, officers, and NCOS. Two parts of this project, the courses for cadets and officers, were established as the Royal Military College (RMC), with its Senior Department at Marlow to train staff officers and its Junior Department at High Wycombe to educate cadets for commissions.<sup>49</sup> In 1812, the Junior Department was moved to a new location at Sandhurst, where it was joined by the Senior Department in 1820. Both Departments decayed after Waterloo, however, when military needs were not pressing, and fell far short of Le Merchant's intentions. The Junior Department, admitting boys from thirteen years up by nomination with only an elementary qualifying examination, had a curriculum similar to the English "public" schools (English, grammar, arithmetic, algebra, geometry, languages, and geography) with the addition of a little military instruction and without the public schools' instruction in the classics. (In England, the "public" schools are private residential preparatory schools.) Cadets who successfully passed an oral examination after completing six "steps" in the curriculum were given direct free commissions. Those who did not complete the course could still enter the Army by buying the commissions, and many did so.

By 1849, RMC's popularity was at a low ebb. Its total enrollment was only one hundred and forty-five. Government appropriations had been eliminated. The staff had been reduced, and parents thought they were not getting an adequate return for the fees. There was prejudice in the Army against RMC graduates because they had not received the same basic classical education as other officers who entered by purchase from the public schools.<sup>50</sup> Two anonymous articles in the *Quarterly Review* in 1846 and 1848 contrasted British military education with continental European systems and severely criticized Sandhurst. The author said the Army should be more than a means whereby a young gentleman could spend his early years in idleness; he should be given an intellectual foundation and tasks to fit him to take care of the lives of brave men and the honor and interests of the nation.<sup>51</sup>

In 1846, Sidney Herbert, the Secretary-at-War, an administrator with a seat in the cabinet, took up the cause of improving education in the Army.<sup>52</sup> About the same time, Earl Grey, the Secretary of State for War and the Colonies, wrote a memorandum attacking the purchase system. In 1849, it was ruled that all recipients of commissions by purchase must pass a qualifying examination in history,

geography, algebra, Euclid, Latin, field fortification, spelling, and handwriting.<sup>53</sup> This was the first important step towards the elimination of amateurism in the British Army.

The death in 1852 of the Duke of Wellington, who had been the greatest obstacle to reform of the system that had triumphed at Waterloo, and failures in the Crimean War (1853-1856) opened the way. A parliamentary committee on Sandhurst in 1855 suggested that RMC's Junior Department be divorced from the Senior Department and amalgamated with RMA,<sup>54</sup> but the opposition to reform was still too strong. A year later, a Royal Commission on the System for Training Officers for the Scientific Corps recommended that entrants to Woolwich should be between the ages of sixteen and nineteen and that their preliminary general education should be left to the public schools.<sup>55</sup> The new Commander in Chief, the Duke of Cambridge, said it was important to obtain "young gentlemen with a thorough gentlemen's education from the public schools and do away with your military schools as competing nurseries for the Army."<sup>56</sup> It was next decided that the age of admission to Sandhurst should also be raised to between sixteen and eighteen. The British officer training institutions thus moved toward present age limits.

The new system began in 1858 and got off to a bad start. The young men at RMC were given the same rations that had been given earlier to young boys- bread and milk for breakfast and a steady diet of mutton for dinner. The whole body of cadets at Sandhurst mutinied for three days, pelting the Superintendent with hard bread rolls which they had stored up. They were appeased only by the personal appearance of the Commander in Chief.<sup>57</sup> More serious problems were that the purchase system was still entrenched and the Army qualifying examination was too low a hurdle.

In 1869, another Royal Commission was appointed to investigate further complaints about the state of military education. The Dufferin Royal Commission of Military Education reported in 1869 that, while it did not expect line officers to have exceptional ability or to do extensive reading, it did believe that the possession of mental faculties disciplined by intellectual training and a store of well-digested information could be useful to the discharge of their routine duties and would help them to maintain ascendancy over their subordinates. With respect to Sandhurst, the Commission found that even though the College had improved in recent years it was still inefficient. This was partly due to the lack of enough applicants for Sandhurst to make competition for admission feasible. As a result, young men were admitted who had no hope of meeting academic standards and obtaining a commission without purchase. As the Commission noted, these quickly lapsed "during their stay into a condition of sluggish indifference alike pernicious to the intellectual and moral tone of the institution." Furthermore, as Queen's Cadets (the sons of officers who could not pay the full fees) and Indian Army Cadets were guaranteed a commission if they had passed a very low qualifying entrance examination, they were even less inclined to industry and so were another very bad influence. Compounding this state of affairs was the predominance of the military over the educational element in college authority.

Based on its studies, the Dufferin Commission made several significant recommendations. Unlike its predecessors, the Commission recommended against combining Woolwich and Sandhurst on the grounds that this would lower the standards existing at Woolwich. With respect to the preparation of young men to enter the two military academies, the Commission observed that most public schools gave a classical education and did not prepare students specifically for the Army entrance examinations, though some schools, Cheltenham, Marlborough, Wellington College, and Harrow, had introduced a course in Modern Studies with the Army in view. However, most Army candidates went to private schools known as "crammers" for special preparation. In the "crammers," moral instruction was entirely lacking, and the nature of the education was what their name implied, a shallow but intense preparation merely to pass the examination." The Commission wished to maintain the principle that candidates should complete their general education before commencing professional education and therefore recommended that Latin and Greek should be included in the admission examinations for the college. It also argued that only by making entry to Sandhurst and Woolwich competitive could the public schools be induced to prepare for them; however, military subjects should

not be introduced in the public schools. The Commission specifically recommended against the abolition of purchase. It held that British officers were "gentlemen of the highest spirit inspired by a most devoted sense of duty and eminently endowed with natural aptitudes which go so far to constitute the excellence of the military character." Given the necessary facilities, it believed they would "carry military training to a point never yet exceeded in any Army in the world."<sup>59</sup> Clearly, fundamental reform was unlikely from that source.

Nevertheless, after a fierce losing debate in Parliament, the Liberal government got purchase abolished by persuading Queen Victoria to bypass Parliament by using her prerogative. Introduction of competitive examinations for all Army commissions led at first to the use of Sandhurst for postcommissioning education. But Gen. Sir Ian Hamilton recorded later that it became easier to shirk work there than during any other period in the history of the Royal Military College. He added that no one took the examinations seriously because the War Office and the college authorities merely used them to contradict those who, like the Duke of Cambridge, were loudly proclaiming that too much education and too little purchase were spoiling the Army that had won at Waterloo.<sup>60</sup>

In a very few years, Sandhurst was reinstated as a pre-commissioning college, but there continued to be grave dissatisfaction with its operation and also, to a lesser extent, with that of Woolwich. Education in the country as a whole was expanding and improving, and officers commissioned from the other important sources, the Militia and the universities, were found to compare favorably with products of Sandhurst and Woolwich. There was, therefore, another call for the closing of the military academies. Standards had been fairly well maintained at Woolwich by the competition for commissions in the Engineers, but the examinations for passing out of Sandhurst were now even less competitive than they had been in the days of purchase." The principal problem was that the quality of entrants into Sandhurst had declined. In an attempt to reduce the resort to private cramsters, entrance standards were lowered in the 1880s. Representatives of the Civil Service Commission which conducted the Woolwich and Sandhurst entrance examinations reported in 1888 that candidates were lamentably weak, largely because the best students in the public schools were on the classical side.<sup>62</sup> Furthermore, fathers were convinced that sons who were not up to the standards of their offices in the city were good enough to command a company or a squadron.<sup>63</sup> And then there were the Queen's Cadets who, because they got commissions automatically, were being accepted with lower marks and were allowed to coast through the course without working hard.

The poor performance of the British Army in the War in South Africa brought yet another committee to investigate military education. The Akers-Douglas Committee reported widespread dissatisfaction with the general and professional education of British officers as a class. Many could not write a good letter. The Committee had learned that junior officers in the Army were lamentably deficient in military knowledge and that their spirit and fashion was "not to show keenness." It favored the continuance of alternative sources of entry into the officers corps from the Militia and also reported that there was unanimous approval of the quality of officers who came direct from the universities, even though most of these had received no previous military training.

The Akers-Douglas Committee criticized Sandhurst more severely than Woolwich, reporting that students there had absolutely no inducement to work and that instructors had no inducement to teach. It believed that, as at Woolwich, instruction at Sandhurst should be strictly military and technical and that foreign languages, except Hindustani, should be dropped. The Adjutant-General, Evelyn Wood, had said that lengthening the courses at Woolwich and Sandhurst to create military universities combining military and technical training with theoretical training would mean extending them by three years. If a choice had to be made, he would prefer restricting Woolwich and Sandhurst to practical, that is, military and technical, training." At the same time, Col. Gerald Kitson, Commandant of the Royal Military College of Canada, pointed to a significant difference between the four-year courses at West Point and the Canadian Royal Military College on the one hand and the

shorter courses at Sandhurst and Woolwich on the other. The North American academies treated cadets "almost as private soldiers" while the British treated them very much as officers.<sup>66</sup>

In 1905, changes recommended by Akers-Douglas were put into effect, but unfortunately some of the changes served to aggravate rather than alleviate problems at the academies. In keeping with the committee's desire that the academies be short courses providing only practical training, the entrance age for Sandhurst and Woolwich was raised to eighteen years, and the former course was cut to one year and the latter to eighteen months. This change in age limits had the unfortunate side effect of further reducing the flow of candidates for the military academies because many parents could not afford to keep boys on in a public school until they had passed the age of eighteen, and the normal leaving age in the secondary schools was sixteen." The reduction in the flow of candidates led to the implementation of loopholes in the selection processes that weakened standards in the academies. When a shortage of candidates developed, the Army Council could nominate boys who could not pass the qualifying examination but who had served in the Officer Training Corps at an inspected public school. A recommendation for such a cadet might read, "the boy is a born soldier, captain of his school eleven, who can ride and shoot in a way seldom seen, and is a real leader, but unfortunately he cannot do mathematics, or Latin prose or French." This *pons asinorum*, as reported on in the *Army Review*, was presented as a temporary expedient with a virtual apology. "Officers well acquainted with continental armies declare that, although the junior officers abroad, as a rule, cannot compare with our own in dash, initiative, and common sense, they are superior to us in general education. Surely it must be for the good of the state to remove the grounds for this adverse criticism and, while maintaining the good characteristics of our junior officers, to "ensure that the generations to come are of a higher standard of education."<sup>68</sup>

The root of the trouble was that by comparison with France and even with Germany, the British Army was drawing on only a small part of the population for its officers and not getting the best selection from that part. The public schools, stressing the classics, did not serve the Army adequately.<sup>69</sup> Secondary education in non-residential schools dated only from 1868 (except for a few ancient foundations) and did not become widespread until adequate state support was offered in 1902 and 1920. Although some seventy or eighty "lower middle class" candidates were said to be finding their way to commissions annually," this was minimal, and few of them entered through the military academies. Most British officers before, and even after, the First World War were boys whose parents could afford to keep their sons at a public school until eighteen and then give them an allowance to supplement their inadequate military pay and allowances.

An important obstacle to the introduction of reforms in British military education designed to produce officers able to meet the challenges of the twentieth century was that in a country that was deeply divided socially, the government was unwilling to spend more money on military education when it chiefly benefited the upper classes. Yet the government was also unwilling to end a system which discriminated in favor of these classes and which continued to accord them their traditional privileges. A defensive rationale for privilege or discrimination was that the public schools produced the ideal officer, who radiated self-confidence and took a courteous, if paternalistic, interest in his men. He was a sportsman rather than an intellectual, and field sports, the hunt, and stalking and shooting were assumed to be the qualities most needed by an officer. Officers were thus still believed to be "born" and not made. The troops, coming from a vastly inferior socioeconomic class, took it for granted that such men were their natural leaders who knew very much more than they did.<sup>71</sup> Official investigators continued to find that although Woolwich cadets had a reasonably high level of intelligence, most Sandhurst cadets were intellectually below par. But the impression persisted in many quarters that an officer " . . . did not require as good an education as a gentleman in other professions."<sup>72</sup>

The British belief that military leadership could only be found in the public schools lasted until after the Second World War. Until then, the announcement of Army entrance examinations was sent

only to the public schools. Not until after that war, when Britain kept conscription for a time and the traditional source of officers dried up because the aristocracy and upper middle classes could no longer afford to send their sons into the Army, did officer candidates begin to come from the secondary day schools on any significant scale. It is of interest here to note that a recent critic contends that faced with an entirely different problem in military education when all officers are no longer "gentlemen" in the nineteenth-century sense of the word (though certain regiments still maintain the old class distinctions) and when the troops are no longer socioeconomic misfits and dropouts, the new combined service academy, the Royal Military Academy, Sandhurst, is still designed to produce officers of the old type." On the other hand, there are obvious difficulties in finding substitutes from among classes less used to command to replace the former prestige of the public school man as a "natural" leader. More than either France or Germany, Britain had found it was hard to produce an adequate system to use general education as a foundation for military professionalism because of traditional conflict about the form that the general education should take, about when it should be undertaken, and about what military professionalism actually was.

Before I relate these examples of nineteenth-century military education to the problems created by the much greater social and technical change of the twentieth century in the United States, I must first outline briefly the ways in which officer production had developed there. At the close of the Revolutionary War, Washington, Hamilton, and other officers had wanted to set up a military academy to provide intellectual foundations for the professional officers of a regular army; but this was rejected as being against the democratic principles of the new republic. Instead, Jefferson approved the establishment of West Point to train engineers to build the country. Before the War of 1812, the Academy was neglected.<sup>74</sup> The dramatic Partridge-Thayer confrontation in 1817 was in some respects a clash between two opposing conceptions of the Academy's purpose, the military and the scientific. Partridge, despite his academic qualifications, had the mind of a drill instructor. Thayer, with fewer of those qualifications, gave the United States a first-class engineering school which pioneered technical education. He rejected the classics, which were the basis of contemporary education; instead, following France's Ecole Polytechnique, he based West Point's curriculum firmly on mathematics.<sup>75</sup>

Until the Civil War, the military purpose of the Academy was definitely secondary to its civil function, and for a time it was turning out engineers rather than soldiers. Some important precedents were laid, however, that would greatly affect the future development of military education in the United States.<sup>76</sup> Although there were no great social cleavages in America between a hereditary landowning class, a bourgeoisie, and a proletariat, appointments to the Academy before the Civil War were secured disproportionately by sons of families of social standing or with influence in politics, education, commerce, and the Army. Receiving a superior education, the corps of cadets came nearer to being an aristocracy than any other part of American government and society.<sup>77</sup> But admission by nomination by each senator and congressman drew from the whole country and so obstructed undue representation of an elite, and the Academy made no distinctions between rich and poor within its walls.<sup>78</sup> However, because education standards varied greatly across the country, the West Point course had to be much longer than courses in similar institutions in Europe, and it had even more need than the latter to contain general education to make up for secondary school deficiencies. To prevent continuation of political and social interference in the Academy, Thayer introduced a strict system of regular grading that brought in the competition absent in the entrance procedure. To ensure application to studies, he instituted teaching in small classes and the recitation system. To cope with the effects of large differences in standards on entry and in previous education, he invented the practice of re-sectioning, which had the advantage of streaming cadets according to their ability and also of making it possible for those of relatively low capacity to proceed at their own pace. Re-sectioning was, in effect, a relaxation of the harsh competition of the order of merit, and it permitted concessions to accommodate both superior and lesser intellects.

Although most authorities describe pre-Civil War West Point as a scientific school,<sup>79</sup> this description is somewhat misleading. It was a basic engineering school. The Thayer system was eminently useful in producing excellent engineers and the uniformity of thought necessary to give coherence to an officer corps drawn from the varied circumstances of all parts of a huge country.<sup>80</sup> Some weaknesses must be noted, however. The recitation system did not encourage a spirit of enquiry beyond the limits of the text- book or the professor's knowledge, as would have been required for pure science. Although French was taught for the utilitarian reason that the best engineering texts were in that language, the classics and all other liberal arts useful "merely" to shape the "character of an accomplished citizen" were rigorously excluded.<sup>81</sup> On the eve of the Civil War, Superintendent Robert E. Lee and Secretary of War Jefferson Davis, both West Point graduates, agreed that absence of the liberal arts was a mistake. Davis said, "It has long been the subject of remark that the graduates of the Military Academy, whilst occupying the first ranks as scholars in the exact sciences, were below mediocrity in polite literature. Their official reports frequently exhibited poverty of style." English literature, history, ethics and logic, military law, and field instruction were expanded; Spanish was added; and the course was lengthened to five years to accommodate these changes. But this lasted only until the Civil War.<sup>82</sup> At this time, West Point's reputation was high, not merely for its contribution to public works but also for the promotion of military technical development. There were a few who pointed out that in preparing officers for the engineers, infantry, and cavalry, the Academy was attempting too much and that more specialized military academics in other countries, as well as many colleges in the United States, excelled in their particular fields. But the ultimate proof was the outstanding performance of West Point graduates on both sides during the Civil War, when tactics and strategy were revolutionized by technology and the impact of mass democracy presented an extraordinary challenge.

After the Civil War, the appointment in 1866 of an infantry officer as Superintendent deliberately broke the Engineers' traditional control of the Academy. Practical instruction in infantry, cavalry, and artillery tactics was now given in all four years, and the Academy lost much of the theoretical scientific and engineering emphasis that Thayer had given it. As Congress refused to introduce competition for admissions, which would have diminished its patronage, entry standards remained low and presupposed completing general education at West Point. Although history was expanded and other non-technical subjects were added, the Academic Board held them to be of minor importance. Mathematics remained the core of the curriculum. Superintendents and the Academic Boards alike resisted change on the grounds that the system had proved itself in the recent war.<sup>83</sup>

Rejection of the myth that class was the key to character and leadership had made it possible for the Academy to foster the personal qualities required by an officer. As cadets came from all classes and all parts of the country instead of from an elite, and as they had no inherited tradition of military command and spirit, the task of breaking down old habits and attitudes was much more complex than in Europe. Instruction and training in the military life-style became central to the purpose of the Academy and were brought about by strict discipline, by isolation from civilian life, by daily routine, by stress on athletics, and by thorough indoctrination in military traditions and etiquette. Cadets were rapidly transformed despite their non-military backgrounds. Plebe indoctrination, indistinguishable from college hazing except that it was rationalized by a military need and was reinforced by military authority, developed into a system under cadet control in the latter half of the century; and it was jealously protected by graduates.<sup>84</sup> Another part of the process of indoctrination that made up for lack of an informal aristocratic code, the Honor System, like almost every- thing else at West Point, can be traced back in early concept to Thayer. Towards the end of the century, it too became the concern of the cadets themselves, and after the First World War, under Superintendent Douglas MacArthur, it was formally codified.<sup>85</sup> All these developments were based on the belief that the qualities needed by an officer must be formed in the academies.

The evolution of naval education in the United States provides a different perspective on what has been called "a central issue of service academy education: how to provide education that will effectively humanize military leadership and, at the same time, provide sufficient background to master expanding military technology."<sup>86</sup> The author of that statement, William Simons, then an Air Force major, believed that one reason why the Naval Academy's approach took a quite different path at first than that of West Point was that Annapolis remained very responsive to the service that it served, while the United States Military Academy was obsessed by its own early image and remained less affected by outside influences, even those of the Army.<sup>87</sup> Another factor was that life at sea and the techniques of sailing and fighting ships were more easily seen to belong to a world of their own; therefore, naval education may have been more consciously directed towards the goal of fitting naval officers, not merely for mastery of the technical problems of their service but also for comprehension of the relationship between their service and the very different society which they served.

When the Naval Academy was founded in 1845, the problem posed by steam propulsion was one of the incentives to its creation and growth. Its curriculum down to the 1880s was a flexible balance between liberal arts and theoretical science; in the fields of mathematics and physics, Annapolis abreast of contemporary liberal arts colleges. However, the pressure of technology and the problem of a conflict of interest in the preparation of officers for the bridge and for the engine room led to the introduction common curriculum in 1882 in which the relative proportion and theoretical level of liberal arts was significantly diminished. By the end of the century line, officers were being given an education that included engineering competence in addition to their traditional expertise. The way was open to pre all naval officers, like the graduates of West Point, for the general military command and staff responsibilities of the future by a common form of education that would, incidentally, tend to set them apart from the rest of American society.<sup>88</sup>

In the twentieth century, acceleration in the rate of technological and social change has greatly complicated the fundamental problems nineteenth-century military educators never completely solved. The extent of technical advance is so well known that it need not be detailed here. What does perhaps need to be noted is that expertise in many areas that relate to warfare is now so complicated that the conduct of certain aspects of conflict is beyond the comprehension of, let alone participation by, educated persons who have not specialized in applicable technical and military fields. This gap was so great in World War II that military forces found themselves dependent on civilian scientists. Either that dependence will increase, or the services must extend their specializations. This presents problems to the academies. How far should they attempt to prepare officers to understand scientific problems? Should they go even further still and lay down the basis for specialized personnel?

What is perhaps less well appreciated is that the extent of social and political change has been just as great and has produced problems that are just as difficult. These problems call for different kinds of adjustment in the domestic scene. Mass armies, raised standards of living, contemporary ideologies that stress egalitarianism and social justice, advances in educational standards, and a (not always complementary) belief in universal education, tend to set the military academy even further apart just at the time when many of these same things call for closer relations between the officer and civilian society. On the wider front, major ideological differences have sharpened international confrontations, deterrence rather than battle has become the ultimate (though not yet the immediate) objective in the use of force, and the rise of the third world powers has changed the strategic balance. For the United States, a particular problem is that the role of world leadership has entailed responsibilities very different from those it had in the late nineteenth century when its military operations were limited to cavalry skirmishes and when a small U. S. Navy functioned on oceans on which the British Royal Navy maintained a *Pax Britannica*. Such vast changes call for serious consideration of the way in which military education and training of officers has been, and will be, conducted.

Only the broadest outline of the ways in which the American academies have moved to meet these challenges in this century need be presented here. Although general competitive entry has not been introduced, the growth of the number of applicants and realization by nominators that the failure rate of unsuitable candidates imposes restraints on their freedom of selection has brought improvement in quality. Furthermore, steps have been taken to eliminate discrimination against minorities and to draw even more widely on the nation as a whole. Gen. MacArthur failed to achieve his objective of introducing more liberal arts courses at West Point to fit its graduates better to command the kind of men he thought would compose the mass armies of the future,<sup>89</sup> but all the academies have since moved in that direction. The academies differ in their policy about employing civilians on their faculties, but all have taken steps to raise the academic qualifications of their teaching staffs. New courses have been added to conform with technical advance, and more advanced courses now build on rising standards in the secondary schools. Accreditation of undergraduate degree programs qualify academy graduates for post-graduate work in civilian universities, and many officers take such programs during their later careers. The services have also introduced numbers of in-service post-graduate professional and technical courses, so that it can now be said that the military profession in the United States requires more specialized education in mid-career than any other profession (partly because, unlike most other professions, its members do not get as much opportunity for operational experience).

On the other hand, the principle established by the end of the century that academy-produced officers in all arms in each service should receive a common basic pre-commissioning education, though not extended to a common pre-commissioning education for all three services as was seriously considered after World War II, has been maintained. The decision to create the Air Force Academy was in line with the conviction that one of the chief reasons for educating officer candidates in a military academy is to motivate and that each of the three services has different outlooks and methods. Given a new start less hidebound by tradition, the Air Force Academy has been able to advance further and faster in certain important directions, but it has also emphasized traditional methods and values inherited from its sister colleges.<sup>90</sup> Motivation, part of the process of character building, an element in all officer training, continues to be stressed as in the other academies.

Progress in military education in the nineteenth century was frustrated by the belief that military virtues were derived from social class status. Where this belief did not entirely prevail, in France and the United States, two different solutions for the organization of military academies were adopted. In France, specialization in scientific education was separated from the education of generalists. In the United States, there was a common education and indoctrination. As we have seen, the twentieth century has need for yet more specialization in scientific studies along with a greater urgency for emphasis on social and humanistic study. The problem for the American academies now is how far they can introduce specialization in both the sciences and in social and humanistic studies while retaining their common curricula and maintaining their roles in character formation. Well-publicized systematic breaches in honor codes in all three academies have been caused in part by the tensions produced by the occasional conflict between these objectives.

The story of military education in the nineteenth century shows how difficult it was then to bring academies into line with developing technology while they adhered to military traditions and social structures that were threatened by social conditions and political needs. This problem is even more difficult today. The maintenance within a single institution of a basic general education, of a higher degree of specialization in both sciences and humanities, and of standards of conduct quite different from those that prevail outside the academies will obviously impose greater strains on the academies than they have known so far. However, with regard to specialization for professional development, there are signs that in civilian universities and colleges the hard line between general and professional schools is breaking down. Some aspects of pre-professional training are beginning to appear in the undergraduate college,<sup>91</sup> and there have also been some trends towards the liberalization

of graduate professional education. Moreover, the hard line between general and professional education was never drawn as sharply in military academies as in the universities. It may be that the former will therefore be able to adapt themselves to achieve the complex purposes that will be required of them in the future. While the history of military education in the nineteenth century does not give ground for undue optimism in that respect, the future, not only of the military profession in the United States, but also of the nation and world society as a whole, may depend upon a successful resolution of this very complex problem.

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