



COMANDO DA AERONÁUTICA  
DIRETORIA DE ENSINO DA AERONÁUTICA  
UNIVERSIDADE DA FORÇA AÉREA

EXAME DE SELEÇÃO E ADMISSÃO PARA ALUNO REGULAR DO  
PROGRAMA DE PÓS-GRADUAÇÃO EM CIÊNCIAS AEROESPACIAIS  
PPGCA - TURMA 2019

2019

PROVA DE COMPREENSÃO DE LÍNGUA INGLESA

GABARITO

**Orientações para a prova:**

- 1) É permitido somente uso de dicionário convencional (não eletrônico), de uso individual e exclusivo, inglês/inglês.
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OUTUBRO / 2018



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**PROVA DE COMPREENSÃO DE LÍNGUA INGLESA**  
**3ª etapa do Exame de Seleção - Turma 2019**

**READ THE TEXT.**

**TEXT**

**The Roots of Modern Military Education**

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July 17, 2018

*Ruiz*  
In September 1870, at the Battle of Sedan, the Prussian Army, led by General Helmuth von Moltke, decisively defeated the French Army of Napoleon III after an incredible feat of mobilization, deployment, and battlefield maneuver. With their army destroyed, the French struggled through a nine-month insurgency, eventually succumbing to the Prussians. The Treaty of Frankfurt ended the Franco-Prussian War, recognized the unification of German states into an empire, and saw Prussia proclaimed the dominant land power in Europe. Their success was largely a result of their institutionalization of three army educational reforms during the 1800s: tiered education, broad curriculum, and historical study. These reforms provided Prussian leadership the tools they needed for success on the battlefield and remain essential components of today's military education systems.

**The Reforms**

Sixty-four years before the Battle of Sedan, in October 1806, a very different Prussian Army marched against the invading forces of Napoleon Bonaparte. At the Battle of Jena-Auerstedt, Napoleon, outnumbered nearly two to one, devastated the highly regimented and drilled Prussians who employed the

tactics of their long-dead king, Frederick the Great. This defeat shattered the illusions that Prussians held of their military excellence. The humiliated officers who survived the battle realized that warfare had changed and their Frederician system was no longer relevant. Jena-Auerstedt displayed the inability of the Prussian Army, amidst changes in the maneuver character of warfare, to effectively mobilize, plan, coordinate efforts, and seize the initiative on the battlefield.<sup>[1]</sup> This defeat provided the catalyst for change that would lead to their predominance seventy years later on the fields outside Sedan.




Major General Gerhard von Scharnhorst witnessed the humiliation as chief of staff to the commander of the army that fought at Jena and later became the father of Prussian Army reforms. From lower-class origins, Scharnhorst was a product of the concept of *Bildung*, or self-improvement through education.<sup>[2]</sup> He became a proven intellectual whom the king of Prussia appointed to lead an army reform commission.<sup>[3]</sup> Scharnhorst did not believe an army could simply wait for a genius general like Napoleon to manifest at times of need; rather that successful military competency could be cultivated through education.<sup>[4,5]</sup> His reforms aimed at wresting control of the officer corps from the aristocrats and nobility to create a system that identified and cultivated talent through education, regardless of social class.

The Frederician military schools of the past were technical and taught drills and obedience to officers prior to entering service.<sup>[6]</sup> Jena demonstrated that executing orders was not enough; officers had to use sound judgment and critical thinking in the preparation, planning, and execution of military operations. Scharnhorst firmly believed in the benefits of higher level education and experimented with specialized learning venues when he established the Military Society in Berlin in 1801. This society fostered a free-thinking exchange of ideas and sought to develop judgment and reasoning.<sup>[7]</sup> Modern-day comparisons might be found in *The Strategy Bridge's* "New Model Mentoring" or the Defense Entrepreneurs Forum.

General Scharnhorst incorporated the concept of advanced education into his reforms by creating a tiered army education system to meet the developmental

needs of officers as they progressed from the tactical applications of war to the strategic. The Prussian Army tiered school system consisted of cadet schools, post-commissioning schools, and a war college or *Kriegsakademie*. The cadet schools provided indoctrination and general military instruction. Their purpose was to instill discipline. The post-commissioning schools provided military technical instruction in fields such as artillery, tactics, and administration. Their purpose was to refine specific military skills. The *Kriegsakademie* was the first war college established by an army. It was focused on developing strategic and critical thinking, and its curriculum consisted of general education, military art and science, politics, and the economy, and history.<sup>[8]</sup>

***Scharnhorst understood liberal education was the key to creating leaders with the ability to solve problems in modern war.***




Jena demonstrated war's adaptive character when Prussia's outdated system and tactics were defeated by Napoleon's. Scharnhorst concluded that understanding and innovation in warfare required critical thinking — the kind of thinking that questions the status quo, identifies problems, and forms solutions. His answer was a liberal education, and he and his successors broadened the Army's technical education with the inclusion of civilian liberal arts and sciences. A review of the Prussian Army's curriculum in 1872 by Dr. Henry Barnard, the first U.S. Commissioner of Education, revealed a focus on foreign language, philosophy, geography, chemistry, physics, logic, literature, and history in addition to military-specific subjects.<sup>[9]</sup> Scharnhorst understood liberal education was the key to creating leaders with the ability to solve problems in modern war.

Above all, the Prussian Army education system deemed historical study essential to the development of military judgment. Seven hours a week were devoted to the history of war, more than any other subject at the *Kriegsakademie*.<sup>[10]</sup> In times of relative stability, like in Prussia from 1815 to the 1860s, history provided a partial substitute for experience in warfare. Military history multiplies officers' understanding of war by exposing them to what historian Hajo Holborn described as the "complexity of circumstances."<sup>[11]</sup> The

Prussian author of *On War*, Carl von Clausewitz, valued history as a way to reconcile the theory and practice of war.<sup>[12]</sup> Clausewitz was a pupil of Scharnhorst and the emphasis on history continued when he directed the *Kriegsakademie*.

### The Effects of Reform



Three educational reforms were the foundation for the creation of the Prussian General Staff, an organization Hajo Holborn said was the "brains and nerve center of the army."<sup>[13]</sup> In the half-century between the fall of Napoleon and the Franco-Prussian War, the Prussian Army education system enabled a culture of innovation to take root within the General Staff. They learned through study and experimentation.<sup>[14]</sup> They evolved their style of command to account for the expanse and uncertainties of war.<sup>[15]</sup> They leveraged advances in technology such as the rail and telegraph to support new concepts like strategic envelopment.<sup>[16]</sup> While most industrialized nations built rail lines in the 19th century, Prussia's General Staff had the foresight to influence the placement of rail lines to support possible future army deployments.<sup>[17]</sup> The General Staff's ability to think critically about their shortcomings and the future of war resulted in a Prussian revolution in military affairs.


The Prussian Army's education system produced the minds that led Prussia to dominance in the late 19th century, chief among them General Helmuth von Moltke. While not always considered a military genius, his leadership of the General Staff resulted in an army that out mobilized, outmaneuvered, and outfought the French.<sup>[18]</sup> Moltke's understanding of the unpredictable nature of war resulted in the issuance of only essential orders that required subordinates to use judgment and initiative on the battlefield. General Staff officers were able to create sound plans, mobilize on a scale not yet seen in history, and supply and equip the army in successful strategic and operational maneuvers in the Franco-Prussian War.

After the war, Prussia's reforms were mimicked by many western armies. Upon his observation of the Prussian Army school system, Dr. Barnard stated:

Prussia stands alone among the great military nations of Europe, and this honorable distinction is in a great measure the result of the diffused system of education throughout the country, and of the plan adopted by Stein and Scharnhorst, to make the officers the leaders of the army both in education and in military science.<sup>[19]</sup>

Dr. Barnard's study indicates that the Prussian system influenced the U.S. Army's education system as it began to evolve in the late 1800s and early 1900s. Key themes from Scharnhorst, namely liberal education and tiered schools, remain vital components of the U.S. military's educational approach as well as that of many other modern militaries.

## Conclusion



Responding to a devastating defeat, the Prussian Army institutionalized three reforms to their education system: a tiered system that reflected leader needs at different levels of war, a broad curriculum that inspired critical thinking, and historical study that supplemented and enhanced combat experience. This system produced the leaders that created a revolution in military affairs and led Prussia to victory in the Franco-Prussian War, achieving the vision of a unified Germany. These three reforms are still critical components of a successful military education system. All were incorporated by the United States and remain important foundations in educating future leaders for an uncertain and evolving character of war.

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*Lorenzo Ruiz is a U.S. Army officer. The views expressed in this article are the author's and do not reflect the official position of the U.S. Army, the Department of Defense, or the U.S. Government.*

### Notes:

1. For an account of the Battle of Jena-Auerstedt, see Paul K. Davis, *100 Decisive Battles from Ancient Times to the Present: The World's Major Battles and How They Shaped History* (New York: Oxford University Press, 1999), 282-286.

2. On *Bildung*, see T.G. Otte, "Educating Bellona: Carl von Clausewitz and Military Education," in *Military Education: Past, Present, and Future*, eds. Gregory C. Kennedy and Keith Neilson (Westport: Praeger, 2002), 14; MacGregor Knox, "Mass politics and nationalism as military

revolution: The French Revolution and after," in *The Dynamics of Military Revolution, 1300-2050*, eds. MacGregor Knox and Williamson Murray (New York: Cambridge University Press, 2001), 70-71.

3. T.N. Dupuy, *A Genius for War: The German Army and General Staff, 1807-1945* (Englewood Cliffs: Prentice-Hall, 1977), 20.

4. *Ibid.*, 24.

5. Knox, "Mass politics and nationalism as military revolution," 71.

6. On Frederician schools, see Henry Barnard, *Military Schools and Courses of Instruction in the Science and Art of War, in France, Prussia, Austria, Russia, Sweden, Switzerland, Sardinia, England, and the United States* (1862; repr., New York: Greenwood Press, 1969), 287; Dennis E. Showalter, "No Officer Rather Than a Bad Officer": Officer Selection and Education in the Prussian/German Army, 1715-1945," in *Military Education: Past, Present, and Future*, eds. Gregory C. Kennedy and Keith Neilson (Westport: Praeger, 2002), 36.

7. On the Military Society in Berlin, see Showalter, "No Officer Rather Than a Bad Officer," 36-37.

8. For a listing of the course lectures at the *Kriegsakademie*, see Barnard, *Military Schools and Courses of Instruction*, 332-333.

9. *Ibid.*

10. *Ibid.*

11. Hajo Holborn, "The Prusso-German School: Moltke and the Rise of the General Staff," in *Makers of Modern Strategy: from Machiavelli to the Nuclear Age*, ed. Peter Paret (New Jersey: Princeton University Press, 1986), 290.

12. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 170-174.

13. Holborn, "The Prusso-German School," 283.

14. Knox, "Mass politics and nationalism as military revolution," 71.

15. Williamson Murray, "May 1940: Contingency and fragility of the German RMA," in *The Dynamics of Military Revolution, 1300-2050*, eds. MacGregor Knox and Williamson Murray (New York: Cambridge University Press, 2001), 160.

16. Showalter, "No Officer Rather Than a Bad Officer," 103 and 105.

17. Wayne E. Lee, *Waging War: Conflict, Culture, and Innovation in World History* (New York: Oxford University Press, 2016), 373.

18. On Moltke as a military genius, see Dupuy, *A Genius for War*, 103.

19. Barnard, *Military Schools and Courses of Instruction*, 284.

Source: <https://thestrategybridge.org/the-bridge/2018/7/17/the-roots-of-modern-military-education>

**BASED ON THE TEXT ABOVE, CHOOSE THE CORRECT ALTERNATIVE A, B, C or D.**

**QUESTION 1**

According to Scharnhorst, what was the most important thing to create leaders in modern war?

- (a) A good curriculum
- (b) A general military instruction
- (c) Liberal education
- (d) Critical thinking

**QUESTION 2**

Which subject was considered essential to develop military judgment in the Prussian Army?

- (a) Foreign language
- (b) Geography
- (c) Philosophy
- (d) History

**QUESTION 3**

What did the Jena-Auerstedt battle reveal about Prussian Army?

- (a) The excellence of its military tactics.
- (b) The inability of the Army.
- (c) Its dominant land power in Europe.
- (d) Its powerful battlefield maneuver.

**QUESTION 4**

The elements below were part of the educational reforms carried out by the Prussian Army, except for:



- (a) Discipline, specific military skills, strategic and critical thinking.
- (b) Development of talent through education as well as social class.
- (c) Liberal Arts, Sciences and military-specific subjects.
- (d) Longer weekly academic hours studying History.

### QUESTION 5

All the statements regarding the Military Society are not true, excluding:

- (a) The Military Society was influenced by Frederick the Great's beliefs.
- (b) The Society prevented critical thinking.
- (c) The Military Society was established in Germany five years before the Jena-Auerstedt battle.
- (d) Scharnhorst, who established the Society, was fond of the highly technical and drilled military schools.

### QUESTION 6

Choose the correct alternative concerning the Prussian Army tiered school system:

- (a) General military instruction was taught in the first level of the system.
- (b) Specific military skills were studied in the third level of the system.
- (c) The *Kriegsakademie* fostered general education only.
- (d) The second level of the Prussian school system focused on military technical instruction and military art and science.

### QUESTION 7

According to the text, which statement is not correct in relation to the historical study in the Prussian Army education system?

- (a) History would sometimes play the role of warfare in times of peace.
- (b) Historical study provided the officers with combat experience, giving them a chance to combine the theory and practice of war.

While Clausewitz directed the *Kriegsakademie*, he quitted emphasizing the study of history.

(d) History was studied only in the *Kriegsakademie*.

### QUESTION 8

Who was the great leader in the Prussian Army education system reforms:

(a) General Helmut von Moltke.

Major General Gerhard von Scharnhorst.

(c) Dr. Henry Barnard.

(d) Carl von Clausewitz.

### QUESTION 9

Hajo Holborn stated that the creation of the Prussian General Staff was the "**brain and nerve center of the Army**". According to his statement, we can conclude that:

(a) The General Staff officers had more opportunities to refine their specific military skills.

The officers had more discipline and could, consequently, develop different battlefield maneuvers.

(c) The officers could build more strategic rail lines.

The officers had the ability to think critically; therefore, they were able to create plans, provide and forecast successful strategic maneuvers.

### QUESTION 10

What was the importance of the Prussian Army education reforms?

They influenced other modern militaries the world over.

(b) They hindered Prussian victory in the Franco-Prussian War.

(c) They emphasized the study of philosophy as a way to create leaders who would think critically about military affairs.

(d) They suppressed the advances in technology in the 19<sup>th</sup> century.

**GABARITO COMENTADO****Questão 1 – letra C**

Scharnhorst acreditava que por meio da educação liberal os oficiais seriam capazes de desenvolver o pensamento crítico, ou seja, o tipo de pensamento capaz de identificar problemas e formular soluções. Desta forma, ele e seus sucessores ampliaram a educação técnica no Exército com a inclusão das artes e das ciências civis liberais.

**Questão 2 – letra D**

O sistema educacional do Exército Prussiano considerou o estudo da História essencial para o desenvolvimento do julgamento militar.

**Questão 3 – letra B**

A batalha de Jena-Auerstedt mostrou a incapacidade do Exército Prussiano em coordenar ações que o levasse a vencer a batalha.

**Questão 4 – letra B**

Os elementos que não fazem parte das reformas educacionais do Exército Prussiano são o desenvolvimento do talento por meio da educação assim como das classes sociais.

**Questão 5 – letra C**

Todas as afirmações sobre a sociedade militar são falsas com exceção daquela que diz que tal sociedade foi estabelecida na Alemanha cinco anos antes da batalha de Jena-Auerstedt.

**Questão 6 – letra A**

A alternativa correta sobre o nivelamento do sistema educacional prussiano é aquela que afirma que instrução militar geral era ensinada no primeiro nível do sistema.

**Questão 7 – letra C**

A afirmação incorreta sobre o estudo da história no Exército Prussiano é aquela que diz que enquanto Clausewitz dirigiu a *Kriegsakademie* deixou de enfatizar o estudo da história.

**Questão 8 – letra B**

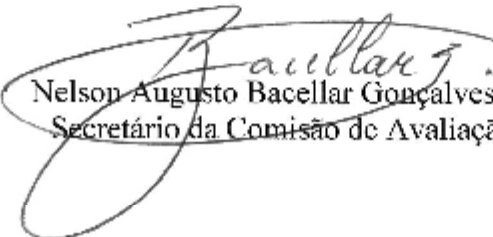
O grande precursor da reforma do Exército Prussiano foi Major General Gerhard von Scharnhorst.

**Questão 9 – letra D**

Pode-se concluir pela afirmação sobre o Estado Maior Prussiano ser o cérebro e o nervo central do Exército que os oficiais formados por aquela Escola tinham a capacidade de pensar criticamente, planejando e prevendo estratégias de manobras de sucesso.

**Questão 10 – letra A**

Pode-se afirmar que as reformas educacionais do Exército Prussiano foram importantes de tal forma que também influenciaram outros Exércitos no mundo inteiro, especialmente o Exército Americano.

  
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