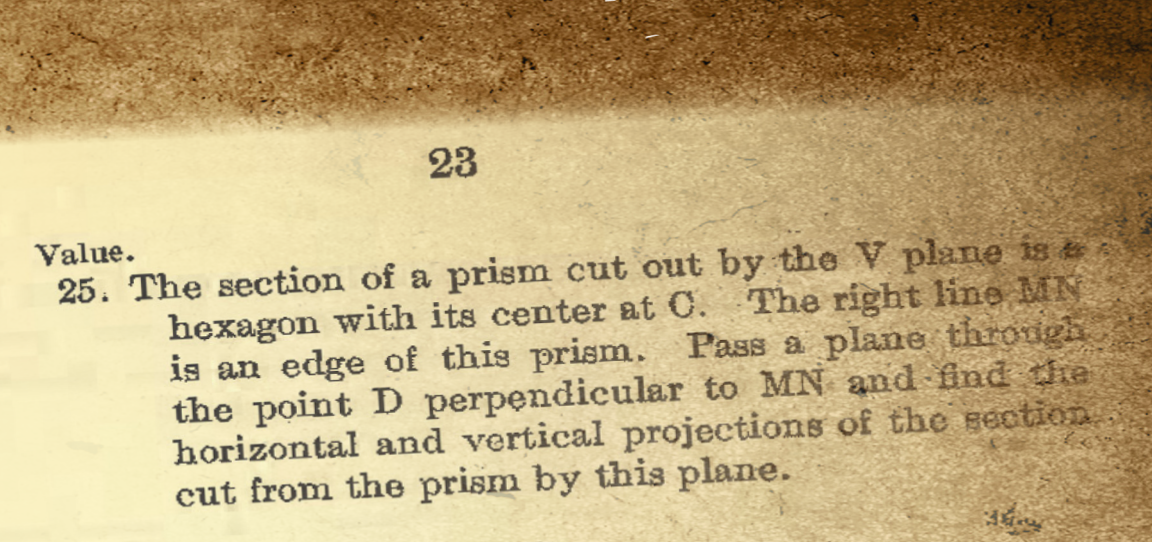

Still Soldiers and Scholars?

An Analysis of Army Officer Testing

Arthur T. Coumbe
Steven J. Condly
William L. Skimmyhorn

Volume 10

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STILL SOLDIERS AND SCHOLARS? AN ANALYSIS OF ARMY OFFICER TESTING

Arthur T. Coumbe
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December 2017

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This volume is the 10th in a series of monographs on officer talent management.

9. *Starting Strong: Talent-Based Branching of Newly Commissioned U.S. Army Officers,* April 2016, authored by Lieutenant Colonel (Ret) Michael J. Colarusso, Lieutenant Colonel Kenneth G. Heckel, Colonel David S. Lyle, and Lieutenant Colonel William L. Skimmyhorn.

8. *Paid to Perform: Aligning Total Military Compensation with Talent Management*, June 2015, authored by Mr. Roy W. Wallace, Lieutenant Colonel (Ret) Michael J. Colarusso, Colonel Andrew O. Hall, Lieutenant Colonel David S. Lyle, Major Michael S. Walker.

7. *Creating an Effective Regional Alignment Strategy for the U.S. Army*, November 2014, authored by Major Raven Bukowski, Major John Childress, Lieutenant Colonel (Ret) Michael J. Colarusso, Lieutenant Colonel David S. Lyle.

6. *Towards a U.S. Army Officer Corps Strategy for Success: Employing Talent*, May 2010, authored by Colonel Casey Wardynski, Lieutenant Colonel David S. Lyle, and Lieutenant Colonel (Ret) Michael J. Colarusso.

5. *Towards a U.S. Army Officer Corps Strategy for Success: Developing Talent*, March 2010, authored by Colonel Casey Wardynski, Lieutenant Colonel David S. Lyle, and Lieutenant Colonel (Ret) Michael J. Colarusso.

4. *Accessing Talent: The Foundation of a U.S. Army Officer Corps Strategy*, February 2010, authored by Colonel Casey Wardynski, Lieutenant Colonel David S. Lyle, and Lieutenant Colonel (Ret) Michael J. Colarusso.

3. *Towards a U.S. Army Officer Corps Strategy for Success: Retaining Talent*, January 2010, authored by Colonel Casey Wardynski, Lieutenant Colonel David S. Lyle, and Lieutenant Colonel (Ret) Michael J. Colarusso.

2. *Talent: Implications for a U.S. Army Officer Corps Strategy*, November 2009, authored by Colonel Casey Wardynski, Lieutenant Colonel David S. Lyle, and Lieutenant Colonel (Ret) Michael J. Colarusso.

1. *Towards a U.S. Army Officer Corps Strategy for Success: A Proposed Human Capital Model Focused upon Talent*, April 2009, authored by Colonel Casey Wardynski, Lieutenant Colonel David S. Lyle, and Lieutenant Colonel (Ret) Michael J. Colarusso.

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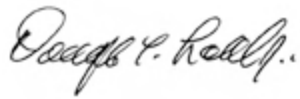
FOREWORD

Still Soldiers and Scholars? An Analysis of Army Officer Testing traces the history of officer accessions testing and assessment in the U.S. Army from about 1900 until the present day. This book is intended to supplement the series of monographs written by the Army's Office of Economic and Manpower Analysis (OEMA) that were intended to provide a conceptual and theoretical framework for the development of an Army officer corps strategy. Those monographs consider the creation and maintenance of a highly skilled officer corps in the context of the nation's continuing commitment to an all-volunteer military, its far-flung international interests, and ongoing changes in its domestic labor market. They advocate building a talent-focused strategy around a human capital model focused on accessing, developing, retaining, and employing talent.

The focus of *Still Soldiers and Scholars?* is on the controversial, little understood, and often ignored component of talent management known as cognitive assessment. While the Army has embraced various non-cognitive assessments of individuals' skills and abilities, which are also admittedly important parts of talent management, it as an institution has been reluctant to place too much of an emphasis on the cognitive testing of officer aspirants. Commissioning sources either set no minimum cut-off score on standardized tests or routinely waive the requirement to attain a minimum score. Indeed, the Army's largest commissioning source—the Reserve Officer Training Corps (ROTC)—no longer requires all, or even the majority, of its officer candidates to take a test measuring their cognitive abilities.

By recounting the long history of officer accessions testing in the U.S. Army, the authors of *Still Soldiers and Scholars?* shed light on a very neglected and misunderstood topic and offer insights into how and why the Army has arrived at the policies and programs it currently has for screening officers for cognitive abilities. They conclude that cognitive testing for officer producing programs is an essential part of the talent management process. It is critical to creating the Army's force of the future, because it will produce the type of critical thinking, mentally agile, and intellectually flexible leaders the Army needs to meet the challenge of an environment that is becoming increasingly ambiguous, volatile, and chaotic.

After devoting the bulk of the book to describing the evolution of officer accessions testing over the last century, the authors provide a list of recommendations and observations intended to help the Army think through the officer testing issue. Their recommended measures were crafted to make the officer accessions process more selective, and to ensure that the Army has a reasonable, but definite, intellectual baseline from which to work. The prescriptions they provide are reasonable, achievable, and crafted to be accepted by economy-minded defense officials.



DOUGLAS C. LOVELACE, JR.
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SUMMARY

Still Soldiers and Scholars? An Analysis of Army Officer Testing was written as a supplement to a series of monographs authored by members of the Office of Economic and Manpower Analysis (OEMA) and published by the Strategic Studies Institute (SSI) in 2009 and 2010. In those monographs, the authors proposed an officer corps strategy based on the theory of talent management. Other observers have contributed to the discussion, most notably, perhaps, Tim Kane, a research Fellow at the Hoover Institution, in *Bleeding Talent* (2012).

This book focuses on one critical, yet neglected, aspect of the talent-based officer management system that performs four functions: accessing, developing, retaining, and employing talent. The book focuses on the cognitive testing and evaluation of officer aspirants, a critical element in the accession function. The book opens with an introduction in the first chapter, explaining the contemporary significance of the cognitive capability (and hence testing) of officers. Next, eight historical chapters are presented, which describe how the Army conducted cognitive testing for officers over time. The final chapter offers a conclusion in which the authors review their findings, highlight important conclusions, and offer recommendations for the Army to restore a system of rigorous and effective mental screening for officers.

Chapter 2 traces the history of officer testing from the Spanish-American War through World War I. The chapter is organized around the three principal commissioning sources during this era—the U.S. Military Academy (USMA) at West Point, the enlisted force, and civil life (that is, officers drawn from the civilian

population). Except in wartime, West Point was by far the Army's largest commissioning source. The rigorous mental tests used to screen applicants for a commission are described in some detail, as are the admissions policies and conditions at West Point. A surprisingly large proportion of cadets during this era, somewhere between 50 and 80 percent, attended post-secondary educational institutions before applying to West Point.

Chapter 3 covers officer selection during World War I. The Army had to take extraordinary measures to produce enough officers to direct its expanded force. The former-War Department established a system of Officer Training Schools (OTS) that vetted, and, to a limited extent, trained the men who eventually received line commissions. Starting with the third series of camps, the War Department drew principally from the enlisted ranks for its officers. The OTS model had pronounced shortcomings, but it brought some consistency and standardization to the commissioning process. The War Department's officer selection system for the technical and professional branches was more traditional and haphazard. In many of these branches, political influence, personal connections, and chance regulated the commissioning process. West Point underwent acute changes during the war; its curriculum was severely curtailed, and it eliminated the entrance test as a prerequisite for admission, thereby lowering standards.

Chapter 4 provides a review of officer testing during the interwar period. Standards for entrance into the officer corps remained quite high throughout that period, and applicants for commissions exceeded vacancies. West Point's entrance standards may have eroded slightly as the institution expanded

and admitted a majority of its students by certificate until 1930. It also established a pathway for enlisted candidates into the Academy in 1920 via preparatory schools across the country. Even so, the admissions standards at West Point remained quite high. During the Great Depression, West Point could offer a free, elite education and a well-paying job after graduation. The Army tightened up admissions policies in 1930 when it adopted a validating exam to screen applicants more carefully before admitting them into the Academy.

Accessing officers during World War II is the subject of Chapter 5. The calculus of officer production for the Army changed fundamentally in World War II. Officer Candidate School (OCS) accounted for the bulk of new line officer accessions, while direct commissioning furnished the majority of officers for the professional and technical specialties. While entrance testing for the OCS program was more consistent and standardized than it had been in World War I, it was no more rigorous. With the outbreak of war, the War Department abandoned the criterion-referenced exams of the peacetime Army and adopted the Army General Classification Test (AGCT) as the principal officer testing instrument. It did so not because the AGCT was optimal for the task, but because nothing better was available at the time. It also set a minimum AGCT score of 110; not for any objective reason, but because it enabled the Army to meet its wartime officer needs.

Chapter 6 analyzes the tests used to screen officer candidates in the 2 decades after World War II, when the mental testing of Reserve Officers' Training Corps (ROTC) graduates underwent a transformation. Before the war, candidates were given rigorous,

criterion-referenced tests of academic attainment and general intelligence in order to identify individuals with the intellectual skills required of field grade officers. After the war, candidates were given norm-referenced tests of mental ability and academic attainment. The emphasis was on finding lieutenants capable of functioning effectively as junior officers and motivated toward a career in the Army. The transformation in mental testing was, in part, a result of the Cold War strategic environment, which demanded a military that was constantly ready to fight. The Army no longer focused on producing erudite, strategically thinking officers capable of managing a mass mobilization effort and leading a huge citizen army in a general war. Now it had a more immediate and intellectually less ambitious focus: well-trained and motivated junior officers capable of leading platoons.

In Chapter 7, officer testing during Vietnam, an era of declining standards for officer accessions, is reviewed. The rapid and massive expansion of the Army and its officer corps led to a compromise with quality in each of its three major commissioning programs. ROTC saw its institutional base changed drastically. Elite, private colleges were replaced with less competitive state institutions in the South and West. The entrance tests, ROTC Qualifying (RQ)-8 and RQ-9, were circumvented with hundreds of waivers. OCS admitted thousands of undereducated officer aspirants and altered the intellectual, if not moral, complexion of the officer corps.

Chapter 8 reviews the officer cognitive screening during the first 2 decades of the All-Volunteer Force (AVF). In terms of testing, all three of the Army's main commissioning sources experienced a similar evolution in the post-Vietnam era. West Point,

ROTC, and OCS all diluted their mental standards and increased their emphasis on non-cognitive measures of career motivation, including non-cognitive interest inventories and biographical surveys. ROTC adopted a less rigorous test of mental ability in 1972, and then abandoned cognitive testing completely in 1984. OCS adopted a less rigorous test in 1979, and then abandoned that test in the mid-1980s, leaving a general technical (GT) aptitude area score of 110 as its only mental screen. West Point eliminated the College Board math and English achievement tests as an admissions requirement in 1973.

Chapter 9 covers the aspects of officer mental testing during the post-Cold War era. Officer testing in all three of the Army principal commissioning programs has followed a similar trajectory during the post-Cold War period: cognitive measures continued to be eclipsed by non-cognitive measures of aptitude and performance. The latter tended to be better predictors of retention in pre-commissioning programs in the Army than the former, which were found to have an inverse u-shaped correlation with career commitment. Budgetary pressures and military effectiveness combined to push defense and congressional leaders to demand economy and efficiency in pre-commissioning training, and to place a premium on non-cognitive measures.

The final chapter, Chapter 10, offers a conclusion and makes recommendations for improvements. In short, contrary to popular opinion and scholarly assertion, the rigor of the Army's intellectual selection instruments has deteriorated over the last century. In all three of the Army's principal commissioning sources—the USMA, the ROTC, and the OCS program—the trend has been toward declining standards

and declining (relative) scores. The size of the Army, changing economic paradigms and the consequent decline of the prestige of an Army career, expansion of college aid, unbalanced college growth, competition from the other services, increasing emphasis placed on officer retention, and diversity considerations all help explain this trend. To address and potentially reverse this decline, this book makes several recommendations with respect to officer mental testing. The principal recommendations are for the Army to: 1) require accessions testing for officer candidates in all commissioning sources; 2) establish explicit standards for these tests, both in terms of a minimum and an average; and, 3) do more to identify and access cognitively capable individuals from its large and diverse pool of enlisted Soldiers.

CHAPTER 1:

INTRODUCTION

Over the course of the last century, the Army has progressively diluted its intellectual screening instruments for the selection of officers. This dilution is not reflective of a deliberate choice by the Army but rather a slow, progressive adjustment to the reality of the recruiting environment. Restoring an intellectually rigorous screening process will require substantial time, work, and resources from the Army; but, in our opinion, it is a task worth undertaking.

This enfeeblement of screening standards is not widely recognized by academics and policymakers. In fact, many scholars would have us believe that the story of mental testing for officers has been a "triumph of science"—a story of unremitting progress in which the intellectual requirements for commissioning have been steadily raised over the years. In their narratives, they depict officer testing before World War II as being in a primitive state. In a recent book, one social scientist, with a long involvement in the area of officer screening, flatly states that, aside from the limited use of intelligence quotient (IQ) tests in World War I, "there was little systematic screening of officer candidates prior to World War II."[1] Stephen Ambrose, in his rather uneven history of West Point, paints a similar picture. He wrote that the U.S. Military Academy (USMA), in response to a congressional directive in 1812, introduced a rudimentary entrance examination in reading, writing, and arithmetic. There things stood until 1902, when, according to Ambrose, high school graduation replaced the basic literacy and numeracy test as an entrance requirement. How he could reconcile West Point's antebellum preeminence

as an institution of engineering education with such lax screening procedures is a mystery. Like some others who have written about the subject of officer accessions, Ambrose did not waste a lot of time digging around in the archives to construct his narrative. He certainly would not have had to dig very deeply to unearth the admissions tests used to screen Academy applicants in the late 19th and early 20th centuries. If he had done so, he would have probably come up with a different set of conclusions.[2]

As opposed to the primitive state of officer mental screening before World War II, some scholars intimate, the story after the war was one of steady advancement, with finely calibrated psychometric instruments gradually replacing the primeval instruments used in the earlier era. New, more holistic approaches to officer evaluation accompanied these new assessment instruments, making for a more useful and predictive selection process. In any case, they continue, there was not a great need for Army-developed mental screening mechanisms after World War II. The Army and Defense Department requirement that officers—or at least those who were commissioned through West Point or Reserve Officers' Training Corps (ROTC)—possess a baccalaureate degree "greatly reduced the need for additional screening."[3] As anyone familiar with trends and developments in post-secondary education over the last half century is well aware, this is a questionable proposition at best.

We find the picture of officer screening painted by many social scientists and historians to be, at best, incomplete. To be sure, the Army's psychometric instruments for officer selection have been refined and the Army's resultant ability to predict career success and retention in service has increased over the years.

This has not, however, been accompanied by more rigorous tests of academic achievement or mental ability. While it is true that the Army has become in some ways more systematic about officer screening, it has also become, we argue, less rigorous (i.e., intellectually demanding). Consistency and standardization do not necessarily equate to rigor. In fact, while the Army has been increasing its reliance on psychometric principles for screening its officer candidates, the emphasis of officer testing has shifted from academic and mental ability to non-cognitive factors such as motivation and likelihood of retention. In the age of the All-Volunteer Force, economic considerations rule, and high retention-rates are key to achieving economic efficiency.

Only recently have voices been raised questioning the conventional wisdom regarding the intellectual quality of the military's officer corps and the rigor of the officer screening process. One such voice has been Bruce Fleming, a professor of English at the Naval Academy. In his book *Annapolis Autumn,* and other publications, Fleming has questioned the rigor of the Naval Academy's screening process and the intellectual quality of students admitted to Annapolis.[4] Two political scientists, Matthew Cancian and Michael Klein, have posed similar questions about entrance requirements for the Marine Corps Officer Candidate School (OCS). They conclude that the intelligence level of newly accessed Marine officers has dipped substantially since 1980.[5] Stephen Gerras and Leonard Wong, both from the U.S. Army War College (USAWC), have evaluated the Army's pre-commissioning mental screening standards and found them wanting. Their recent article on the Army's intellectual screening procedures highlights pre-commissioning testing gaps

and questions the rigor of the mental screening process for officers. They contend that:

> quality metrics for officer accessions are uneven and oftentimes meaningless. Thus, despite the Army's focus on achieving cognitive dominance on the future battlefield, officer accession quality standards are inconsistent, sometimes non-existent, and not on par with enlisted accession standards.[6]

This long-term trend toward relaxed mental screening standards is troubling given the Army's current emphasis on the development of cognitive skills in officers, the perceived lack of strategic acumen among the Army's general officers, and the low level of basic literacy and numeracy among mid-career field grade officers. To be sure, there is a growing awareness that things might not be as auspicious as some social scientists would have us believe relative to the intellectual quality of the officer corps. Still, among senior Army leaders at least, the need for more exacting intellectual entrance gates for commissioning has not become an issue.

A NEW ERA?

Since the end of the Cold War, the intellectual demands on the Army's officer corps have increased substantially. Today, the Army faces a security environment of, in the words of the authors of the USAWC's *Elihu Root Study*, "growing complexity and danger."[7] Technological advances as well as the new and more multidimensional threats that have arisen in recent years are making extraordinary demands on the intellectual capability of the officer corps. Responding to these new conditions, the Army has revamped its operational doctrine to meet the new threats that have

arisen. AirLand Battle, the Army's doctrine during the Cold War, gave way to new doctrinal approaches contained in concepts such as Full Spectrum Operations, Network Centric Warfare, and Charles C. Krulak's "Three Block War."[8]

Over the last decade or so, the Army has reassessed the security challenges facing the nation and has adumbrated the type of officer corps it needs to meet these challenges. These challenges encompass both environmental factors and threats posed by what are seen as adaptive and increasingly powerful potential adversaries. According to the Army, the "dynamic and complex future operational environment" that is rapidly taking shape is distinguished by:

> **five fundamental characteristics**: increased velocity and momentum of human interaction, growing potential for overmatch, increased proliferation of weapons of mass destruction, spread of advanced cyberspace and counterspace capabilities, and changing demographics that increasingly require operations among urban populations and in complex terrain [emphasis added].[9]

Moreover, Army leaders assert, while the institution is preparing to adjust to or compensate for these characteristics, it must be prepared to "engage globally in multiple domains."[10]

The "unprecedented connectedness" that now characterizes global interaction has aroused special concern. This connectedness, Army leaders believe, has resulted in a "rising velocity of human interaction" that will make it more difficult for leaders to understand events completely or to predict the aftermath of any incident. Army leaders stand in danger of becoming overwhelmed with information and being presented with multiple dilemmas within very

constricted timeframes. This difficult environment will require future Army officers to perform at a higher intellectual level than they presently do.[11]

The connectedness that allows for the rapid proliferation of ideas and technology tends to level the technological playing field. It is helping prospective adversaries close the technology gap with the United States and gain near-peer status in many realms. This trend is leading to increasing competition in the land, air, sea, space, and cyber domains. In an earlier era, the United States could rely on its superior industrial base, powered by a stout research and development capability, to maintain a significant advantage over likely competitors and enemies. This advantage is rapidly evaporating. As the technology gap closes and fiscal austerity erodes U.S. military superiority, the Army must find new ways to ensure it is capable of meeting adaptive threats and dominating throughout the full spectrum of military operations.[12]

One thing that the Army must do to cope with this new and substantially more complex security environment is to find better ways to select, develop, and leverage its people. It must produce leaders who have a heightened appreciation of social context, a highly refined sense of cultural empathy, an ability to craft apposite solutions to multifaceted human problems, a capacity to innovate on the battlefield, a well-developed social intuition for their operational environment, and the intellectual ability to think broadly about the nature of the conflict in which they are engaged. This, at least, is what Army pronouncements on the subject tell us we need. To meet these many demands, the Army must possess leaders who are agile, adaptive, and knowledgeable warriors with critical thinking skills and broad cultural understanding.[13] Talent

management is supposed to play a part in aligning the Army's talent base with its requirements and capabilities. This alignment is to begin with establishing a baseline inventory of individual strengths and weaknesses. Assessments of personal aptitude and potential, together with predictive analytics and educational programs to optimize individual strengths, are supposed to play a key role in this effort.[14]

Some observers doubt that, intellectually, the officer corps is up to the complex and wide-ranging demands and threats currently facing it.[15] They portray the officer corps as being still mired in a Cold War mindset and unable to adjust to the conditions of a new age.[16] While Operation DESERT STORM and the initial stages of Operation IRAQI FREEDOM showed that the Army's officer corps was a well-trained body of military professionals, the rather spotty record of the officer corps in unconventional conflicts in the years thereafter took some of the luster off its reputation and cast doubt on its collective strategic acumen. The intellectual ability of the officer corps, some have argued or suggested, has simply not kept pace with the demands of the new strategic environment.[17] James G. Pierce of the Strategic Studies Institute (SSI) is one who believes that the Army's leaders, when considered as a group, are intellectually unprepared for the challenges of the operational environment. He asserted that the Army's senior leaders "may be inadequately prepared to lead the profession toward future success."[18] Prominent civilian commentators such as Thomas Ricks have expressed the same concern.

Moreover, many of the observers who do see a problem consider the lack of mental acuity among Army officers as a professional education issue, not an officer screening matter. If only the curricula in Army

schools and educational programs could be improved, they suggest, the Army's dearth of strategic leaders could be alleviated. Such an educational revamping could supposedly produce leaders who are more mentally agile and situationally aware than their predecessors who had been prepared to battle the Warsaw Pact during the Cold War.[19]

In today's security environment, the Army expects all officers, even lieutenants and junior captains, to be flexible, adaptive, innovative, situationally aware, and culturally sensitive leaders capable of thinking critically and solving complex problems. For a time, the Army said that it wanted officers who were polymaths (or "pentathletes" as they were dubbed in official publications), knowledgeable in multiple disciplines and capable of drawing connections across multiple domains. The officer had to be a diplomat, counselor, historian, engineer, polyglot, and sociologist. An officer was, as one officer observed, expected to be a jack of all trades and a master of them all. In the Balkans, and later in Iraq and Afghanistan, even junior leaders were called upon to make tactical decisions that had operational and strategic implications. The day of the strategic corporal and lieutenant had seemingly arrived. More recently, the Army has backed away from this pentathlete model, realizing that few people fit this mold and those few that do may not want to serve in the Army.[20] Still, the Army continues to call for leaders who think critically and creatively, possess mental adaptability, and possess cultural awareness.[21] The rhetoric has been tempered but the demands remain daunting.

The Army faces a dilemma. The intellectual demands being placed on the officer corps are high but the rigor of its intellectual screening mechanisms

to control entry into the officer corps is low—and continues to decline. In some respects, the Army's officer accessions standards have never been lower, at least during peacetime.

Unlike the business world, the military does not have the option of importing talent and solving its human capital deficiencies through lateral entry. It cannot go outside the organization to hire a general, or even a captain, at least, not in most line branches. The services must work with what they initially take in and try to develop their own strategic thinkers. This puts a premium on officer selection and a premium on native intellectual ability, since, as will be explained later in this chapter, intelligence is the single most important factor in predicting who does and does not think critically and strategically. For many observers, this is an extremely uncomfortable and unpalatable fact.[22]

INDICATIONS OF THIS DECLINING STANDARD

This relaxation of mental standards is indirectly reflected in a number of ways. One sign of this relaxation of standards can be seen in selection standards at the USMA, the commissioning source widely regarded as the Army's gold standard for officers. Since World War II, West Point has fallen out of the ranks of the nation's elite academic institutions. To be sure, its faculty has not been elite since the mid-19th century. Its student body, however, had been top flight until the 1950s. In the first half of the 20th century, it outperformed the nation's most distinguished civilian undergraduate institutions on tests of academic achievement. As late as 1946, West Point cadets outperformed Yale undergraduates on the

Scholastic Aptitude Test (SAT). This began to change in the 1950s. By 1960, Yale outclassed the USMA in almost all measures of academic attainment; by 2014, the USMA even scored below some state-supported flagship institutions on tests of academic achievement and aptitude. In an academic sense, West Point is no longer elite—at least not based on standardized test scores (see Figure 1-1).[23]

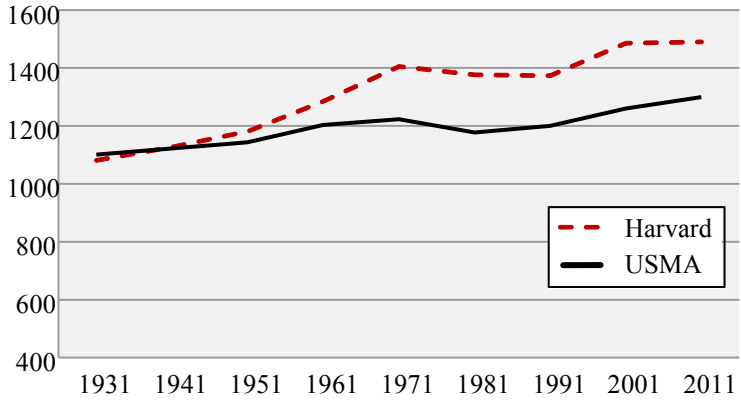

Figure 1-1. SAT Scores, 1956-2015
USMA versus Harvard.

West Point's decline in selectivity is also underscored by the decreasing percentage of entering cadets with prior college experience and the quality of the institutions that these cadets attended. Forty-three percent of the class of 1901, for example, had matriculated at other colleges before attending West Point. Among the institutions attended were: the University of Chicago, Columbia, Cornell, Harvard, Stanford, Johns Hopkins, Massachusetts Institute of Technology, the U.S. Naval Academy, the University of Pennsylvania, and Yale. Today, one would be hard-pressed

to find a student who had spent 3 years studying at an Ivy League institution just to qualify for an appointment to West Point, as many cadets who entered West Point before World War I did. After World War II, the percentage of cadets with prior college experience began an extended decline. It fell to 30 percent by the late 1950s and to 20 percent by the 1970s. By 2014, only 11.7 percent of West Point's graduating class had prior college experience and, as one might expect, none of the institutions named above were represented among cadets.[24]

Recently, there has been some attention focused on the question of officer screening, in relation to the Army and to other services. Fleming has called attention to what he sees as screening shortcomings at the Naval Academy. According to Fleming, the Navy's fixation on enlisted candidates and diversity considerations has led Annapolis to lower the intellectual standards for admission. Cancian and Klein, in their study of Marine Corps officer aspirants, found that the entry level scores of Marine Corps officers on the Armed Services Vocational Aptitude Battery's (ASVAB's) General Classification Test (GCT) had declined significantly between 1980 and 2014. This decline in GCT scores, they noted, mirrored the increase in the college participation rate of students who became Marine officers and who enrolled in "green-to-gold" type programs.[25]

THE IMPORTANCE OF COGNITIVE TESTING FOR OFFICER ACCESSIONS

One of the fundamental premises upon which we built this book was that in officer accessions, tests of cognitive ability such as the SAT, American College

Testing (ACT), and various intelligence/aptitude tests (including the ASVAB and the derivative Armed Forces Qualification Test [AFQT]) matter. More than any other single factor, intelligence, or "*g*," predicts success or achievement in learning, training, education, workplace performance, health, income, and wealth.[26] How intelligence is measured, and how intelligence affects outcomes such as those just listed, are discussed next.

We accept Arthur R. Jensen's definition of intelligence—namely, the general ability to perform well on a large and varied battery of mental tests.[27] When test takers are given a wide variety of mental tasks to perform, it becomes possible, through a statistical procedure called factor analysis, to identify factors associated with performance on the test.[28] For example, a verbal ability factor emerges from performance on reading, language, syntax, synonyms, and related questions. From doing addition, subtraction, multiplication, and division, a quantitative factor emerges. However, it is well documented that an overall general factor (*g*) also emerges. This general factor influences performance on questions and tasks of all sorts. It is not a particular ability or skill per se; rather, it is perhaps best thought of as overall cognitive fitness. The number typically assigned to *g* is the familiar IQ.

The U.S. Army does not administer traditional intelligence tests; however, it does use the AFQT. Research conducted in 1974 by David F. McGrevy, Stephan B. Knouse, and Ronnie A. Thompson showed that the AFQT was significantly correlated with scores on the Wechsler Adult Intelligence Scale.[29] Correlations were .48 for black Air Force enlistees and .71 for white Air Force enlistees. Research that is more recent

established a corrected correlation between the AFQT and the Multidimensional Aptitude Battery of .9241.[30]

The Army uses the ASVAB and the AFQT for enlisted personnel but not for officers (with the exception of OCS candidates and a number of ROTC cadets who, by virtue of prior enlisted service, take the ASVAB). Instead, the Army relies on the SAT and ACT for officers sourced from the USMA and, contrary to a popular notion, for **only a portion** of each ROTC commissioning cohort. (For a large portion of each ROTC entering cohort, the Army uses no mental screening instrument.) Some colleges rely on these tests to assist in the admissions process—specifically, to predict collegiate grades. With a long history of administration (the SAT being first administered in 1926 and the ACT in 1959), the research literature is clear on their important, but not necessarily large, relationship to intelligence and academic achievement. Meredith C. Frey and Douglas K. Detterman compute the correlation between the SAT and Raven's Advanced Progressive Matrices, corrected for nonlinearity, to be .483, while the correlation between the SAT and AFQT, again corrected for nonlinearity, to be a very strong .86.[31] Finally, although it has a shorter history and has generally been used less frequently, the ACT was shown by Katherine A. Koenig, Meredith C. Frey, and Douglas K. Detterman to correlate .77 with the ASVAB and .61 with Raven's Advanced Progressive Matrices. In short, the Army has access to (but does not always use) fairly decent measures of cognitive ability, which correlate strongly with each other.[32]

Should the Army measure cognitive ability? Jensen makes the following extraordinary, but well documented, claim regarding general mental ability:

> The *g* factor (and other highly *g*-loaded test scores, such as the IQ) shows a more far-reaching and universal practical validity than any other coherent psychological construct yet discovered. It predicts performance to some degree in every kind of behavior that calls for learning, decision, and judgment. Its validity is an increasing monotonic function of the level of cognitive complexity in the predicted criterion. Even at moderate levels of complexity of the criterion to be predicted, *g* is the *sine qua non* of test validity. The removal of *g* (by statistical regression) from any psychometric test or battery, leaving only group factors and specificity, absolutely destroys their practical validity when they are used in a population that ranges widely in general ability. The validity of *g* is most conspicuous in scholastic performance, not because *g*-loaded tests measure specifically what is taught in school, but because *g* is intrinsic to learning novel material, grasping concepts, distinctions, and meanings. . . . In the world of work, *g* is the main cognitive correlate and best single predictor of success in job training and job performance. Its validity is not nullified or replaced by formal education (independent of *g*), nor is it decreased by increasing experience on the job. . . . The *g* factor is also reflected in many broad social outcomes. Many social behavior problems, including dropping out of school, chronic welfare status, illegitimacy, child neglect, poverty, accident proneness, delinquency, and crime, are negatively correlated with *g* or IQ independently of social class of origin. These social pathologies have an inverse monotonic relation to IQ level in the population, and show, on average, nearly five times the percentage of occurrence in the lowest quartile (IQ below 90) of the total distribution of IQ as in the highest quartile (IQ above 110).[33]

Generally speaking, extraordinary claims require extraordinary evidence. The reader should note that *g* is the most studied topic in psychology; that is, more studies have been done on human intelligence than on any other topic (including sexuality and personality). It is also one of the oldest topics studied. The research

literature reviewed below certainly justifies Jensen's claims regarding the importance of *g*.[34] We, the authors, readily concede, however, that intelligence is not the only thing that matters. Certainly, motivation and opportunity affect outcomes as well.[35] Particularly, motivation can influence one's intelligence test scores, hence compromising the predictive validity of the intelligence tests.[36] However, as will be shown, *g*, as measured by IQ tests, is a remarkably powerful predictor. We will review the research literature, which shows how intelligence is positively related to sensory discrimination, to job selection and performance, to health, and to state and national wealth.

The relationship between *g* and job performance is strong, positive, and nearly linear. This suggests that both entrance into a particular job or job field, and performance in that job, can be predicted fairly well from intelligence test scores. The crux of this relationship is complexity.[37] Essentially, an IQ score is a numerical indicator of how well the test taker can solve problems. Since these problems vary in complexity, it follows that the IQ score is also a numerical indicator of how well one handles complexity. Some jobs are inherently more complex than others are; for example, neurosurgery compared to commercial painting. It follows, then, that individuals with greater intelligence would be more likely to enter fields that are more complex and, having entered those fields, outperform their less intelligent counterparts. This is just what the research literature reveals.

H. T. Himmelweit and J. W. Whitfield successfully differentiated 39 different occupations based on mean intelligence test scores for British Army recruits. Occupations such as schoolmaster and teacher had mean test scores of 40.65 and 39.68, respectively, while

occupations such as butcher and miner had mean test scores of 17.73 and 14.90, respectively.[38] Jesús F. Salgado, Neil Anderson, Silvia Moscoso, Cristina Bertua, Filip de Fruyt, and Jean Pierre Rolland had similar success in examining the relationship between general mental ability and 11 occupational groups. They calculated correlational coefficients, which ranged from lows of .24 and .45 (the former for police and the latter for driver and typing) to highs of .66 and .67 (for sales and manager, respectively).[39]

Frank L. Schmidt and John E. Hunter meta-analyzed 85 years of research in personnel psychology and computed a correlation coefficient between general mental ability and job performance of .51; this result confirms the earlier findings of Malcolm James Ree and James A. Earles, which demonstrate that *g* is far more important for predicting job performance than are job-specific factors.[40] The predictive validity of *g* is maintained even within narrow bands, such as those limited to holders of particular undergraduate or graduate degrees in science and technology. Gregory Park, David Lubinski, and Camilla P. Benbow were part of a research project in which mathematically precocious youth who took the SAT-Math by age 13 and scored very high (i.e., in the top 1 percent of the population) were followed for more than 25 years. They found that, when these individuals were clustered into one of three groups—bachelor's, master's, or doctorate degrees—*g* was still able to predict their differential creative potential (defined as the number of patents or publications).[41]

This relationship is maintained in the military. Jeffrey J. McHenry, Leaetta M. Hough, Jody L. Toquam, Mary Ann Hanson, and Steven Ashworth examined how well cognitive ability, perceptual-motor ability,

personality, interest, and job outcome preference measures predicted core technical proficiency and general soldiering proficiency for enlisted Soldiers in nine Army jobs. Intelligence was by far the best predictor of both, with correlation coefficients of .63 and .65, respectively. The military trains well and often, and in this realm as well, the best predictor of training success is shown to be *g*.[42] Ree and Earles showed how *g* was a far better predictor of job-training school grades for 78,041 Air Force enlistees in 82 jobs than were specific abilities.[43] Salgado et al., who examined how well *g* predicts job performance, also examined how well it predicts job-training success. The correlation coefficients they calculated for the 11 job categories ranged from lows of .25 and .27 (for police and skilled workers, respectively) to highs of .72 and .74 (for chemistry and engineer, respectively).[44]

Finally, if the Army has an interest in reducing the incidence of accidents (and it most assuredly does), then again it would do well to pay attention to psychometric *g*. The relationship between the two, though small, is consequential. Ross R. Vickers and Adriana Villaseñor examined U.S. Navy enlistees and calculated a correlation coefficient between intelligence and accidents to be .263. They concluded, "at the occupational level, the average intelligence of occupational incumbents and the physical hazard level of an occupation predicted injury rates."[45]

While job training, job performance, and even the type of job field selected are all influenced by *g*, there is also evidence that *g* plays an economic role as well. For black and white American Armed Forces veterans, Helmuth Nyborg and Arthur R. Jensen calculated correlation coefficients between *g* and income of .37 and .36, respectively.[46] Even when the unit of analysis is

expanded, *g* remains a significant predictor of wealth. Satoshi Kanazawa correlated IQ and the gross domestic product (GDP) per capita of the 50 United States. Using two different techniques, he computed coefficients of .5034 and .5481; regardless of which of the two is the more accurate, they are both very substantial for the social sciences.[47] Garry A. Gelade, Earl Hunt, and Werner Wittmann were able to produce similar results in their examinations of the relationship between IQ and national wealth.[48] Jay L. Zagorsky, in fact, demonstrated that "each point increase in IQ test scores raises income by between $234 and $616 per year after holding a variety of factors constant."[49] In addition, Garett Jones and W. Joel Schneider found that "a 1 point increase in a nation's average IQ is associated with a persistent 0.11% annual increase in GDP per capita."[50]

The relationship between IQ and wealth is not as straightforward as it is with job performance or school achievement; this is so simply because individuals are not nations. For nations, the strong influence of high IQ on wealth seems to be concentrated on the high end.

Heiner Rindermann, Michael Sailer, and James Thompson found that it is the presence (or relative absence) of individuals at the 95th percentile of general mental ability (i.e., and IQ score of at least 125) that makes the difference. When they are found in high numbers (or, more accurately, in higher numbers than in other countries), scientific and business activity is greatly improved. The result of the improved activity is an overall increase in a nation's wealth.[51] This effect holds promise for the Army. To the degree it attracts and retains individuals of above-average intelligence, it can expect an improved climate for strategizing and for tactical operations. The research of Linda S.

Gottfredson, Richard J. Herrnstein, Charles Murray, Richard Lynn, and Tatu Vanhanen support these findings and interpretations.[52]

Given these results from scientific investigations, the judicious use of mental ability tests seems to us to be fully warranted.[53] Issues remain, of course. These tests are not perfect, and there is always the contentious problem of "disparate impact." To the degree there are issues to deal with, social scientists can only assist the resolution process. "There is . . . no psychometric solution to the problem of adverse impact. The solution must come from policy, not science."[54]

SOME COMMENTS ON ORGANIZATION AND METHODOLOGY

In this book, we will sketch the history of officer testing or mental screening since 1900. The focus will be on line officers—the officers who perform the Army's core function—as opposed to officers going into one of the technical or professional specialties. The next chapter will deal with officer accessions between the Spanish-American War and World War I and will trace the adjustment that the Army had to make in officer testing as it expanded and transitioned from an essentially frontier constabulary to an expeditionary force capable of, or at least aspiring to, project U.S. power across the globe. Chapter 3 will deal with World War I and the dramatic changes in officer screening that the Army had to make to fill the officer ranks in that conflict. The fourth chapter covers officer screening during the interwar period. Officer selection was conducted in and shaped by an environment characterized by fiscal austerity and, until the late 1930s, governmental and public indifference.

Officer testing in World War II is the subject of Chapter 5. World War II marked the beginning of the modern method of officer selection and was a turning point in the way Army leaders conceptualized officer selection. The sixth chapter deals with officer screening in the 2 decades after World War II. By necessity, the Army had to make fundamental alterations in the way it selected officers in peacetime due to a number of fundamental changes in the size, mission, orientation, and social composition of the officer corps. Officer selection during the Vietnam War is the focus of Chapter 7 of our narrative. As in previous major conflicts, the Army was forced to trade quality for quantity in its quest to fill the officer ranks. In Chapter 8, we take up the story of officer selection in the first 2 decades of the All-Volunteer Force (AVF). Screening standards become more flexible in this era due to the necessity to accommodate market forces. Officer screening in the post-Cold War era is the focus of Chapter 9. The wars in Iraq and Afghanistan again challenged the Army's ability to maintain officer quality while staffing the force at acceptable levels. Chapter 10, our final chapter, will attempt to explain the gradual dilution of officer screening standards, since 1900, by looking at a number of social, political, and demographic forces that we think have the most explanatory value. In our final chapter, we will offer some tentative recommendations about how we believe the officer screening process can be improved.

Within our larger chronological framework, our chapters are organized by commissioning source. Each one of the three principal sources of line officer accessions has some commonalities, but also significant differences. These differences are based, among other things, on different expectations for each source

as well as the location of these sources within the organization of the Army. We concentrate on the Army's two most prolific sources during peacetime, the ROTC program and West Point. OCS will receive less detailed coverage, except during wartime, when it has become, for short periods of time, the Army's largest source of commissioned (SOC) officers.

Our book is a multi-disciplinary effort that draws upon the fields of history, psychology, and economics. This work is primarily a work of history, with psychology and economics being used to reinforce and clarify the historical narrative. Our book draws on a mix of secondary and primary sources. We rely heavily upon materials found in the USMA's archives, as well as the annual reports of the superintendent to inform our account. We also completed some original analyses of officer entrance exams and officer screening data (e.g., test scores over time by SOC). We are convinced that one of the biggest advantages of our approach is the extended timeline we have chosen to analyze. Trends that are not evident over the time span of a few years, or even a few decades, become very evident when looked at over a timeframe of more than a century.

During the course of our research, we uncovered no "smoking gun"—no single piece of evidence that proves our case about the dilution of officer testing standards over time. Neither did we conduct a standard statistical study of the type that is the stock-in-trade of social scientists. Nevertheless, we paint a compelling picture showing how testing standards have steadily declined over the decades. We compiled a mass of evidence that is so overwhelming and suggestive that it becomes, in our opinion, almost incontrovertible.

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CHAPTER 2:
OFFICER SELECTION BEFORE WORLD WAR I

THE POST-BELLUM ARMY

In the decades before the Spanish-American War, line officers were procured from three sources: the U.S. Military Academy (USMA), the enlisted ranks of the Army, and civil life.[1] Officer selection in the post-bellum Army was exacting. Candidates from civil life and the enlisted force had to pass rigorous mental examinations before they could receive a commission. Stiff examinations also regulated appointments to West Point, although the 4-year Academy experience itself was an effective screening mechanism with the attrition rate averaging about 50 percent for each class. The system of officer examinations that regulated entry into the officer corps ensured what today we might call a high baseline of officer quality, at least in regard to mental selection standards.

The Army could afford to be selective in its appointment of officers because of its diminutive size relative to the overall population. Between 1871 and the beginning of the Spanish-American War, the total enlisted strength of the Army averaged around 25,000 men while Regular Army officer strength hovered just below 2,000. This was a small force for a nation that had a population of about 39,000,000 in 1870 and about 75,000,000 in 1898. A small Army meant that annual officer accessions totals were correspondingly low. On only 3 occasions between 1871 and 1898 did the Academy's annual commissioning total top 70 cadets. West Point's annual output during this period averaged around 50. The other commissioning sources

provided relatively few officers. Commissions from the ranks averaged slightly more than seven per year, while appointments from civil life averaged just over nine per year.[2]

WEST POINT

West Point was the Army's principal commissioning source in the last third of the 19th century. Unlike today, the Academy in the post-bellum period was among the most selective institutions in the country. It had a sterling reputation. At the turn of the century, West Point had more entries in *Who's Who in America* than any other undergraduate institution in the country. While the Academy was no longer the nation's premier engineering institution as it was in the ante-bellum period, being admitted to West Point still represented a significant accomplishment. The small size of the institution, its strict selection standards, high attrition rate, and relatively attractive lifestyle and high social status afforded Army officers attracted some of the nation's brightest undergraduates.[3]

There has been confusion among historians about admissions standards at West Point prior to World War I. Those standards have been mistakenly portrayed as being minimal. To be sure, the **legislative** requirements for admission were quite low. In 1812, Congress merely required applicants to be "well versed in reading, writing, and arithmetic." It added English grammar, U.S. history, and geography to the requirements in 1866, but the statutory requirements posed no serious hurdle for even the marginally qualified candidate. Moreover, the methodologies used by congressmen to select **nominees** for the Academy were generally ineffective as mental screening devices. Many congressmen distributed nominations as a form of patronage. Many others used the most elementary

tests of academic achievement. However, it must be kept in mind that even if a young man secured a nomination on the basis of flimsy screening measures, he still had to pass the Academy's strict entrance test to be admitted. Roughly half of all congressional nominees could not pass this examination.[4]

WEST POINT NOMINATIONS

The following is excerpted from R. Eric Petersen and Sarah J. Eckman, *Congressional Nominations to U.S. Service Academies: An Overview and Resources for Outreach and Management,* and although Petersen and Eckman are describing the contemporary nomination process, their comments are generally true of the nomination process since 1900.

> Members of Congress are authorized by law to nominate candidates for appointment to . . . service academies. . . . Although it [the nomination] is an essential component of the appointment process, a congressional nomination does not guarantee an individual's admission or appointment to a service academy. In addition to securing a nomination, a candidate must also submit an application packet and fulfill other service academy requirements. . . . Even when a candidate meets all these requirements and is deemed to be qualified for admission, he or she may not receive an official appointment, due to the limited number of spaces available at each service academy.
>
> The nomination of constituents to one of the service academies can provide Members of Congress with the opportunity to perform community outreach and other representational activities. In some states and congressional districts, nominations are highly competitive. Others are less competitive, and some offices do not receive expressions of interest from enough applicants to fill the number of nominations allocated. Consequently, some congressional offices may need to dedicate considerable staff resources to the selection process to identify qualified candidates, while others can incorporate service academy nominations alongside other constituent service activities such as casework.
>
> Historical records indicate that the congressional nomination served to help democratize and diversify the ranks of military officers. Congressional nominations ensured that academy appointees represented all geographic areas of the United States, came from a diverse set of family backgrounds, and would not be subject to executive branch political patronage.[5]

The Academy's entrance examinations were thorough, as well as demanding. A modern undergraduate seeking entry into West Point would almost certainly blanch at their difficulty. These exams covered a multitude of subjects, to include: reading, writing, English grammar, English composition, English literature, arithmetic, algebra through quadratic equations, plane geometry, descriptive geography, physical geography, U.S. history, the outlines of general history, and the general principles of physiology and hygiene. In his book *Carved in Granite*, Lance Betros describes the test and its rigor:

> Until 1870 the [entrance] exam was oral, which allowed subjectivity in grading. Afterward, nominees took a written test that faculty members graded anonymously to enhance objectivity. By the late nineteenth century, the entrance exam had turned into a mental marathon, encompassing a series of subject tests requiring three days to administer. The exam, as unforgiving as it was long, posed a formidable obstacle to admission. The Academic Board refused to make accommodations for the lesser-prepared nominees and cadets. On the contrary, it ruthlessly enforced standards to cull the weak and maintain the institution's hard-earned reputation for excellence.[6]

The entrance test, in combination with the exacting academic standards of the Academy, effectively prevented the marginally qualified from receiving a commission.[7]

Students would spend considerable time preparing for the West Point entrance exam. A cottage industry of Academy preparatory schools grew up in various locations across the country to prepare students for the test. Even more telling was the large number of candidates who attended college before being admitted to

West Point. More than 50 percent of each entering class in the decade before the Spanish-American War had attended a traditional 4-year college prior to arriving at the Academy. Students who had matriculated at Ivy League institutions, such as Harvard, Yale, and Cornell, were well represented in the ranks of incoming cadets. Some cadets spent as many as 3 years studying at an Ivy League institution before entering the Academy. In addition to the 50 percent who attended a traditional college, a substantial percentage attended a normal school. Since the Academy did not differentiate between those who attended only high school and those who went on to a normal school, it is difficult to establish exactly how many applicants attended the latter type of institution.[8]

Selectivity at the Academy must be viewed in the context of the times. The latter half of the 19th and early part of the 20th century was a period in which various professions were coalescing and establishing standards and criteria for the qualifications of their members. By 1900, most professions had established an educational pattern that required a baccalaureate degree and additional professional schooling. The military was moving in the same direction. The Army wanted its officers to have bachelor's degrees and follow-on professional schooling. Secretary of War Elihu Root's system of professional military education, instituted after the Spanish-American War, was designed to mirror the system of education that regulated other professions. In addition, like other professions, the military established standards of knowledge and performance for serving officers. In the 1880s, the Army began to require its lieutenants and captains to pass an examination to be promoted. The Navy did likewise. In an era of rising professional consciousness and standards, the Army's determination to maintain high

admissions standards at West Point fit in nicely with the evolving professional paradigm.

CANDIDATES FROM CIVIL LIFE/ENLISTED RANKS

The mental tests required of non-West Point officer aspirants were even more arduous than those given to their Academy counterparts. This was because these exams screened candidates about to be accessed into the officer corps rather than cadets who still had 4 years of education in front of them. The tests encompassed a wide variety of academic subjects that men holding baccalaureate degrees were expected to master. A brief and admittedly incomplete history of these examinations will be provided below to give a general idea of the mental requirements for admission into the officer corps in the last third of the 19th century.

The first of these officer selection exams for candidates from civil life and the enlisted force was actually administered before the Civil War under the provisions of General Order No. 17, dated October 4, 1854. That general order established a procedure that was adhered to until the First World War. It provided for the convening of a board of officers to administer a preliminary examination and report the results of that exam to the Secretary of War. The candidates who passed the preliminary exam then went before a board composed of three West Point professors. The subjects covered in these examinations included: English grammar, arithmetic, plane and solid geometry, geography, map reading, history, the Constitution of the United States, the organization of the Federal Government, and the "general principles which regulate[d]

international discourse." These tests were suspended during the Civil War due to time constraints and the great demand for officers. To raise the thousands of officers needed to lead the mass armies of the day, vast latitude was given to state governors in granting commissions to men seeking positions in state-organized volunteer formations. Generally, state governors appointed men to the field grade ranks. They used a variety of methods to accomplish this. Nepotism was rife and the ability to raise a company or regiment usually counted for more than military competence in the pursuit of a field grade commission. In the junior ranks, many officers were chosen by election. Popularity, rather than experience or expertise, often decided who would become platoon leaders and company commanders.[9]

After the Civil War, the examination system was reinstituted. The exams were frequently revised, albeit not fundamentally changed. Usually, these revisions made the examination more rigorous, reflecting advances in technology, changes in missions, and the growing professionalization of the officer corps. For example, General Order No. 62, dated August 26, 1878, added logarithms, algebra, elements of trigonometry, and international law to the areas being evaluated. General Order No. 98, dated December 5, 1891, added general history, elements of surveying, and Army and drill regulations to the exam. Finally, in 1892, General Order No. 79, dated November 26, directed an exacting test that prescribed nine areas of evaluation for both the preliminary and final (or competitive) examinations. The academic subjects included on the test were: English, mathematics, geography, history, constitutional and international law, and Army regulations.[10] As can be inferred from the

description of the exams, only those candidates who had studied assiduously at college, or were so recently out of school as to retain a fresh memory of advanced mathematics, physics, etc., could pass the exam.[11]

As can be seen from the descriptions of these tests, they were quite difficult. They were intended more to exclude than to select. An average of seven enlisted Soldiers and nine candidates from civil life might have been selected annually, but there were stretches in the post-bellum period when the Army went several years without accessing a single person from either source into the officer corps. The Army wanted to obtain as large a percentage of its officers as it could from West Point. The other sources, during peacetime at least, were essentially a standard operating procedure to those observers and legislators who feared the creation of a military caste and to those members of the enlisted force who sought social mobility.

THE SPANISH-AMERICAN WAR

The standards and accessions patterns described in the preceding paragraphs were established during periods of peace. It must be kept in mind that most candidates from the enlisted ranks and civil life were commissioned into the Regular Army during hostilities, when the demand for officers was great and immediate. Of the 585 enlisted men and 697 candidates from civil life commissioned between 1885 and 1903, more than 80 percent were commissioned during the Spanish-American War and the Philippine Insurrection.[12]

Regulars comprised fewer than 20 percent of the commissioned officers who went to war in 1898. However, that 20 percent formed a group of highly capable military professionals. One observer commented:

> in terms of officer procurement policies and methods, it [the war] was a magnificent vindication of the doctrine of careful selection, rigid examination, and painstakingly thorough schooling over a long period of years.[13]

The problem came when the Army had to expand the officer corps to lead the swollen force that emerged after mobilization was declared.

Officer accessions standards were relaxed during the Spanish-American War to produce officers quickly and in the volume needed. As in the Civil War, governors were given great latitude in appointing officers in volunteer and militia units, opening the way for politically powerful individuals such as Theodore Roosevelt to obtain commissions. President McKinley, too, engaged in nepotism in the appointment of officers. He took care of his old Ohio friends and doled out military appointments to reward special interest groups and appease sectional interests and sensibilities. To consolidate support for his administration, he awarded states commissions based on their population and standing in national affairs. He was especially solicitous of southern Democrats since he wanted to ensure their support for the war. Election remained a common way to select junior officers. Many militia and volunteer units elected their lieutenants and captains. As late as 1901, the law in effect on officer appointments provided that "captains and lieutenants of companies [of militia] shall be elected by the written votes of the enlisted men of the respective companies"—a provision that did not disappear until World War I. Moreover, in some militia units, the practice of officer selection by voting was extended to the field grade ranks, where lieutenants and captains selected the majors who would run their units.[14]

The relaxation of standards was not limited to volunteer units, it extended to the Regular Army as well. An expanded Regular Army needed more officers. Over the course of the war, more than 800 regular commissions had to be awarded to fill unit vacancies. Men who would not have qualified for a commission in peacetime now gained access into the regular officer corps. Many volunteer and a number of militia officers were able to translate their commissions into Regular Army appointments. In selecting officers from the enlisted force and from civil life, certain adjustments had to be made. Secretary of War Root was very aware that many of the men competing for a commission had been away from school for some time and had forgotten a good deal of what they had learned. As a result, he issued the following order:

> in view of the long period during which volunteer officers recently serving in the Philippines have been without access to books with which they could prepare for examination, and the fact that a special test of fitness is furnished by each officer's military record, the Secretary of War directs that as to all such officers who are ordered to be examined for appointment to the Regular Army, and are physically qualified, the examining boards, instead of recommending appointment or rejection upon the mental examination alone, shall transmit the examination papers in each case to the War Department, with their marks or ratings, both specific and general, and with an expression of the board's estimate of the candidate's general intelligence and capacity. The question whether, upon such report and the military record taken together, the candidate's fitness has been established will then be determined by the appointing power.[15]

Regarding enlisted men who were competing for commissions, he wrote:

> In view of the fact that enlisted men who have been serving in the Philippines have also been without opportunities to prepare for examination, the Secretary of War directs that as to any of them who fail to pass the mental examination for promotion, if the examining board is of the opinion that the candidate has sufficient intelligence and capacity to readily fit himself for such an examination, and that he has failed through lack of opportunity for preparation, the board shall transmit the papers to the Department with their certificate to that effect; and thereupon, if the case seems to warrant such action, the candidate may have further examination after reasonable opportunity to prepare therefore.[16]

Root asserted that "it is believed that in the main we have secured a very excellent body of officers, who will do credit to the service" but, at the same time, conceded that mistakes had been made in the selection process.[17]

The officer corps was profoundly affected by the war. By 1902, West Point officers were in the minority. Secretary Root described the Army's situation in his annual report of 1902:

> Of the 2,900 officers of the line of the Army, 1,818 have been appointed since the beginning of the war with Spain. Of these . . . but 276 were supplied by the West Point Academy; the remaining 1,542 have come—414 from the ranks, 512 from civil life, and 616 from the volunteers. . . . The volunteers and the enlisted men have of course acquired useful experience. . . . Yet it is generally true [that] . . . more than one-half of all the officers of the line . . . have had no systematic military education. . . . Unless the theory of military education under which we have maintained the Academy at West Point for a century is all a mistake, it is very important to give to this class of young officers . . . the educational advantages which the West Point men get before they are commissioned.[18]

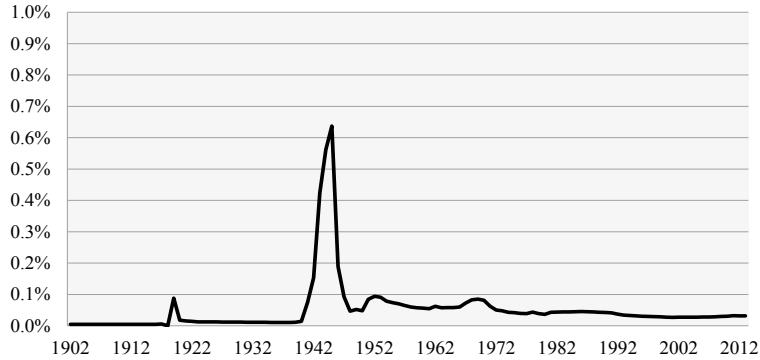
The USMA was also affected by the war, its educational program being abbreviated during the first 2 years of hostilities. For the class of 1898, this amounted to about 1 month. That class graduated near the end of April rather than in the 1st week of June in 1898. The class of 1899 lost the better part of a semester. Its graduation date was pushed up to February 15, 1899. It seems unlikely that the quality of the graduate was significantly affected by this shortening of the 4-year experience. However, the abbreviation of the 4-year course, as relatively minor as it was, set a precedent that was used more aggressively and more radically in World War I.[19]

BETWEEN THE SPANISH-AMERICAN WAR AND WORLD WAR I

After the Spanish-American War, the Army could once again be discriminating in its selection of officers, albeit less so than before the war. The Army that emerged from the war was bigger than the one that went into it, so it needed to access more officers to lead it. Although it was substantially larger than its pre-1898 predecessor was, the post-Spanish-American War Army was still small relative to the overall population. Between 1903 and 1914, the number of enlisted men ranged between 60,000 to 92,000, while Regular Army officer strength ranged between 3,300 and 4,000. The U.S. population grew from 80,000,000 to just under 100,000,000 during this same period.[20]

In Figure 2-1 we provide data on the U.S. Army officer corps relative to the size of the U.S. population. The size of the officer corps has varied significantly, while the size of the U.S. population has increased steadily over time. Notably, the fraction is consistently

very small. However, the current fraction (roughly 0.03 percent) is much higher than in 1902 (roughly 0.01 percent). Also of note, the fraction reached significantly higher levels in the 1910s (Word War I), the 1940s (World War II) and the 1950s-1970s. These fractions have direct implications for the Army's ability to be selective in its officer accessions.



This figure displays the share of the U.S. population in the officer corps by year. The data was obtained from USMA archives and publicly available data on the U.S. population.

Figure 2-1. U.S. Army Officer Corps as a Share of the U.S. Population.

During the period in question, the official priority of the commissioning sources was: first, the USMA; second, qualified enlisted men; third, honor graduates of "distinguished [military] institutions"; fourth, other graduates of military schools and colleges having Army officers detailed as professors of military science (MS) and tactics; and, fifth, all other civilian colleges and sources. All except West Point graduates were required to take the Army's competitive examination for a commission.[21]

The USMA accounted for the bulk of the annual commissions during this period. From 1903 to 1914, West Point's annual commissioning totals averaged about 100 per year; commissions from the enlisted ranks averaged slightly over 18 per year, while commissions from civil life averaged just over 54 per year. To give the reader an idea of what the Army looked like in terms of the commissioning mix of the officer corps, the following snapshot taken from the Secretary of War's annual report for 1909 is presented. Keep in mind that the totals reflect the many non-West Point officers who were accessed during the Spanish-American War:

> An examination of the records of commissioned officers in the Regular Army shows that 43.36 percent of the officers on the active list on October 15, 1909, were graduates from the United States Military Academy: that 12.97 percent were appointed from the army, and that 43.67 percent were appointed from civil life. Of the 43.67 percent appointed from civil life 21.38 percent had prior service in the army and 22.29 percent had no such prior service.[22]

The high proportion of non-West Point graduates in the officer corps—almost 56 percent were not West Point alumni—bothered Army officials. Many of the men commissioned during the war had been fine combat leaders but, because of their lack of formal education, did not excel as field grade officers—ranks where the ability to conceptualize and write clearly was at a premium. Thus, the Army was not entirely satisfied with the quality of the officer corps after the Spanish-American War and resolved to do something about it.[23]

WEST POINT

To raise overall officer quality in the Army, the War Department purposed to expand West Point and increase the number of commissions coming from the Corps of Cadets. In 1900, the maximum enrollment limit at the Academy was raised by more than 25 percent—from 381 to 523. The maximum limit was raised again in 1910, from 523 to 700. With the expansion of 1910, the Army aimed to at least double the proportion of Academy graduates in the officer corps; and if it could reach and sustain the 700-enrollment figure, Army leaders believed, this doubling would occur in time. In fact, the *Annual Report of the Superintendent* for 1914 declared that:

> With the regular Army limited in numbers as it now is and the Corps of Cadets up to the capacity of the Academy, more than all the vacancies for officers can be supplied from graduates of the Academy.[24]

Nevertheless, the anticipated growth did not occur, and the size of the Corps had to be raised once again in 1916, this time to 1,332 cadets. Despite these attempts to enlarge West Point, the pre-World War I Army never came close to filling the officer ranks primarily with West Point graduates as it intended.[25]

West Point in the late 19th and early 20th centuries complained about the method of nomination used by congressmen—the non-competitive method—to select their candidates to West Point. This method of nomination, many asserted, negatively affected officer quality. According to Betros:

> The non-competitive method, while popular in Congress, undermined the search for quality. Many congressmen used the nominations as a form of patronage and

> distributed them to the most influential candidates rather than the most deserving. Each one had his own method of selection, with criteria that did not necessarily accord with Academy priorities. The unfortunate results of this system were on display every year, as about half the nominees failed to pass the West Point entrance exam and returned home embarrassed and disappointed. Of those who managed to pass the exam and become cadets, about 50 percent subsequently flunked out.[26]

The expanded enrollment and increased officer requirements induced West Point to adjust its admissions requirements in 1900. Such an adjustment was believed necessary to make the admissions process more flexible and allow the Academy to reach its enrollment goals.[27] Because of the need for more Academy graduates, in 1900 West Point asked Congress to repeal the requirement for the Academy to screen its applicants by means of "fixed mental requirements," by which was meant the standard entrance examination. In its place, West Point wanted Congress to place entrance requirements under the control of the Secretary of War, who could adjust them at will to meet officer production goals.[28] Academy authorities did not get their way in 1900, but the next year Congress acceded to their desires. Legislation passed in 1901 granted the Secretary of War the authority to set admissions standards as he saw fit. The *Annual Report of the Superintendent*, 1901 heralded the legislation as marking a "signal change in the history of the Academy" and as a stepping stone to higher admissions standards.[29] West Point officials developed a new test to replace the old one in conjunction with William T. Harris, the U.S. Commissioner of Education. The new test was allegedly designed to bring the

admissions process in line with the latest educational developments.[30]

The next year (1902), the Academy adjusted admissions procedures again, making the admissions process even more flexible. West Point received permission from the Secretary of War to admit candidates by "certificates of mental preparedness." This amounted to reviewing the candidate's high school or college transcripts and admitting them based on the quality of the school attended, the grades attained, and the subjects taken. The official reason for this new policy was that it would:

> permit those candidates who at the time of appointment . . . have satisfactorily covered the subjects required for admission to continue their regular course of study and the proper gradual development of their minds instead of putting them in [a] position where they feel compelled to go back and review elementary work, with consequent expense, loss of time, and, as usually occurs, attendance at some coaching school, with resulting deadening of the reasoning faculties.[31]

Concern for the deadening effect of the tests may have influenced Academy authorities to change admissions procedures, but the prime reason behind the move was that too many candidates were failing the entrance examination, which the superintendent admitted in his 1900 report. To expand the Academy's output of officers, West Point needed a system that was less rigorous than the standard entrance examination that was used since the end of the Civil War. In short, if the Academy hoped to boost its output, it needed to lower admissions standards.[32]

The first candidates admitted by mental certificate entered the Corps of Cadets in the summer of 1902. Sixty-two cadets were admitted under this method. This amounted to about 53 percent of the entering class (62

out of 118). Of the 62 candidates who were accepted by mental certificate, somewhere between 52 and 98 percent had submitted college transcripts for review. We cannot be more precise because Academy authorities lumped high school and normal school transcripts together into one broad classification.[33] From 1903 to 1907, the number and percentage of cadets admitted by certificate increased. In those years, the percentage of the entering class admitted by this means ranged between 66 and 80 percent of each entering class.[34]

Things changed in 1908, when screening by mental certificate was dropped and applicants were no longer admitted using this method. All candidates were once again required to take the entrance examination. Superintendent Hugh L. Scott explained the reasons for the reintroduction of the entrance examination for all candidates in his annual report of 1907:

> The admission of candidates on certificates from local schools and colleges (frequently secured after brief and inadequate attendance) in lieu of the entrance examinations, after having been given an exhaustive test for six years, was, with the authority of the Secretary of War, discontinued this year, the class entering in 1907 having been made the last one to enter on certificates. The certificate system gave very unsatisfactory results and a great number of candidates admitted by this method were found to have been poorly grounded in the entrance requirements, which deficiency often resulted in a very laborious career at the Military Academy and not infrequently in ultimate failure to master the course. It was found that the classes would be much better grounded if reasonable and uniform entrance examinations were required.[35]

To be sure, authorities were still concerned about lagging enrollment and the large number of vacancies in the Corps of Cadets. Even so, they felt that the academic performance of candidates admitted under

the certificate system was so lackluster that a standard entrance exam had to be reinstated. Students were flunking out at a high rate and something had to be done to stop the bleeding. It did little good to accept more candidates if those candidates could not pass West Point's academic program.[36]

After the reinstatement of the entrance examination for every candidate, the problem of cadet vacancies did not go away. For a time, it got worse. The 1910 version of the entrance exam was quite rigorous and the Academy struggled to find enough candidates who could pass it (see Appendix A). The following table shows the scope of the vacancy problem. See Table 2-1.

Year (as of September 1)	**Authorized Number of Cadets**	**Unfilled Vacancies**
1904	522	42
1905	522	55
1906	522	51
1907	522	76
1908	533	117
1909	533	129
1910	533	122
*1911	629	57
1912	631	74
1913	640	80
1914	748	87
(*The law of 1910 became effective)		

Table 2-1. Cadet Vacancies, 1904-1914.[37]

The quality of entering candidates became an issue of serious concern to Academy authorities after their first experience with admission by mental certificate. The Academy took measures to correct the qualitative deficiencies they had noted in cadets. The most radical of those measures was to extend the 4-year curriculum by 3 months (inserting a period of academic instruction between March and July of the fourth class year) in order to improve the academic qualifications of new cadets. This was done every year from 1908 through 1911.[38]

In 1914, the Army's apprehension about vacancies, and the high percentage of non-graduates in the officer corps, again stirred Academy authorities to take extraordinary action. The authorized number of cadets had gone up since the passage of the law in 1910, expanding the Academy, and reducing the number of vacancies. However, the attrition rate of West Point officers once accessed into the Army had shot up sharply. The superintendent believed that Academy trained officers were leaving the service because "more lucrative pursuits and greater fields for promotion of private life are diverting young men from . . . careers of small pay and slow promotion in our country's service." This trend largely canceled out any gains made by increased enrollment and a lower vacancy rate. The Army's anxiety took on a new level of urgency at this time because of the outbreak of war in Europe.[39]

The *War Department Annual Report, 1913*, clearly reflected this new urgency. "This table [see Table 2-1 in this chapter]," the report commented:

> shows very clearly the necessity of some action to increase the number of admitted cadets so as to more nearly equal the number authorized, the capacity of the Academy and

> the needs of the Army. It has been the subject of urgent recommendation by my predecessors and bills have been introduced in Congress designed to remedy the condition, but so far nothing sufficiently effective has resulted.
>
> In the interest of the country, the Army, and economy to the Government, the maximum number of cadets that can be accommodated at the academy should be kept under instruction. The plant today can easily handle 700 cadets with very slight increase of cost over that now required for the 608 cadets in the corps. Only 44 percent of the active Army officers are graduates of the academy. This can be fully doubled in time if the academy is kept up to its capacity of 700 cadets.[40]

The 1914 report went on to note that the attrition rate at West Point had declined significantly over the last several decades. In the period 1892—1902, the attrition rate had been 50 percent. From 1903-1913, the attrition rate was only 30 percent. However, according to the report, this decline was not due to a dilution of academic rigor. Rather, it could be attributed to "more thorough requirements for entrance" (of which the report gave no evidence), to the "increasing prevalence of competitive examinations in selecting candidates [on the part of congressmen]," and to the "assistance now given by instructors outside of recitation hours." To observers familiar with the recent history of West Point, it was not a very convincing narrative.[41]

Nevertheless, to raise enrollment and officer output to the desired levels, West Point believed that it had to take drastic action. Accordingly, the Academy reintroduced the mental certificate as a path to admission in 1914. West Point was tired of the vacancies and worried about the quality of officer in the Army. Perhaps they reasoned that even if the Academy did lower standards and revert to the certificate method, the end

product would still be better than what they were getting from the other commissioning sources.

General Orders No. 3, issued by the War Department on January 23, 1914, laid out the mental certificate requirements. A candidate could be excused from the regular admission exam if he (1) presented a certificate from a university, college or technical school accredited by the USMA that demonstrated his proficiency in mathematics A1 (algebra to quadratics), A2 (algebra, quadratics and beyond), and C (plane geometry); English A (reading and practice), and B (study and practice), as outlined by the College Entrance Examination Board (CEEB); (2) presented a certificate of graduation from a preparatory school or public high school, which was on the accredited list of one of the institutions referred to in the general order mentioned above, provided that he was certified to have established proficiency in mathematics A1, A2, and C, and English A and B, as outlined by the CEEB; (3) presented a certificate from the CEEB that he has passed 14 units of its examinations, including mathematics A1, A2, and C, English A and B, and history A (ancient history) and D (American history and civil government).[42]

"[G]reat difficulty" arose in screening college and high school certificates. Many of the certificates submitted were not from schools accredited by the Academy. Many others contained incomplete or inaccurate information. Some were illegible. West Point called upon the National Board of Education to sort through the mess. A new general order was issued the following year, which more precisely laid out admissions requirements and the list of accredited schools.[43]

From 1914 until America's entry into the Great War, the Corps of Cadets continued to expand. As

previously alluded to, a law passed on May 4, 1916, increased the number of cadetships to 1,332. This law provided that the enrollment increase be spread over 4 years, thus admitting one-fourth of the increase each year. Congress authorized the expansion of West Point approximately a month before it passed the National Defense Act (NDA) of 1916. This latter piece of legislation created the Reserve Officers' Training Corps (ROTC), which was originally conceived as a source of reserve officers that could be tapped in case of mobilization. Both the dicey situation along the Mexican border and the outbreak of the First World War in Europe conditioned the environment in which the bills (1916) expanding the USMA and creating the ROTC were passed.[44]

Considered more broadly, however, the two bills along with the expansions that occurred in 1900 and 1910, aimed at transforming the Army from a frontier constabulary force to an expeditionary one. The constabulary frontier force of the latter part of the 19th century was small, provincial, and focused on policing and internal development. The creation of an expeditionary army—or an Army for Empire as some historians call it—was suggested by the War Department's recent war against Spain and the Russo-Japanese War of 1905. It was predicated on the belief that the nation's rise to world power status inevitably entailed an army capable of projecting U.S. power across the globe. That required not only a larger force, but a more professional and mentally astute officer corps—an officer corps capable of understanding the elements of national power and of efficiently and effectively using military force to accomplish national objectives.[45]

The reintroduction of admission by mental certificate still did not solve the Academy's vacancy

problem. Vacancies totaled 79 in 1915, 103 in 1916, and 102 in 1917. The percentage of cadets admitted by certificate generally declined after 1914, however. Two-thirds of the new admissions in 1915 (121 out of 182) were by mental certificate; this fell to 54 percent in 1916 (131 out of 243), and to 48 percent (173 out of 357) in 1917. The Academy would have preferred to have everyone qualify by examination. Moreover, Academy superintendents from 1914 through 1917 recommended that West Point return to this former method of admissions. However, it was feared that a move would have reduced the number admitted too drastically and was consequently not considered a practical option.[46]

Looking at the period between the Spanish-American War and the First World War in its entirety, admissions screening procedures remained rigorous; not quite as rigorous, perhaps, as those in place before the Spanish-American War, but rigorous nonetheless. Criterion-referenced examinations regulated entry into the Academy every year except the periods of 1904-1907 and 1914-1917. Over an 18-year period, admission by certificate was allowed in only 7 years, or about 39 percent of the time. Moreover, in 3 of those 7 years, about half the entering class took the standard entrance exam. The percentage of cadets with prior college experience remained very high throughout this era, ranging between 35 and 50 percent of the Corps, and those percentages did not include cadets who attended normal schools. The percentage of cadets who had post-secondary experience amazed observers in the 1950s.[47]

CRITERION-REFERENCED VERSUS NORM-REFERENCED TESTS

Tests, to the degree they are valid, assist people in ascertaining what others know and in making selection decisions. While all tests obviously have right and wrong answers, scoring procedures, and purposes for being administered, they generally can be distinguished in terms of how they are scored: norm-referenced or criterion-referenced.[48] A norm-referenced test, such as the SAT (formerly known as the Scholastic Aptitude Test, then the Scholastic Assessment Test), compares the score of the test-taker with the scores of other immediate test takers or with the scores of an older reference group.[49] The purpose is comparison and ranking and, as such, places a strong emphasis on discriminating between high and low performers.[50] California, for example, guarantees admission to the University of California system (but not to a particular site such as the University of California, Los Angeles, University of California, Berkeley, or University of California, San Diego) if a California high school student graduates in the top 9 percent of his or her class. There is not a minimum grade point average (GPA) requirement or a particular score on an Advanced Placement exam necessary for admission. Class rank is dependent not only on hard work in class but also on the "luck" associated with being part of a particularly bright or dull graduating class. This exemplifies norm-referenced selection.

A test that utilizes this logic is the SAT. Regardless of the particular number of items answered correctly, distributions of scores at a given administration are compared to the norming group. This is the essence of norm-referencing: one's score is a function not only of performance but also of comparison with other people. At its heart, then, norm-referenced tests are best for selection rather than for determinations of competence.[51]

The criterion-referenced test is more likely what one thinks about when one thinks of tests. Though both ancient and familiar, Robert Glaser first used the term in reference to military and industrial training.[52] With criterion-referenced tests, one is interested in determining what a test taker knows, not how he or she compares to other people; there is still a comparison, only here the test taker's score is compared to standards (or, criteria) rather than to other people's scores. To be effective, criterion-referenced tests must of course be designed well. This is not necessarily easily done; in fact, it is a recognized limitation as it is easier to simply to rank order people along a continuum on a subject than it is to determine just how well someone has mastered a particular subject.[53] The entrance exams and the CEEB Achievement Tests used for admission to USMA in the early 20th century are examples of criterion-referenced tests. Other examples would include the written portion of a state's driver license exam or a certification exam for medical licensure.

Screening by certificate, albeit less rigorous than the old admissions test, was not a sham. The certificate method had built-in safeguards that ensured the admissions process remained very competitive. First, the Academy would (after an initial period of confusion) only accept certificates from those institutions that its Academic Board had accredited. This requirement narrowed the selection field considerably. Second, the list of courses that a man had to have satisfactorily completed was rather extensive. It encompassed math, science, foreign languages, English, history, and geography. Third, the standards that the Academy elaborated to assess the intellectual attainment levels of applicants were rigorously applied. If admissions officers doubted the capacity of an applicant to complete West Point's rather rigorous academic program, he was rejected.[54]

Sometimes, an examination of those men who were rejected for admission can tell us as much about the school as an examination of those who were accepted. A list of the schools at which **unsuccessful** applicants for the Class of 1921 (who, if accepted, would have entered the Academy in the summer of 1917) matriculated before applying to West Point includes: Harvard, Yale, Cornell, Princeton, Vanderbilt, Clemson, Syracuse, Dartmouth, Holy Cross, Trinity (later Duke University), Wisconsin, Michigan, Penn, Brown, Rice, Tulane, Massachusetts Institute of Technology, Georgetown, Brigham Young University Spring Hill, Gonzaga, Amherst, Colgate, Kansas, Indiana, Georgia, George Washington, Columbia, Virginia Military Institute, Norwich, Virginia Polytechnic Institute and State University, Missouri, Iowa State, Texas, Penn State, Union College, Mount Union, Mercer, Loyola, Bucknell, Wofford, Iowa Wesleyan, Lafayette,

Marquette, Swarthmore, Davidson, Williams, Mississippi, Stevens Institute of Technology, City College of New York, Cincinnati, Florida, Colorado, University of California-Berkeley, Kentucky, Minnesota, South Carolina, Arkansas, Vermont, Idaho, Tennessee, New Mexico, Utah, Oklahoma, Washington, Oregon, Nebraska, Miami of Ohio, Alabama, The Citadel, Pittsburg, Carnegie Institute of Technology, Vermont, St. John's, and Illinois. Applicants from the aforementioned institutions, some of whom had spent 3 years as undergraduates, presented their certificates or transcripts to the Academy's Academic Board and were found wanting.[55]

Also pertinent to our study is the relatively high socioeconomic status (SES) level of the families from which cadets came during this era. The Corps of Cadets before World War I had a distinctly upper middle-class flavor. Cadets whose fathers worked in one of the professions formed the plurality of the Corps. Those whose fathers came from the managerial class were also well represented. Cadets from families who fell into the lower ranges of the SES spectrum, on the other hand, were in short supply. For example, cadets with prior military service, cadets whose fathers came from the enlisted ranks, and cadets whose fathers were skilled or unskilled workers made up a very small minority of the Corps of Cadets—indeed, less than 1 percent in all of these categories in the decade and a half before America's entry into the First World War. That is unlike today's Corps of Cadets, which has a middle to lower middle-class hue. Since academic achievement levels and success on tests is closely correlated with SES, our brief look at the occupations of cadet fathers is instructive for the present study.[56]

CANDIDATES FROM CIVIL LIFE AND THE ENLISTED FORCE

Mental screening for officer candidates from civil life and the enlisted force remained quite rigorous in the period between the Spanish-American War and World War I. In fact, because these exams screened candidates about to be accessed into the officer corps rather than cadets who still had 4 years of education in front of them, they were more rigorous than the West Point exams. The number of officers needed annually from these 2 sources was small, averaging only 18 from the enlisted force and 54 from civil life. Hence, the Army could remain quite discriminating in whom it allowed into the officer corps from these sources.

After being suspended during the Spanish-American War, the testing of enlisted and civil officer candidates resumed in 1902 with the publication of General Order No. 17, dated February 15. It took up essentially where General Order No. 79 (November 26, 1892) had left off. English grammar, mathematics, geography, history, constitutional and international law, and Army regulations were all covered on the exam. More subjects were added to the exam in 1906. General Order No. 93 (May 17, 1906) augmented the commissioning exam with algebra through quadratic equations, plane and solid geometry, plane and spherical trigonometry, and elements of surveying. Even candidates who had graduated from a good college or university undoubtedly found the test quite challenging.[57]

A new rigor in officer screening for candidates from civil life and the enlisted force, inspired in part by the Army's heightened concern with the number of non-West Point graduates in the officer corps, became evident in 1910. In that year (the same year that a law

was passed expanding enrollment at West Point), the Army launched an effort to upgrade exams for men seeking a commission from outside the Academy. The effort was intended more to screen out marginal candidates than bring in a large number of new officers.[58]

The effort began when the Army's General Staff inaugurated a study of the entire range of examinations required for appointment as a second lieutenant. During the course of the study, frequent exchanges of correspondence occurred involving the Academic Board of the USMA, the Carnegie Foundation, the General Education Board of the Rockefeller Fund, and the Department of the Interior concerning scholastic standards and ratings of civilian institutions. The subcommittee wanted to draw its candidates from the nation's more selective universities. As a result, authorities revised the examinations with the intention of elevating commissioning standards and making the tests more uniform for all arms and services. The subcommittee's work was embodied in the War Department's General Order No. 58, dated April 28, 1911.[59]

Another upgrade to the exam was made shortly thereafter. The changes were outlined in War Department General Order No. 131, dated September 26, 1911. This order added the following subjects to the final examination: French, German, or Spanish (one of these languages), spherical trigonometry, differential calculus, integral calculus, analytical geometry, or a thorough knowledge of any foreign language or military field engineering.[60]

The difficulty of the examinations were varied by branch. The tests for the line branches—cavalry, infantry, and field artillery—were quite stringent. In 1911, for example, the preliminary tests for candidates from civil life seeking commissions in the combat arms

encompassed the following subjects: [1] English grammar and orthography; [2] mathematics, to include algebra, plane and solid geometry, and trigonometry; and [3] geography and history. The final examination covered advanced subjects such as foreign languages, calculus, and international law.[61]

Examinations for the technical branches, such as the engineers, signal corps, and coast artillery were more difficult than those for the combat arms. They encompassed foreign languages, constitutional and international law, general history, physics (including electricity, magnetism, heat, sound, and light), chemistry, geology, mineralogy, surveying (geodetic, hydrographic, and topographic), descriptive geometry, theoretical and applied mechanics, and a range of engineering subjects. The successful candidate would have had to have a very solid education, indeed, to pass the test.[62] Portions of the engineer exam for 1914 are provided in Appendix B.

The next version of the exam came out in the fall of 1915. General Order No. 64, dated November 16, 1915, outlined the test. Its description read like a college catalogue. Advanced English, advanced French, advanced German, advanced Spanish, and advanced surveying were added to the testing requirements. By making the test more difficult, the Army hoped to ensure that only men from the nation's better universities—or at least, men of that caliber—would gain acceptance into the officer corps.[63]

An interesting development in officer accessions occurred shortly after the Spanish-American War, when the Army introduced a program to facilitate the entry of enlisted men into the officer corps. It was not a large program but it had some success. It allowed men to enlist in the Regular Army for 2 years, at the

end of which time they would take the entrance examination and compete for a commission in the Regular Army. They could compete only for vacancies existing after the West Point classes had been commissioned.[64] General Courtney Hodges received his commission through this program. After being dismissed from West Point because he failed mathematics, Hodges enlisted in the Army in 1906 and received his commission 3 years later, after doing well on the competitive entrance examination. Hodges would go on and command the First Army in Europe in World War II.[65]

This experiment in opening up West Point to enlisted men reflected a congressional push to temper the elitist character of the USMA and its student body. Many legislators believed that West Point should be more representative of the society that it was charged to defend. In the 2nd decade of the 20th century, this entailed attracting more cadets from the middle and lower ranges of the socioeconomic spectrum.

CONCLUSION

The need for officers in the post-bellum era was small relative to the size of the U.S. population. This enabled the Army to employ exacting mental tests to screen officer candidates and be quite selective in who it commissioned. The rigor and selectivity of the Army's vetting procedures declined to a certain extent after the turn of the century as the officer corps expanded more quickly than the nation's population. The Army experimented with less rigorous admissions procedures at West Point as its need for officers grew.

Although the rigor of the mental tests and the selectivity of the Army's commissioning sources

generally declined between 1900 and 1917, this rigor and selectivity remained at fairly high levels, especially when compared to later eras. A surprising proportion of cadets, somewhere between 50 and 80 percent, attended post-secondary educational institutions before applying to West Point. Moreover, the SES of West Point cadets remained high, with the majority of cadets coming from upper middle-class families. Information about the SES of cadets is relevant to this study because SES has a strong positive correlation with high test scores and high levels of academic performance.[66]

ENDNOTES - CHAPTER 2

1. Mental screening tests for enlisted candidates and candidates from civil life were first used in 1854.

2. John J. Lenney, *Rankers: The Odyssey of the Enlisted Regular Soldier or America and Britain*, New York: Greenberg Publisher, 1950, p. 110.

3. U.S. Military Academy (USMA), *Annual Report of the Superintendent of the United States Military Academy*, Washington, DC: U.S. Government Printing Office, 1900, p. 21. Hereafter, all years reports referred to as the USMA, *Annual Report of the Superintendent* along with their corresponding year.

4. Lance Betros, *Carved from Granite: West Point since 1902*, College Station, TX: Texas A&M University Press, 2012, p. 79.

5. See R. Eric Petersen and Sarah J. Eckman, *Congressional Nominations to U.S. Service Academies: An Overview and Resources for Outreach and Management*, Washington, DC: Congressional Research Service, 2016, pp. 1-2.

6. Betros, p. 80.

7. USMA, *Annual Report of the Superintendent*, 1901, p. 49.

8. USMA, *The Howitzer*, West Point, NY: Corps of Cadets, U.S. Military Academy, 1900, p. 17.

9. Lenney, p. 110.

10. Ibid., p. 112.

11. L. P. D. Warren, *A History of Officer Procurement and the Development of the Officer Corps*, Washington, DC: Center of Military History, U.S. Army, March 1948, p. 153.

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15. USMA, *Annual Report of the Superintendent*, 1901, p. 27.

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18. U.S. War Department, *Annual Report of the Secretary of War for the Year 1902*, Washington, DC: U.S. Government Printing Office, 1902, p. 30, available from *https://babel.hathitrust.org/cgi/pt?id=uc1.31158006905318;view=1up;seq=13*, accessed September 29, 2017.

19. USMA, *Annual Report of the Superintendent*, 1900, p. 3.

20. J. N. Kish, "U.S. Population 1776 to Present," Google Fusion Tables, available from *https://fusiontables.google.com/DataSource?dsrcid=225439#rows:id=1,* accessed December 5, 2017.

21. USMA, *Annual Report of the Superintendent*, 1913, p. 15.

22. U.S. War Department, *Annual Report of the Secretary of War for the Year 1909*, Washington, DC: U.S. Government Printing Office, 1909, p. 10.

23. Ibid.

24. USMA, *Annual Report of the Superintendent*, 1914, p. 9.

25. USMA, *Annual Report of the Superintendent*, 1916, p. 6; Hayes, p. 96. Elihu Root was convinced of the necessity of expanding West Point to fill the officer corps of the Regular Army.

26. Betros, p. 79.

27. USMA, *Annual Report of the Superintendent*, 1900, p. 7.

28. Ibid.

29. USMA, *Annual Report of the Superintendent*, 1901, p. 8.

30. Ibid.

31. USMA, *Annual Report of the Superintendent*, 1902, p. 8.

32. USMA, *Annual Report of the Superintendent*, 1900, p. 7; See also USMA, *Superintendent's Curriculum Study: Report of the Working Committee on the Historical Aspects of the Curriculum for the Period 1802-1945*, West Point, NY: U.S. Military Academy, 1958, p. 63.

33. USMA, *Annual Report of the Superintendent*, 1900, p. 9.

34. USMA, *Annual Report of the Superintendent*, 1903–1907.

35. USMA, *Annual Report of the Superintendent*, 1907, p. 20.

36. USMA, *Annual Report of the Superintendent*, 1908, p. 5. The Academy also blamed the dearth of suitable candidates in part on the congressional appointing authorities, who reportedly did not exercise much selectivity when making appointments.

37. USMA, *Annual Report of the Superintendent*, 1914, p. 8.

38. USMA, *Superintendent's Curriculum Study*, pp. 73-74.

39. U.S. War Department, *War Department, U.S.A. Annual Reports, 1907*, Vol. IV, Washington, DC: U.S. Government Printing Office, 1907, p. 213.

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41. Ibid., pp. 130-131.

42. USMA, *Annual Report of the Superintendent*, 1914, p. 10.

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52. Robert Glaser, "Instructional Technology and the Measurement of Learning Outcomes: Some Questions," *American Psychologist*, Vol. 18, No. 8, 1963, pp. 519-521; Robert Glaser and

David J. Klaus, "Proficiency Measurement: Assessing Human Performance," in Robert M. Gagné, ed., *Psychological Principles in Systems Development*, New York: Holt, Rinehart and Winston, 1962; Anthony J. Nitko, "Distinguishing the Many Varieties of Criterion-referenced Tests," *Review of Educational Research*, Vol. 50, Iss. 3, 1980, pp. 461-485.

53. Robert L. Ebel, "Criterion-Referenced Measurements: Limitations," *The School Review*, Vol. 79, Iss. 2, 1971, pp. 282-288; Ronald A. Berk, "A Consumer's Guide to Setting Performance Standards on Criterion-Referenced Tests," *Review of Educational Research*, Vol. 56, Iss. 1, 1986, pp. 137-172.

54. USMA, *Superintendent's Curriculum Study*, p. 57.

55. USMA, "Academic Board Proceedings," 1917, pp. 40-46, 56-66, 76-78, 86-87, 98, 184, 190-192, 199-205; USMA, "Staff Records," USMA Archives, No. 29, 1917.

56. USMA, *Superintendent's Curriculum Study*, p. 79.

57. Warren, p. 168; Lenney, p. 113.

58. Lenney, p. 143.

59. Warren, p. 161. It was the Subcommittee on Education of the General Staff's Committee on Military Information that actually conducted the study of officer examinations.

60. Ibid. In September 1911, the Chief of Engineers weighed in on the screening procedures for admittance into his branch by submitting to the Chief of Staff proposals for changing the examinations of civilian candidates for commissions and recommending that appointments in the corps of engineers be for a probationary period of 2 years. This recommendation was approved. The qualifications and examinations of candidates along with their moral, ethical, and educational fitness were the subjects of constant exchanges of views and opinions by general staff corps officers. A board of officers convened at Fort Leavenworth to review the examination papers of the civilian and enlisted candidates for commissions in 1913, recommended that all appointments from the Army and from civil life be for a probationary period of 1 year, and that all examinations be revised and standardized. The

probationary scheme was already being tried out in the Corps of Engineers, but had not been employed long enough to test its effectiveness. The Chief of Staff referred this report to the Chief of the War College Division of the General Staff who commented: "A majority of the War College Division believe that a probationary period for candidates from the Army and from civil life (for commissions) should be made part of the law."

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63. Paul Sackett, Nathan Kuncel, Justin Arneson, Sara Cooper, and Shonna Waters (2009) studied the relationships among socioeconomic status (SES), the SAT (formerly known as the Scholastic Aptitude Test, then the Scholastic Assessment Test), and grade point average (GPA) in college freshmen in 41 colleges and universities. The correlation between SES and SAT was 0.42. A correlation this size is considered medium-to-large in size or effect; translated, such a correlation is noticeable or apparent though not necessarily dominant. The researchers also found, however, that while the correlation between SAT and freshman GPA was 0.47, the correlation was only reduced to 0.44 when controlling for SES. In other words, controlling for SES has almost no effect on the predictive validity of SAT regarding freshman GPA. A reasonable interpretation of these findings is that SES correlates with academic performance because it is a proxy for greater academic aptitude. While high SES might support or even produce high aptitude and levels of academic achievement, it is more likely that high aptitude produces both high levels of academic achievement and SES. Put another way, one is not bright because one is upper middle class; rather, one is upper middle class because one is bright. Paul R. Sackett, Nathan R. Kuncel, Justin J. Arneson, Sara R. Cooper, and Shonna D. Waters, *Socioeconomic Status and the Relationship Between the SAT® and Freshman GPA: An Analysis of Data From 41 Colleges and Universities*, New York, NY: The College Board, 2009.

64. William A. Ganoe, *The History of the United States Army,* New York: D. Appleton-Century Company, 1943, p. 438.

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CHAPTER 3:
OFFICER SELECTION DURING WORLD WAR I

America's entry into World War I necessitated a drastic change in officer selection procedures. At the beginning of the nation's involvement in the war, the War Department projected it would need 80 American divisions and almost 5 million men to fight the war in Europe. These projections were subsequently whittled down, but the requirements remained prodigious. Consequently, the Army expanded from 190,000 Soldiers in the spring of 1917, to almost 3,760,000 Soldiers by late fall of 1918. Approximately 2,086,000 of the 3.76 million Soldiers reached France.[1]

In a force of this size, the Army could not be as discriminating in selecting its officers as it had been before the war. Several million Soldiers had to be raised, trained, and shipped overseas quickly to prevent the collapse of the Allied forces. However, this posed huge mobilization problems for the War Department—which administered a force that was not too far removed from its frontier, constabulary days, when it was more of a police agency than a bone fide army in the European sense.

Providing officers for this force was a daunting task. In 1915, the U.S. Army had approximately 4,200 regular officers in its ranks. By the end of 1918, this number increased 44-fold to about 188,000 officers.[2] The population of the United States during this era was roughly 100,000,000. Thus, the officer to civilian ratio stood at about 1:24,000 in 1915 and at 1:532 in November 1918. Under these circumstances, the War Department had no other realistic option but to sacrifice quality for quantity. This necessarily involved the dilution of officer testing standards.

OFFICER TRAINING SCHOOLS (OTS)

The declaration of war with Germany came on April 6, 1917. Immediately thereafter, the War Department had to come up with a system for providing officers for the National Army. The scheme it devised represented a sharp break with tradition. In the build-up for World War I, there would be no elections and no political appointments, as had occurred in every previous major conflict in the nation's history. Under the old system of appointing line officers for volunteer units and the militia, commissions were granted without reference to training or even physical qualification. Often, appointments were made as a matter of nepotism, political influence, or the ability to enlist men and form volunteer units. These practices largely disappeared when the nation began its mobilization in 1917. Although political influence continued to play some role in officer selection in the National Guard, it was much less prevalent than it had been during the Spanish-American War.[3]

The Army turned to Officer Training Schools (OTS)—the forerunners of the modern Officer Candidate School (OCS)—to produce its line officers. Every line officer received a commission only after he had passed such a course. The training camps were intended to eliminate personal or political influence from the officer selection process. When war was declared by Congress, plans had already been made to hold a series of 3-month camps of instruction, modeled after the successful "Plattsburg" camps of the preceding 3 years. The OTS held during the war's first months were largely adaptations of the Plattsburg model to wartime conditions. In fact, the Military Training Camps Association (MTCA), the

organization that had administered the Plattsburg Camps, lent the War Department its personnel and administrative apparatus for the OTS program. The Army had no other practical choice. It lacked a training infrastructure capable of turning out the volume of officers needed. It took a number of months after the Declaration of War before the War Department could place its imprimatur on these OTS and regain control of the officer training process from the MTCA.[4]

Upon graduation from one of these camps, successful candidates were nominated by camp commanders for an appointment and were given a rank dependent on what their performance at camp merited. Most were commissioned as second lieutenants but, in the first and second series of camps held in the spring and summer of 1917, appointments as majors and captains were numerous. A few exceptionally qualified graduates were even commissioned as colonels.[5]

The training in these schools was not uniformly good; even if it had been, it was clearly not possible to produce well-trained officers in a mere 90 days. In the main, the camps were mechanisms for observation and selection rather than for training. While it was recognized that first-class officers could not be turned out in such short training courses, it was also realized that, with the country at war, this was the maximum amount of time that could be devoted to officer training. Altogether, camps for line officers in the United States produced about 100,000 officers in the 19 months that the nation was involved in the war. A certain number of line officers chosen from the ranks were also trained and commissioned at officers' schools in France.[6]

The first series of camps, 16 in all, were opened in various parts of the country on May 1, 1917. In the

20 days that elapsed between the Declaration of War and the opening of the camps (between April 18 and May 8), the Army (with the help of the MTCA) had to secure some 40,000 suitable officer candidates and run them through moral, mental, and physical screening. For these first camps, this screening process involved making every applicant appear personally before an Army recruiting officer for examination.[7]

A shortage of recruiting officers complicated the Army's task. Some of the larger states had only one or two officers for the entire state. The best that could be done in many instances was to briefly question an applicant as to his education and previous experience, glance hurriedly at his letters of recommendation, and make a snap recommendation as to his fitness. The recruiting officers' recommendations for this first series of camps were, however, only tentative; the camp commander made the final selection. These commanders were overwhelmed with the number of candidates they had to vet, but they managed to accomplish at least a modicum of follow-on screening. Many mistakes were made. In the end, some 150,000 candidates passed the preliminary tests to attend this first series of camps; 43,000 were selected to take the course; and 27,341 graduated. Of these graduates, 2 colonels, 1 lieutenant colonel, 235 majors, 3,722 captains, 4,452 first lieutenants, and 18,929 second lieutenants were commissioned. With the experience of the first series of camps in mind, the Army refined its rules for the selection and appointment of candidates. It incorporated these refinements into the second series of Officers' Training Camps, which were conducted from August 27, 1917 to November 27, 1917. Out of the 72,914 men who volunteered for these camps, 21,000

attended and 17,237 received commissions; 59 were commissioned as majors.[8]

After this second series of camps, the War Department announced its intention to fill vacancies in the commissioned grades primarily from the enlisted ranks. In the first and second series of camps, large numbers of college graduates were in attendance.[9] Graduates from America's most prestigious civilian universities were well represented; indeed, some critics complained that the camps had an elitist tinge. Moreover, there is some evidence to support this complaint.[10] The Army's abrupt shift in policy that essentially limited enrollment in officer camps to enlisted candidates upset many observers—to include many MTCA members. They were concerned about the effect such a policy would have on officer quality.[11]

The War Department took this step—i.e., giving preference to enlisted men in OTS—for several reasons. First, it seemed the democratic thing to do. In a republic such as the United States, it was essential that every inductee should have an opportunity to become an officer, and that officers should be selected for reasons of merit alone. Second, reserving most line commissions for enlisted Soldiers would be a powerful incentive to the rank and file, as well as a huge boost to their morale. Such an incentive would be a deterrent to dysfunctional behavior, such as desertion, absent without official leave (AWOL), misconduct, and indiscipline. Third, limiting OTS attendance to the enlisted ranks would help prevent nepotism and political patronage in the selection of officers—the bane of wartime officer accessions since the Revolution. Finally, and probably most importantly, reserving line commissions for the enlisted ranks would help the nation more rationally manage its manpower. Some

of the men who earned commissions in the first series of camps would probably have been more valuable to the nation as managers, scientists, or engineers in some war industry than they were as lieutenants in the Infantry or Field Artillery. In an industrialized war of the type then being waged in Europe, it was essential that the nation utilize its manpower fully and distribute its human talent efficiently. Otherwise, the United States would forfeit a considerable military advantage. Although camp attendance was again opened up to civilians in the fall of 1918 (primarily because some of the more technical branches were suffering from a dearth of qualified candidates), it was done too late to affect the fighting in France.[12]

The third series of Officers' Training Camps were in operation from January 5 to April 19, 1918. Most attendees (approximately 90 percent) were enlisted, which included experienced veterans from the Regular Army and new inductees from the National Army. Exceptions to this general rule were made for a relatively small number from colleges that had a military science (MS)/ Reserve Officers' Training Corps (ROTC) program and for a limited number of civilians who were of draft age and had previous military training.[13] All graduates of this third series of camps were commissioned as second lieutenants. With the third series of camps, the War Department abandoned the former campsites and transferred officer training to separate schools in each division.[14] Some critics insisted that collocating officer camps with divisional cantonments was a bad idea. Divisional camps were, they asserted, primarily schools for the Soldier and the officers' camps would "necessarily become a mere side adjunct" to their enlisted counterparts. Moreover, officer training and selection had relatively little in common with enlisted training and therefore needed

to be conducted in its own dedicated area away from the atmosphere and ethos of a division.[15]

In June 1918, a fourth series of OTS started in 24 National Army and National Guard divisions in the United States as an integral part of those divisions. Soon thereafter, Army leaders came to the conclusion that the divisional camps were not producing officers of the requisite quality. Consequently, these divisional camps were abruptly abandoned. The War Department decided to consolidate the training of officers in a few large camps—the Central OTS. The new centralized arrangements took effect in June and July 1918.[16]

The Central OTS were held at permanent replacement camps. The Infantry had 5 such schools: Camp Pike, Arkansas; Camp Lee, Virginia; Camp Grant, Illinois; Camp MacArthur, Texas; and Camp Gordon, Georgia. Each of these schools had a 4-month course with a capacity of 5,600 students, a monthly intake of 1,400, and a monthly output of 1,000 graduates. From these Infantry schools, 9,370 officers actually graduated before the armistice. The Engineers had a school at Camp Humphreys, Virginia, and the Cavalry at Leon Springs, Texas. The largest of these central schools was the Field Artillery School at Camp Taylor, Kentucky, which had an intake of 5,000 men monthly. An OTS was held for African American men at Fort Des Moines, Iowa, from June 18 to October 18, 1917. Out of 1,250 students that passed through the Des Moines camp, 639 earned commissions.[17]

The policy of drawing officers principally from the enlisted ranks had its drawbacks. For one thing, the draft was not supplying suitable officer material in the necessary quantities. While conscription theoretically drew from all classes, by the time the third series of OTS were in operation, most college men and the

majority of those with the highest mental abilities had already entered the service through voluntary enlistment in the first series of Officers' Training Camps, or had obtained commissions on the Army Staff or in the Navy and Marine Corps. The officer material supplied from the enlisted ranks of the Army thus left much to be desired.[18]

Within the War Department, there were complaints that the men who graduated from the Divisional OTS and the centralized camps were, as a group, unsatisfactory. Candidates who attended these officer schools were generally not well educated. The elimination of civilian candidates, many were convinced, was responsible for this dearth of quality. In its quest for efficiency, the Army had robbed the combat branches of intellectual talent.[19]

Some line branches had more problems than others in finding suitable officer material. The spring of 1918 found the Field Artillery Corps short of the officers necessary to meet their needs. Field Artillery work, involving higher mathematics and technical equipment, demanded a greater degree of special training and education than did Infantry work. Candidates had to possess a working knowledge of arithmetic, algebra (to include quadratic equations), and plane geometry. A knowledge of trigonometry and the use of logarithms were highly desirable. Those having had an advanced scientific and technical education were the most sought after, particularly those educated as civil, mechanical, electrical, mining, or architectural engineers. After the first several months of the war, they were in very short supply.[20]

The Coast Artillery also encountered significant problems in finding suitable officer material. The Big Gun Corps, as the Coast Artillery was sometimes

referred to, had much the same difficulty as the Field Artillery. Its requirements for officers were even more stringent than those for the Field Artillery, since officer candidates in that branch had to pass examinations in logarithms and trigonometry in addition to algebra and plane geometry. Owing to the unfortunate name "Coast Artillery," it was little appreciated that 90 percent of the members of this Coast Artillery Corps were destined for active service overseas in handling the big guns, mortars, and anti-aircraft guns on the battlefields of France. To solve these problems, the Army took two steps. First, it significantly enlarged the capacity of the Coast Artillery OTS at Fort Monroe, Virginia. Second, it made direct appeals to colleges to procure graduating seniors for the branch. By this method, it hoped to get older recruits with the right kind of skills and education. However, things did not go as planned, and the Coast Artillery suffered from a deficit of adequate officer leadership throughout the war.[21]

Even the Infantry had problems attracting qualified officers. While the educational requirements for an Infantry officer were not as high as for the Artillery and Engineers, the Infantry faced intense competition from other branches for the best officer candidates. Generally speaking, the most qualified candidates preferred the more refined and safer environment of the technical branches to the more rugged and dangerous working conditions of the Infantry. The ROTC program was supposed to be a source of officers for the Infantry. However, the Infantry only obtained a limited number of candidates from that source. Many ROTC units were short-staffed and overburdened during the war and their professors of MS and tactics, the officers in charge of these units, could not devote very much time to soliciting recruits for the Infantry

branch. The end result was the pipeline from ROTC units to OTS was severely constricted.[22]

Despite these difficulties in finding suitable officer candidates, the Army continued to exclude civilian candidates from the Officers' Training Camps until the summer of 1918. It took that long for the realization to sink into the collective consciousness of the War Department that the Army's rank and file could not furnish the requisite number of officer candidates with the appropriate knowledge and skills to be officers and that the continued disqualification of civilians was depriving the Army of much desirable officer material. This first became apparent in the Field Artillery and the Coast Artillery, but all branches eventually came to feel the pinch. With the organization of the great central Field Artillery School at Camp Taylor early in the summer of 1918, the bars were finally let down and civilians were once again permitted to compete for a commission. Soon afterwards, the Infantry camps were also thrown open to civilians. This change in policy occurred too late to affect operations in France to any appreciable degree, however. It is doubtful that any of the civilian candidates commissioning in the summer of 1918 reached Europe in time to take part in the last allied offensives.[23]

SELECTION PROCEDURES FOR FIRST AND SECOND SERIES OF OFFICER TRAINING SCHOOLS

The selection of candidates for the first series of OTS was based on four elements: a physical examination, the candidate's application blank, letters of recommendation, and a personal interview with selection authorities. Since candidates came into these camps directly from civilian life and many of these men had college degrees, the intelligence quotient (IQ) test was not used, at least not as a screening instrument. The Scott Rating Scale was used in eight of the first series of Officers' Training Camps on a test basis. The rating scale was seen as one relative bright spot in an otherwise very unpromising situation. For overall, the screening mechanisms employed at first were weak and were administered in haste. This inevitably led to mistakes.

At the Field Artillery OTS, a fairly rigorous screening system was instituted to determine which candidates would actually receive commissions. The system did not help the Army decide who would be allowed into the camp, only who would leave as an officer. The candidate attempting to earn a commission was graded on technical subjects. The grading rubric was based on a 100-point scale, 70 being the minimum average for graduation. The candidate was also evaluated on a monthly basis on the five essential qualities of an officer, listed on the Scott Rating Scale. This scale that will be discussed in more detail later in this

chapter. The minimum rating for graduation was 50. The relative rank of each graduate was based upon the average of his technical subjects grade and his essential qualities rating. At the close of training, the names of the candidates recommended for commission were arranged in an order of merit from best to poorest and placed upon the eligible list.

SCREENING PROCEDURES IN THE THIRD SERIES OF OFFICER TRAINING SCHOOLS

As previously noted, the third series of camps marked a change in the general policy of OTS. In the first two series, the candidates came from civilian life. Now, the great majority came from the enlisted ranks. The same procedure of selecting men on the basis of a physical examination, an application blank, and letters of recommendation was retained, but now the applications and letters of recommendation were submitted by enlisted men to their company commander; upon his recommendation, the men were considered by battalion and regimental commanders, and finally by a special board convened for the purpose.

The third series of camps began on January 5, 1918. To standardize the recommendations of company officers, the rating scale was introduced as an entrance screen. Up to this time, it had been used exclusively in selecting candidates within the Officers' Training Camps for commissions. Now it was also used to identify men for attendance at camp. Each platoon commander was told to select a group of men who could qualify as candidates for OTS. About one-fifth of the men fell into this group. Platoon leaders were instructed to consider general military qualifications that were the most essential for an officer, such as

commanding presence, strong voice, loyalty, capacity for leadership, and high intelligence. Pocket Rating Cards were used for gauging the potential of the candidates and special records were maintained on all candidates. After this platoon level evaluation was complete, company commanders would select the most highly qualified candidates—the number was not to exceed 10 percent of their unit. In making their selections, company commanders would make use of the reports of their platoon leaders, their own knowledge of the men and the educational and occupational history of the applicants as shown by the Qualification Record Card. An Order of Merit List (OML) was then compiled and passed through regimental and brigade channels to the division headquarters, where the division commander would convene a board of three officers to consider all applications and select the attendees. The number of attendees was not to exceed 1.7 percent of the enlisted men in the division cantonment.[24]

SCOTT RATING SCALE

Commencing with the second series of camps, the Scott Rating Scale came into general use. This rating scale was originally devised for a group of business organizations in December 1916. Army officers cooperated in adapting the scale to Army needs. This originally involved the selection of exemplars, known to the officers on the rating scale committee, who best and most clearly represented five levels (highest, high, middle, low, and lowest) on five different constructs (viz., physical qualities, intelligence, leadership, personal qualities, and general value to the service). Later, specific items were developed, along with unique and descriptive scales, for inclusion in each of the

construct areas (expanded to 20). Sample items shown in Figure 3-1 illustrate what was found on the survey instrument.[25]

3. Does he appear neat or slovenly in his dress?				
Extremely neat and clean. Almost a dude.	Appropriately and neatly dressed	Inconspicuous in dress	Somewhat careless in his dress	Very slovenly and unkempt

13. How flexible is he?				
Hidebound. Runs in a rut.	Slow to take up new ideas	Progressive tendencies	Quick to pick up new ways and habits	Is always adapting himself and taking up new ideas

18. Is he quiet or talkative?				
Talks seldom. When questioned answers briefly.	Does not uphold his end of the conversation	Moderately talkative	More than upholds his end of the conversation	Great talker. Always going.

Figure 3-1. Sample of Survey Questions.

It was then submitted to the Secretary of the Army and the Adjutant General for review. It was eventually approved by the War Department and was tested at the first series of Officers' Training Camps at eight locations—Fort Myer, Plattsburgh, Madison Barracks, Fort Niagara, Fort Benjamin Harrison, Fort Sheridan, Fort Snelling, and Fort Riley. These experiments were deemed successful. An improved form of the scale was authorized for use in the second series of OTS.[26]

The scale had been developed by Walter D. Scott, an eminent psychologist. When he first tried to get his scale accepted by the Army, he met resistance. Senior officers and many instructors denounced it as impractical. Scott eventually induced the War Department to test his scale with a practical experiment. His scale was used on men who were already commissioned and had already been identified as good officers. If Scott's instrument identified capacities that successful

officers were known to possess, then it could logically be assumed that the instrument was valid and an accurate predictor of officer performance. Scott's instrument proved accurate, and it was then that the War Department authorized its use in all camps.[27]

The Army employed Scott's rating system for three different functions: determining what types of skills and abilities that were needed in units, placing each enlisted Soldier in an occupational specialty in which he could make the best use of his talents, and most relevant to this study, selecting and screening officers on the basis of their abilities. By the end of the war, Scott's system had spread throughout the Army. Scott solved the problem of selecting not only officers but also men whose aptitudes would fit them for training as specialists and technicians of many kinds. His committee devised means of keeping wartime industries adequately staffed and made possible successful selection of men for unusual tasks peculiar to a wartime army. Scott's method was later used to gauge the promotion potential of officers and to regulate the effective use of the vast pool of talents and skills among enlisted men.[28]

INTELLIGENCE TESTING

Intelligence became recognized as an important factor in officer screening during World War I. An intelligence or IQ test was widely, albeit not universally, employed to select officer candidates after the second series of Officers' Training Camps (See Appendix C and D for copies of the Alpha and Beta Tests). The challenge of selecting officer material was to discover who among enlisted Soldiers were equal or superior to the average, or slightly below average, officer, and give them the opportunity to be commissioned.[29]

Under the direction of the Division of Psychology, Medical Department, and in accordance with provisions of War Department, General Order No. 74, mental tests were given to recruits during the 2-week detention period—the period that elapsed between the time a recruit was inducted into the Army and the time before basic training. This testing began shortly after the beginning of the war. These tests provided a quick and reasonably accurate classification of the men according to their level of general intelligence. The tests were prepared by a committee comprised of representatives of the American Psychological Association and the National Research Council. From the beginning of the war until November 1, 1918, approximately 1,500,000 recruits were tested.[30]

The tests were not used in the first two series of Officers' Training Camps, those operated by the MTCA. Many of the candidates who attended these camps were college students or college graduates. It was assumed that intelligence testing for screening purposes was not needed in such a highly educated population. In addition, the MTCA had operated the Plattsburgh Camps in the years before the war, and that organization brought its administrative apparatus as well as its assumptions and methods (which did not include intelligence testing) with it to OTS. Some, both at the time and since, believed that the MTCA operated with an elitist bias; it allegedly gave candidates who had attended prestigious, private universities preference when it came to camp attendance and officer selection. If this was in fact true, (and there is some evidence that it was), this practice abruptly changed with the third series of camps when the Army intervened and gave preference to enlisted candidates.[31]

In several of the third series of camps, candidates were personally examined by a final board of officers before being admitted to officer training. These boards were directed to interview all candidates in person and base their evaluation of candidates' officer potential on soldierly appearance, bearing, etc. This procedure resulted in weighting the applicant's physical qualities more than mental abilities. However, it was soon discovered that an evaluation based on appearance was not as reliable as the demonstrated performance on an intelligence test as a gauge of officer potential. The Army found that applicants of A and B intelligence—i.e., very superior and superior intelligence, the highest two categories—were being commissioned, while a considerably smaller portion of C+ applicants, only half of C applicants, and very few of C- applicants were being commissioned. So struck were several training camp commanders by this trend that they refused to accept anyone for the fourth series of camps who did not score C or better on the intelligence test. Nevertheless, it is necessary to reiterate that while intelligence testing was widely used after the second series of camps to select officer candidates, it was by no means a general requirement. Division and camp commanders could determine for themselves if, how, and when they would use the tests.[32]

Intelligence testing was not intended to displace other means of selecting officers. However, the realization gradually dawned on War Department leaders that intelligence was perhaps the most salient single factor in officer efficiency. It was found that applicants who scored C or lower were rarely equal to the challenge of complicated paperwork or other higher order intellectual tasks. Intelligence testing also demonstrated that there was an intellectual hierarchy among

the branches. The Engineers and Field Artillery had the highest scores, while the Infantry, Quartermaster Corps, and Dental Corps were in the lower half of the branches from an intelligence testing perspective.[33]

In Field Artillery and certain other camps, the intelligence test was not used to select candidates for a commission (as opposed to being admitted into a camp). At the Field Artillery's Central OTS, for example, candidates were graded for scholarship, military training performance, and personal qualities at both the beginning and the end of camp. They received a grade on technical subjects based upon a percentage basis of 100, with 75 as a weekly passing mark, and 70 as a minimum average for the course for graduation. They were also evaluated monthly using the Officers' Rating [Scott] Scale and its five essential qualities of an officer. The relative numerical rank of the graduate in the entire class was based upon the average of his technical subject grades and his essential qualities rating. The basis for weighting each of the 15 technical subjects taken was worked out and applied in computing the candidate's grade for graduation. This weighting system was based primarily upon the number of hours devoted to the subject, with modifications dictated by consideration as to the relative importance of the subjects as Field Artillery essentials. Based on a score of 100, the weighting was as follows: administration—2; care and training of horses—5; communication—6; conduct of fire—12; dismounted drill—4; driving—6; field gunnery—10; fire discipline—10; gun squad drill—2; materiel—7; pistol drill and guard duty—2; reconnaissance—10; re-drill—12; riding—2; topography and artillery boards—10. At the close of the school, the names of the candidates recommended for commissions were arranged in order of merit from highest to lowest and placed upon the eligible list.[34]

SELECTION OF STAFF CORPS OFFICERS

During World War I, nearly one-half of all Army officers were needed for the staff and auxiliary services. While OTS selected officers for the line units, no such uniform method of accessing officers existed for the professional and technical branches. Mistakes in assigning officers to the various specialty services were consequently unavoidable. Various methods were used to select staff officers and various degrees of success obtained. For that reason, it is not possible to draw any general conclusions concerning the recruitment and training of officers outside of the line schools because each branch of the service had a separate problem requiring separate treatment. It is possible only to sketch in general terms how the different branches obtained their officers.[35]

Some contend that the training camp principle had not been sufficiently established at the outbreak of the war to pave the way for its extension to the Staff Corps. There, custom and old habits remained strong. In certain branches, commissions were doled out without a thorough screening of the candidates making application. Some appointment-seekers were awarded commissions due to nepotism and political influence. Others owed their commissions to chance. They happened to appear first or showed up at the right time and right place. Too few were given appointments on the basis of demonstrated performance or experience.[36]

The scale of, and the haste with which the mobilization was carried out created problems. Some Staff Corps such as Chemical Warfare and Military Aeronautics were created almost overnight and needed officers not by the hundreds but by the thousands. In such cases, branches often bid against one another for qualified men. Under those circumstances, many

were awarded commissions for which they were not qualified. They went to Washington and made the rounds of the various departments seeking through influence or other device to get the best position available. All too often, they succeeded. In such an environment, bluster and braggadocio often trumped skill and ability. In the process, many qualified individuals were discouraged, rejected, or given rank well below their abilities. As a result, the Army saw the evils of the old volunteer system crop up once again.[37]

The Quartermaster and Ordnance Corps were notorious for their lack of discrimination in screening their officer candidates. Although both of these branches required recruits of high grade and highly technical qualifications, they found difficulty both in securing individuals of high caliber and in preventing the admission of those whose qualifications were weak. These results were the consequence of ineffective screening procedures. Many thousands of Ordnance and Quartermaster officers were appointed, especially in the early days of the war, without adequate investigation, observation, or training. The average quality of the officers in these two branches was adjudged to be among the lowest in the Army.[38]

The absence of effective screening procedures for these two branches excited much criticism, both within and outside the War Department. In fact, a strong public outcry arose against the commissioning of individuals without previous training or apparent qualifications in the Quartermaster and Ordnance Corps. Such an anomalous method of parceling out commissions ran against the progressive spirit of the age. The bad reputation of these branches made them less attractive to men of ambition and energy and further complicated the task of recruitment.[39]

The loose way in which commissions had been granted in some branches of the Staff Corps eventually led the War Department to step in. It attempted to correct the situation by creating a Personnel Branch within the General Staff. This branch was to have sole charge of filling the demands for all classes of Staff Corps officers, such as: Ordnance, Quartermaster, Motor Transport, Military Aeronautics, Supply, Military Intelligence, Air-Craft Production, Tanks, Gas Defense, Chemical Warfare, Judge Advocate General, and Adjutant General. The plan aimed to consolidate under one head a central organization that could regulate the demands of the various Staff Corps branches throughout the country, coordinate those demands with the supply of officer material available, and use that supply to the best advantage.[40]

As previously noted, not all branches in the Staff Corps proceeded as haphazardly as the Quartermaster and Ordnance Corps. The Corps of Engineers did a fairly effective job in screening and securing some 20,000 officers. The OTS method was used, but with a twist—the Engineers often sent officers to camp after awarding those commissions. This rather irregular policy was less harmful in the Engineers than it would have been in most other branches because original recruitment was accomplished almost entirely among engineers with some professional experience whose qualifications it was possible to ascertain with considerable accuracy.[41]

The Air Service, which had 20,000 officers by the end of the war, also created a generally effective system of officer procurement. It experienced few problems procuring qualified aviators. The flyers were carefully selected from a great number of volunteers and thoroughly vetted through a system of examining boards. The service had a harder time securing

qualified ground officers. One observer noted shortly after the end of the war regarding the procurement of ground officers:

> Such mistakes as were made were in the appointment of "ground" officers of whom a large number were required. Here, as [in the Engineers], the cause was the commissioning of candidates previous to training, on the basis of perfunctory recommendations and inadequate investigation.[42]

The Medical Department of the Army, with its more than 25,000 new officers, recruited officers through medical associations, applicants being appointed on recommendation and not after training. As in the case of the Engineer Corps, the known technical qualifications of the applicants made it possible to use this method with some success, but suggestions of unfairness and nepotism were common, and it is clear that things would probably have worked more smoothly if more rigorous and elaborate screening procedures had been adopted.[43]

ADMISSIONS POLICIES AT WEST POINT

During the First World War, the Academy's admissions process experienced a metamorphosis of a very negative kind. West Point saw its curriculum truncated and its admissions standards lowered. Upon the declaration of war, the War Department directed the U.S. Military Academy (USMA) to graduate the senior class—the one that had entered in 1913—on April 20, 1917, nearly a month and a half early. Shortly thereafter, the War Department instructed West Point to graduate the next class—the one that had entered in 1914 and had originally been scheduled to graduate in June 1918—early as well. The graduation was to occur in August 1917, 10 months early. The second 3-year

class—which had entered in 1915—graduated in June 1918 and a third 3-year class—the one that entered in 1916—was scheduled to graduate in June 1919. However, that schedule was disrupted. On October 3, 1918, the War Department ordered the superintendent to graduate the two upper classes—the ones that had entered in 1916 and 1917—on November 1. That left only the plebe class—the cadets who had arrived only 5 months earlier at the Academy. In addition, West Point was to take in a new class immediately and begin academic instruction out of cycle. Moreover, for the remainder of the war, classes were to graduate after only 1 year in residence (although after the Armistice, the Army returned the junior of the two graduating classes back to the Academy for 6 additional months of instruction). Army leaders had, the historian Lance Betros commented, effectively turned the USMA into "a glorified training camp for officers."[44]

For cadets entering West Point during the war, the customary mental screening measures were not employed. Candidates were selected in haste and admitted into the Academy without the usual thorough vetting. No entrance exams whatsoever were administered to the classes that entered in 1918 and the review of certificates submitted with applications was cursory at best. The results were predictable. Due to the fact that these appointees were suddenly selected, allowed practically no time for preparation of any sort, admitted without the usual mental tests, and then obliged to undertake an intensive course of academic studies and military training, many failed to meet the Academy's academic requirements. Many others, perhaps sensing failure, resigned before they had an opportunity to take their first set of examinations at the Academy.[45]

Purpose of Testing

Why test? What is testing's function? In short, we test because we want information about a person that we cannot get without asking. However, that information is tied to a particular goal, strategy, or system. These goals, strategies, or systems would be certification, diagnosis, and differentiation.[46]

Certification tests are given to ensure that persons meet minimal criteria or standards for knowledge and/or performance. For example, graduates of medical schools, although in possession of the Doctor of Medicine degree, nevertheless, they cannot practice medicine until they pass their respective states' medical boards. The Building Owners and Managers Institute offers coursework and certification exams so that individuals can become Real Property Administrators or Systems Maintenance Technicians. Whether the standards are set low or high, the goal of the test taker is simply to pass the exam. Those who administer a test for certification purposes select items that well represent what a practicing professional, or a graduating student, should know or be able to do.

Diagnostic tests are administered for the purpose of detecting the presence or absence of something.[47] The field of medicine is rife with examples of such a test. One might give a magnetic resonance imaging (MRI) test to a patient to see if a knee ligament is torn, for example. Or, a drop of blood can be tested for blood sugar levels using a glucometer. However, there are paper-and-pencil diagnostic tests as well. In psychology, there are tests for attention-deficit/hyperactivity disorder, depression, and posttraumatic stress disorder. Generally, the higher or lower a particular score, the more or less likely one is to suffer from these psychological ailments.

Finally, tests are also administered for purposes of differentiation. The SAT (formerly known as the Scholastic Aptitude Test, then the Scholastic Assessment Test) is such a test; so also are most school quizzes and tests.[48] These tests measure knowledge (or ability); to do so well, they must differentiate individuals as much as possible. If, for example, we wanted to know how much enlistees understood advanced mathematics, we would not want to administer a test of basic arithmetic. While the scores likely would be very high, and while one could argue that basic arithmetic is the foundation for advanced mathematics, there would be virtually no differentiation among individuals. What we want and need would be as wide a spread in scores as is possible and as is reasonable. Put another way, people who know the material should score very high while people who don't know it should score very low.[49]

Moreover, the social composition and educational background of incoming cadets changed dramatically during the war. The number of cadets whose fathers were professionals plummeted by 50 percent, the number of cadets with prior college experience sank almost as precipitously, and the number of cadets with previous enlisted service reached an all-time high. Indeed, the percentage of cadets with prior military service changed permanently during World War I. Never again would the presence of former enlisted Soldiers drop back to the negligible levels of the pre-war days.[50]

Academy authorities were, as one can imagine, upset by the lowering of admissions standards. They complained that the wartime accessions policy was bankrupt. It was a mistake, they asserted, to allow the need for a large number of officers to compel "a general lowering of the Military Academy standards." Now that USMA graduates formed only a small fraction of the officers being inducted into the Army, it was more important than ever that West Point maintained its traditionally high admissions standards. In the dire circumstances of the war, however, such complaints fell on deaf ears.[51]

CONCLUSION

The Army had to take extraordinary measures to produce enough officers to direct its expanded force in World War I. To lead its line formations, the War Department established a system of OTS. These schools vetted and, to a limited extent, trained the men who eventually received line commissions. Starting with the third series of camps, the War Department drew principally from the enlisted ranks for its

officers. The OTS model represented a sharp break with tradition. In previous wars, political influence and the ability to raise troops figured prominently in determining who would receive officer appointments. Election governed the process of officer selection in many militia companies. Although the OTS model had pronounced shortcomings, it did bring a measure of consistency and standardization to the commissioning process.

The War Department's officer selection system for the technical and professional branches was more haphazard and very much in line with tradition. In many of these branches, political influence, personal connections, availability, and chance regulated the commissioning process. In the professional branches, where qualifications for a commission were clear and easily verifiable, relatively few problems were encountered. However, in branches where qualifications were less well-defined—most notably the Quartermaster and Ordnance Corps—serious difficulties arose. Many unqualified and incompetent recruits were commissioned.

The USMA underwent acute changes during the war. Its curriculum was severely curtailed and the course of instruction drastically reduced. Indeed, the traditional 4-year course was shortened to 6 months. Training took top priority and West Point became essentially an intensive version of the OTS program. At the same, admissions standards declined. The Academy eliminated the entrance test and the careful scrutiny of applicant transcripts. West Point authorities were despondent, but had to wait until the cessation of hostilities to reintroduce rigor into the selection process.

ENDNOTES - CHAPTER 3

1. Earl W. Thomson, "Our Military Policy Regarding the Training of Citizens," *The Coast Artillery Journal*, Vol. 58, No. 4, April 1923, p. 329.

2. There were 5,791 officers in the army on April 6, 1917. On November 11, 1918, there were 188,434 officers.

3. L. P. D. Warren, *A History of Officer Procurement and the Development of the Officer Corps*, Washington, DC: Center of Military History, U.S. Army, March 1948, pp. 174-175.

4. James Gordon Steese, "Procurement of Commissioned Personnel in War," *National Service with the International Military Digest*, Vol. 5, No. 5, May 1919, p. 268.

5. "Announcement of the 2D Series of Officers' Training Camps," *National Service*, Vol. 1, No. 5, July 1917, p. 347; Thomson, p. 327; Staff Correspondent, "Making Officers at Chickamauga," *National Service*, Vol. 2 No. 3, October 1917, pp. 205-210.

6. "Editorial Comment," *National Service with the International Military Digest*, Vol. 5, No. 4, April 1919, p. 199.

7. Steese, p. 269.

8. Ibid.; Thomson, p. 327.

9. "Many Athletes of College and Professional Fame are Within Camp Lee: Brilliant Records," *Trench and Camp*, Edition for Camp Lee, Petersburg, VA, October 15, 1917, p. 6.

10. "Fifty American Colleges Are Represented at First Meeting of Army Officers at Camp Lee," *Trench and Camp*, Edition for Camp Lee, Petersburg, VA, January 14, 1918, p. 8.

11. Thomson, p. 328. Some of the critics of the Military Training Camps Association (MTCA) believed that the organization's objections originated from an "elitist" bias.

12. Steese, p. 295.

13. Raymond Walters, George Palmer Putnam, John Kirby, Arthur Baer, Homer Dye, Jr., Forrest B. Myers, and others, *F.A.C.O.T.S.: the Story of the Field Artillery Central Officers' Training School, Camp Zachary Taylor*, Kentucky, New York: Knickerbocker Press, 1919, p. 21.

14. Steese, p. 328.

15. "Report of the Secretary of the Military Training Camps Association," *National Service*, Vol. 2, January 1918, pp. 443-454.

16. Ibid.

17. Ibid.

18. "Report of the Secretary of the Military Training Camps Association," *National Service with the International Military Digest*, Vol. 5, Iss. 3, March 1919, p. 152.

19. Ibid., p. 151.

20. Arthur F. Cosby, "M.T.C.A. Notes," *National Service*, Vol. 4, Iss. 1, August 1918, p. 46.

21. Ibid., p. 153.

22. Ibid., p. 152.

23. Ibid.

24. Ibid., p. 199; Harry Richard Yarger, "Army Officer Personnel Management: The creation of the modern American system to 1939," Ph.D. dissertation, Philadelphia, PA: Temple University, 1996, p. 120. The system of judging candidates as described above was used to advantage in the second series of officer training schools (OTS) except that in the third series, the system was supplemented by a concrete rating scale.

25. Committee on the Classification of Personnel in the Army, "How the Army Uses Individual Differences in Experience: Trade Tests, Development Battalions, The Rating Scale," *The Psychological Bulletin*, Vol. 15, No. 6, 1918, pp. 187-206; Max Freyd, "The graphic rating scale," *Journal of Educational Psychology*, Vol. 14, No. 2, 1923, pp. 83-102.

26. Clarence S. Yoakum and Robert M. Yerkes, comp. and eds., *Army Mental Tests*, New York: Henry Holt and Company, 1920, p. 26.

27. Ibid.

28. Ibid.

29. Ibid., p. 3.

30. Ibid., p. 22; see also, "Rerate Entire Army According to Plan In Force Here: Camp Lee Psychological Tests to Be Extended to All Enlisted Men," *Trench and Camp*, Edition for Camp Lee, Petersburg, VA, January 28, 1918, p. 8; "Testing to Select and Protect," *Trench and Camp*, Edition for Camp Lee, February 11, 1918, p. 8.

31. "Fifty American Colleges Are Represented at First Meeting of Army Officers at Camp Lee," p. 8.

32. Yoakum and Yerkes, p. 7.

33. Ibid., p. 22.

34. The school uses a combined qualification and final record card. The qualification form on one side of this card is an adaptation of Committee on the Classification of Personnel in the Army forms. It is filled out by each candidate early in his course, under the supervision of an officer who is responsible for its accuracy. On the other side of the card is the final record of the candidate upon which entries are made from the grade and rating sheets weekly in the Registrar's office. This form presents on one-page ratings for the five essential qualities of an officer and grades in technical subjects.

35. Ibid., p. 151.

36. Ibid., p. 153.

37. Ibid.

38. "Editorial Comment," p. 200.

39. Ibid.

40. "Report of the Secretary of the Military Training Camps Association," *National Service with the International Military Digest*, Vol. 5, Iss. 3, March 1919, p. 153.

41. "Editorial Comment," p. 199.

42. Ibid.

43. Ibid., p. 200.

44. Lance Betros, *Carved from Granite: West Point since 1902*, College Station, TX: Texas A&M University Press, 2012, pp. 41-42. Betros notes:

> West Point graduated two classes on time and admitted a new class under the accelerated procedures. Following the armistice, West Point received back the junior of the two classes just graduated and put the officer-students through six more months of academics before graduating them again in June 1919.

See also the U.S. Military Academy (USMA), *Annual Report of the Superintendent of the United States Military Academy*, Washington, DC: U.S. Government Printing Office, 1919, pp. 3-4.

45. Ibid., pp. 3-4.

46. Richard P. Phelps, ed., *Correcting Fallacies about Educational and Psychological Testing*, Washington, DC: American Psychological Association, 2009.

47. Diana Nicoll, Stephen J. McPhee, and Michael Pignone, *Pocket Guide to Diagnostic Tests*, New York: McGraw-Hill Medical, 2003.

48. Ronna F. Dillon, ed., *Handbook on Testing*, Westport, CT: Greenwood Publishing Group, 1997; Paul Kline, *Handbook of Psychological Testing*, 2nd ed., New York, NY: Routledge, 2000.

49. U.S. Office of Strategic Services, *Assessment of Men: Selection of Personnel for the Office of Strategic Services*, New York, NY: Rinehart and Company, p. 194.

50. USMA, *Superintendent's Curriculum Study: Report of the Working Committee on the Historical Aspects of the Curriculum for the Period 1802-1945*, West Point, NY: U.S. Military Academy, 1958, Appendices pp. 23-25.

51. "Academic Board Minutes, 1918," December 12, 1918, West Point, NY: U.S. Military Academy Archives, p. 295.

CHAPTER 4:
INTERWAR PERIOD

INTRODUCTION

Throughout the interwar period, the Army could be selective as to whom it allowed into the officer corps; albeit, once again not quite as selective as it had been before the war. Its small size relative to the population was a principal reason why it could remain so discriminating. The officer corps was maintained at a strength of approximately 12,000 from 1923 until the eve of World War II. This was almost triple the size of the pre-World War I officer corps. Over the same period, the U.S. population expanded from 106,000,000 to 132,000,000. The officer to population ratio, therefore, ranged from 1:8,833 to 1:9,429 between 1920 and 1941—ratios small by the standards of the pre-World War I era but huge compared to the ratios that existed during the 1st decade of the Cold War.

AFTER THE ARMISTICE

The Army emerged from World War I far larger that it had been before the outbreak of hostilities. On November 11, 1918, the date on which the Armistice ending World War I was signed, the officer strength of the Army, including Regular Army, National Army, and National Guard, was 188,434. Approximately 100,000 were products of OTS.[1] This huge body of officers—or at least most of it—had to be demobilized and demobilized quickly. Nevertheless, even after the demobilization was complete, a sizable officer corps remained.

This enlargement (pre-war versus post-war size) was accompanied by a noticeable downturn in the intellectual quality of the officer corps. This downturn occurred because—first, new accessions requirements were greater than before 1917 and this necessarily diluted quality to a slight extent; and second, and much more significantly, the Regular Army had to quickly incorporate many provisional or temporary junior and mid-grade officers into its ranks to reach and sustain its expanded post-war size. It simply could not support the enlarged force with the Regular officers it had on hand—which was at nearly the same level as it had been before the war. And it could not rely on new officer accessions since it would take a considerable amount of time with the commissioning machinery then in place to build up to the necessary strength. As a result, World War I, like all previous major wars in U.S. history, allowed many temporary officers brought on for the emergency to remain in the Army after the cessation of hostilities. It was the War Department's only practical option.[2]

To get to its expanded size, the War Department, as it had done in the aftermath of the Spanish-American and Civil Wars, incorporated many of the officers who held provisional or reserve commissions into the Regular Army. When provisional appointments to the Regular Army were suspended in 1918, some 3,500 provisional commissions as second lieutenant had already been granted. By August of 1920, all of these officers had served their 2-year probationary periods and were awaiting the decision whether or not they would be incorporated into the Regular Army permanently. In addition, there were 2,000 officers on the eligible lists and 1,000 officers holding commissions in the Officers' Reserve Corps (ORC), the National

Guard, and the National Army who had indicated their desire to make the Regular Army a career. The large number of officers who desired incorporation in the peacetime Regular Army came as no surprise to the War Department. Even before the demobilization program got in full swing, the War Department realized that thousands of men who had earned reserve commissions wanted to continue their service. It had consequently made arrangements for accepting the best of them—or at least the best of them who would agree to remain on active duty—into the Regular Officer ranks. War Department Circular No. 75, dated November 20, 1918 provided that, in the demobilization that was about to commence, those temporary officers who desired to be commissioned in the Regular Army should be the last to be discharged.[3]

On June 30, 1919, the Chief of Staff wrote that:

> steps have been taken toward the procurement of material to fill, from the reservoir of war-trained material, such vacancies in the permanent establishment as now exist, mainly as a result of resignations, and as may be created in the reorganization of the Army. Early in December [1918] instructions were published giving opportunity to all emergency officers who so desired to submit applications for permanent appointment. These instructions provided that applicants be given a preliminary examination and be rated by boards of officers and their applications be forwarded to the War Department. . . . There have been received, classified and filed to date about 25,000 such applications. From the data available, at least 27,000 applications will be received, about 17,000 of which will have approval of the preliminary examining boards . . . **no applicant should be appointed who does not pass a thorough and satisfactory final examination** [emphasis added].[4]

The Army, however, was not able to live up to the Chief of Staff's expectations.

The Army Reorganization Act of June 4, 1920, effected the post-war restructuring of the Army. This statute is important to our narrative because it modified a few long-standing War Department policies and contained some entirely new ones relative to the officer corps: (1) for the first time since the Civil War, officers were to be appointed in grades up to and including colonel; (2) a General Staff Corps eligibility list was established; (3) the Regular Army officer corps was to be increased (to a maximum strength of 17,726) and not less than one-half of the increase was to consist of individuals who held non-Regular commissions during the war. Although Congress set the maximum strength of the Regular officer corps at 17,726, limited funds reduced the officer corps' actual strength to 12,000 by 1922. Nevertheless, because the officer corps was much larger after the war than it was before, authorizations were created for nearly 6,000 new officers.[5]

After so-called examinations were administered to applicants for the vacancies created in August and October of 1920, 5,593 Regular Army appointments were tendered, of which 5,217 were accepted. Commissions in the Regular Army were granted to 4 colonels, 18 lieutenant colonels, 358 majors, 1,497 captains, 1,948 first lieutenants, and 1,391 second lieutenants. The method of examination used in this process represented a radical departure from policies that had regulated officer entrance examinations since the Civil War. In his Annual Report for 1920, the Chief of Staff outlined this new procedure. First, the candidate's record was examined by a board of officers in Washington, and the results were then sent to the chief of

the branch in which the candidate sought appointment. Then, another board was convened by the chief of that branch to consider the records, which were subsequently submitted for final selection to the board of general officers, set up according to the National Defense Act (NDA) of June 4, 1920—this constituted the first part of the exam.[6]

The second part of the assessment consisted of a personal examination of the applicant. This examination included a review of physical, moral, educational, and professional qualifications. Ostensibly because of variations in rank, age, and condition of service of the applicants, a strict academic educational examination of the type traditionally given to non-West Point applicants for commission in the Regular Army was dispensed with—that is to say, no mental test was given. Wide latitude was accorded the examining boards in determining the scope of the assessment necessary in each particular case. The NDA of 1920 revoked the section of the NDA of 1916, which made all appointments provisional for a term of 2 years, exempted all the so-called provisional officers still on the active list as of June 4, 1920 from **any examination**, and made their appointments permanent. This procedure allowed hundreds of non-degreed officers to receive commissions in the Regular Army. The War Department did not like the process, but political pressure to reward veterans and fill vacancies in the officer corps quickly left it little choice but to expand the officer corps as expeditiously as possible.[7]

The large integration of officers in the years following World War I created a serious promotion—or rather, non-promotion—"hump" that plagued the War Department throughout the entire interwar period. There were many captains of approximately

the same relative rank on the promotion list, and far too many comparatively young colonels and lieutenant colonels who could not be retired for physical disability before they reached statutory retirement age. By the early thirties, captains were getting gray-headed and lieutenants were approaching the border of middle age, with no promotion in sight. The situation created a serious morale problem in the officer corps and was the subject of many letters to service journals and much discussion among members of Congress. In 1926, Congress directed the Secretary of War to study the situation and make a full report with appropriate recommendations. Despite this study and others like it, the problem persisted. It lingered on until the late 1930s, when the build-up for World War II finally brought a measure of relief.[8]

Nevertheless, after this large group of officers was incorporated into the Regular Army in the aftermath of World War I, things returned more or less to normal as far as officer accessions were concerned. All regular line appointments would in the future be made only in the grade of second lieutenant and rigor was restored to the officer selection process. In addition, West Point once again became the Army's most prolific commissioning source. To be sure, candidates from civil life and from the enlisted ranks were given commissions; but, until the late 1930s, the numbers involved were quite small. In fact, in the 10-year period from 1923-1933, only 590 officers were commissioned from sources other than the U.S. Military Academy (USMA), and there were none from 1933-36. Moreover, as one might expect, rigorous entrance examinations for non-West Point candidates were reinstituted. Once again, only enlisted Soldiers and candidates from civil life with very solid liberal educations could gain entrance

into the officer corps. In this new accessions environment, the overwhelming majority of those commissioned had baccalaureate degrees.[9]

ADMISSIONS AT WEST POINT

West Point's appeal hit an interwar low early in the post-war period when prosperity, war weariness, and a widespread desire to return to normalcy lowered the attractiveness of military service. However, the Academy's appeal along with its ability to be discriminating in its admissions standards recovered quickly and remained high throughout the decade of the 1920s. It rose even more during the Great Depression. Economic downturns are almost always good for military recruiting and the depression that struck in 1929 was no exception—it was one of the nation's worst economic downturns and shunted thousands into the military services, as both officers and enlisted, who might otherwise have chosen other career tracks. Inundated with applications, the Academy could afford to discard any candidates that failed to measure up to its exacting standards.[10]

It is necessary to remind the reader that although entrance standards remained high, they were not as high as those in place before World War I. The growth of the Corps of Cadets accounts for some of this. The size of the entering plebe class doubled between 1915 and 1922, reducing the Academy's ability to be selective to a certain extent. It essentially doubled again in the late 1930s, when a troubling international environment prompted the government to take some preliminary steps to bolster the nation's defense posture. Thus, over the course of the interwar period, West

Point's enrollment shot up fourfold, while the nation's population grew by 28 percent.

The Academy during the interwar period stressed high standards of academic achievement. The educational prerequisites for entrance included the completion of certain high school courses or their equivalent (as demonstrated by passing examinations), or the satisfactory completion of college courses covering essentially the same material. A substantial number of the annual nominations for appointment were considered competitive, which meant that within a given appointment category (e.g., from among children of deceased World War veterans or from among the enlisted men of the Regular Army), the individuals who scored highest on the written entrance examinations were appointed. Nominations made by Senators, Representatives, and authorities in the territories, on the other hand, were regarded as noncompetitive; the individual named as principal was appointed if the entrance requirements were met. If the principal failed and the first alternate qualified, the latter was appointed. Entrance examinations were held in March for admission in July of the same year, but applicants for noncompetitive appointments were not required to take the written examinations if they could qualify by high school or college certificate. This system had been in place since 1914.[11]

Candidates seeking admission through competitive appointment had to demonstrate by examination that they were well versed in algebra, to include: quadratic equations and progressions; plane geometry; English grammar, composition, and literature; and general and U.S. history. The entrance exam for these candidates remained very challenging. The admissions process was quite different for non-competitive

appointees. For this group of candidates, West Point's Academic Board considered in lieu of the regular mental examination: (1) a properly-attested certificate that the candidate was a regularly enrolled student in good standing without condition in a university, college, or technical school accredited by the USMA and had successfully completed a certain number of prescribed subjects with a certain grade; (2) a properly-attested certificate that the candidate had graduated from a preparatory school or public high school accredited by the USMA, with the prescribed subjects and appropriate grades; and (3) a properly-attested certificate from the College Entrance Examination Board (CEEB) that the candidate had shown proficiency in the examinations set by the board in subjects amounting to 14 units from a prescribed list of subjects. If a scrutiny of the certificate submitted showed low grades, the certificate would be rejected.[12]

In the early 1920s, approximately three-quarters of entering cadets were admitted into the Academy by qualification on certificate. A satisfactory certificate was required to demonstrate proficiency in 14 units, shown in Tables 4-1 and 4-2.

Subject	Units
Mathematics, A1 (algebra to quadratics)	1
Mathematics, A2 (algebra, quadratics, and beyond)	1
Mathematics, C (plane geometry)	1
English, A (grammar and composition)	1.5
English, B (literature)	1.5
History, A (ancient) History, B (medieval and modern) History, C (modern) History, D (English) History, E (American) History, F (American and civil government)	(any two) 2
Total	8

Table 4-1. Required Certificate Proficiencies from Mandatory Subjects.

The remaining six units had to be furnished from among the following subjects:

Subject	Units
Mathematics, B (advanced algebra)	0.5
Mathematics, D (solid geometry)	0.5
Mathematics, E (plane and spherical trigonometry)	0.5
Mathematics, F (plane trigonometry)	0.5
History, A History, B History, C History, D History, E History, F — (Any not submitted among required subjects in Table 4-1)	1
Latin, 1 (grammar)	1
Latin, 2 (elementary composition)	1
Latin, 3 (2nd year)	1
Latin, 4 (Cicero)	1
Latin, 5 (Virgil)	1
Greek, A1 (grammar)	0.5
Greek, A2 (elementary composition)	0.5
French, A (elementary)	2
French, B (either B or BC but not both)	1
French, BC	2
German, A (elementary)	2
German, B (either B or BC but not both)	1
German, BC	2
Spanish	2
Physics	1
Chemistry	1
Biology	1
Botany	1
Physical Geography	1
Drawing	1
Zoology	1
General Science	1
Any Above for a Total of	6

Table 4-2. Required Certificate Proficiencies from Optional Subjects.

The certificates of candidates were carefully scrutinized by a special committee appointed for that purpose. Any sign of weakness in one or more subjects in the candidate's scholastic record was sufficient to cause rejection of the certificate.[13] The Academy boasted that its admissions standards were "equal to, if not superior to," those of its "civilian counterparts," by which West Point officials meant Ivy League institutions. While the latter institutions would:

> commonly accept a man deficient in one or more subjects, and carry him on with **conditions**, the Military Academy insists upon proficiency in all subjects. . . . [and] grades well above the passing mark [emphasis in original].[14]

This all might have been true but that did not mean that the certificate system was without blemishes. In 1922, West Point found it necessary to simplify the Fourth Class (freshman) mathematics course because of the large numbers of newly admitted cadets with "poor preliminary mathematical training."[15] The huge plebe wash out rate in 1924 alerted the Academy's superintendent, Fred Sladen, to some of the problems inherent in the certificate system. "The more the subject is studied," he asserted, "the greater is the conviction that our present system of admission by certificate is wrong and that a remedy must be found."[16] Sladen, a member of the Class of 1890, had been admitted to West Point when a rigorous 3-day series of examinations had been required of every applicant.

Sladen laid the blame for these problems on two chief causes: first, the issuance by schools of certificates that did not accurately reflect a student's abilities and attainments; and second, a general lowering in the quality of teaching in secondary schools.[17] The Academic Board, the superintendent explained, regularly

accepted certificates showing the required number of units, the required subjects, and good grades. Such certificates, based on daily contact with a student over 4 years of preparatory course work, had been presumed to be the best evidence of the student's ability to master the course material at West Point. The Academy should have been able to regard students with satisfactory certificates as "good risks." Unfortunately, this was not the case. A review of certificates over a 4-year period showed that of those admitted by certificate, nearly 30 percent were discharged for academic deficiency.

> After the semi-annual examinations of 1922, for example, in the single subject of Fourth Class English, forty-nine cadets were deficient, every one of whom had been admitted upon a certificate showing grades well above satisfactory in that subject. The English deficiencies which caused the discharge of these cadets were basic and elementary, deficiencies in the first principles of grammar, deficiencies in spelling, deficiencies in any sense of composition form.[18]

The superintendent connected the general lowering of teaching standards in secondary schools to the turbulence and upheaval occasioned by the war. In recent years, he opined, the USMA had been receiving the products of schools whose teaching staffs had been thinned by the unsettled wartime conditions. Regardless of the cause, he continued, the character of preparation had been poorer than in former years.

> Out of nine hundred and sixty-eight cadets admitted during a four-year period by certificate, two hundred and eighty-seven, or 29.64%, were discharged for academic deficiency; and [by way of comparison] out of four hundred and twenty admitted by examination, sixty-four,

> or 15.23%, were discharged [in the first 6 months of their cadetships on account of academic failure].[19]

In the superintendent's opinion, such heavy attrition signaled a major problem with the Academy's screening procedures.[20]

Sladen noted how widely educational standards differed throughout the country, a fact reflected in the student body at the Academy. Students from states with "good school systems," he wrote, "succeed readily in mastering the West Point course." States with poor school systems, on the other hand, generally produced poor students.

> Massachusetts ranks best, with only 8.7% of cadets admitted therefrom failing in their studies. Florida is second, with 11.1% failing; New York is third, with 12.3% failing; and North Dakota, South Dakota, Illinois, North Carolina, Vermont, New Jersey, Kansas, California, and Michigan follow in the order named, all having less than 18% of failures. At the other end of the list we have the deplorable record of one State [that he did not name] which showed as high as 52.6% of failures of its entrants to master the course.[21]

Sladen bemoaned the huge waste of resources and personal disappointment that accompanied this high failure ratio.

The superintendent looked back at admissions and failure rates at the Academy from 1911 to 1923 to get a long-term view of the effects of the certificate system on admissions. The most recent iteration of the certificate system, he noted, was instituted in June 1914. No dramatic change in the percentage of cadet failures during the first 6 months at the Academy was evident during the first few years of the certificate system. The percentage from 1911 to 1913, inclusive—years when

all cadets qualified for admission by examination—was 14.9. The percentage in the years from 1914 to 1916, after the certificate system was introduced, was only moderately greater—17.6.[22] After the war, however, the situation rapidly deteriorated. Between 1919 and 1923, more than 27 percent who qualified by certificate were lost in their first 6 months at the Academy—almost a two-fold proportional increase over the period 1911-1913. This high wash out rate was especially disconcerting in view of the fact that more than 73 percent of the entering classes after World War I entered by the certificate method. As a result, West Point was compelled to dumb down its courses in order to accommodate the large number of inadequately prepared cadets admitted under the certificate system.[23]

Sladen was concerned because the USMA was the only one of the leading collegiate institutions in the East that admitted candidates on the basis of a certificate alone. Yale, Princeton, Harvard, and the Massachusetts Institute of Technology all required qualification, in part at least, by examination. The Naval Academy, after a trial of the certificate system, had abandoned it and reintroduced the entrance exam. Sladen was sure that admissions standards had to be stricter, and that meant a return to a general entrance examination or its equivalent. He sent a detailed report to the War Department explaining his views on that subject and recommended that the entrance examination for all candidates be reintroduced.[24]

Although the superintendent's pleas for a return to entrance testing did not yield immediate results, it undoubtedly contributed to the introduction of the "validation" test in 1930. By that year, Sladen's successors had weighed in on the issue, reiterating his

request for the reinstatement of some form of entrance exam. Moreover, the attrition rate of the plebe class continued to be extraordinarily high and a matter of serious concern. The validation examination targeted students who gained admission to the Academy on the basis of their high school certificates. The first validation tests were given in March 1930 (for candidates seeking admission beginning July 1, 1930). These first validation tests gauged proficiency in algebra, geometry, and English. If applicants did not pass this test, they would be rejected. It was expected that the benefits of the validating examination would be almost immediately noticeable.[25]

Many candidates applying to West Point from high school devoted considerable time and energy studying for the validating exam. A large number of them, ranging between 30 and 40 percent of all those who were eventually admitted, spent from 6 months to a year at special preparatory schools created specifically to help students pass the West Point admissions test. One such candidate was John S. D. Eisenhower, the son of Dwight Eisenhower. In his memoirs, he described his experience at the school operated by Homer B. "Beanie" Millard in Washington, DC. "West Point in those days (i.e., 1940)," Eisenhower recalled:

> had an artificially rigid entrance examination. In geometry, for example, it had not succumbed to the easier modern courses. In the course of the year Beanie drove us through the geometry book, the algebra book, an American history book, and an ancient history book, three times each. We also memorized English authors, works, and quotes from Beanie's ingenious pamphlets. If anyone missed a question in math, he was given a second chance. If he failed the second time, he was required to write out the problem twenty-five times for submission the next day, in addition to his other studies. Two errors

> in history required copying the chapter, word for word. The English teacher had a list of a thousand often-misspelled words. If a student missed a couple of them on an English theme, he was directed to copy the entire list several times.[26]

According to Eisenhower, attendance at an institution like Beanie's was a virtual prerequisite for admission to West Point, at least for those students coming from high school. "[T]hose [candidates] who had not attended 'cram' school," Eisenhower observed, "could practically be discounted."[27] The "Personal History Sheets" of cadets attending the Academy immediately before World War II bear out Eisenhower's assertion.[28]

While high schoolers were compelled to take a test, candidates who presented college certificates continued to be excused from a validating exam and were evaluated on the strength of their college transcripts alone. This did not prove to be a particularly wise admissions policy. Studies conducted by the Academy showed that in every entering class between 1934 and 1940, the cadets who were admitted on the basis of their college certificate had as a group the highest academic deficiency rate.[29]

It is probably more than coincidence that the reintroduction of an entrance examination for high school graduates coincided with the onset of the Great Depression. The years after World War I were generally not good ones for recruiting. The economy was strong, and the country, tired of war, longed for a return to normalcy. In such an environment, the validating test might have seemed to some War Department officials to be infelicitous—as too restrictive and inimical to enrollment. The Great Depression changed the admissions equation. In an era of high unemployment and financial hardship, West Point, already an

appealing institution, became an even more attractive choice for many students. With students beating a path to their door, Academy admissions officers realized that they could be more discriminating, which is perhaps why they chose to reintroduce the validating exam for high school graduates at that time.

The high expectations that the superintendent had for the validating exam were realized. The test was found to be an effective screening tool. It resulted in the lowering of the plebe or freshman academic failure rate substantially. During the 1929-1930 academic year, academic failure led to the discharge of 64 plebes. The next year, only 46 freshman cadets were eliminated for academic failure. Academy authorities were convinced that the validating examination was largely responsible for the improvement. The exam was kept in place for the remainder of the interwar era.[30]

Several other relatively minor adjustments were made in the screening process during the 1930s. The validating exam itself was frequently revised, although none of the revisions were major or extensive. Those revisions, however, did have the cumulative effect of shortening the exam by several hours. In the late 1930s, the Academy experimented with the CEEB's Scholastic Aptitude Test (SAT) as a substitute for the validating exam. The SAT was used as an optional method of substantiating high school certificates for the first time in 1939. During that year, 16 candidates took advantage of this optional test but only 3 of those 16 were admitted into the Academy. The next year, 7 took the SAT, but only 1 of these seven was admitted. The Academic Board could not draw any conclusions about its effectiveness since so few students opted to take it. Nevertheless, the Board retained it as an

option, believing that it would become more popular in the future.[31]

Another change in the admissions screening process entailed making honor graduates of honor military schools take the validating exam to qualify for admission. Until 1939, these military school graduates were considered as a separate admissions category and granted entry based on their certificate alone. Many military schools and institutes had come to regard this as their special right. However, once admitted, cadets from these institutions had an extraordinarily high washout rate. Their annual freshman attrition rate averaged about 50 percent—almost all of the attrition being due to academic deficiencies. Requiring honor graduates to take the validating exam had an immediate effect, bringing their attrition level down to the Academy average.[32]

CONCERNS ABOUT THE CONGRESSIONAL NOMINATION PROCESS

During the interwar years, the Academy's administration continued to express concern about the debilitating effects of the congressional nomination process on admissions. The concern was greatest in the early 1920s, when in the aftermath of the Great War, propensity for military service among youth was at a low ebb. The nomination process had bedeviled the Academy to a greater or lesser extent since its establishment. That process was inimical, the Academic Board noted, to the Academy's goal of attracting the best students into its cadet corps. Nominations were often made without the congressman or his staff carefully scrutinizing the candidate's mental qualifications. One result of this irregular procedure was that

an excessively large proportion of nominees failed to meet the academic requirements for admission, thus leaving many vacancies in the number of authorized cadetships. Another untoward result was that a considerable number of cadets, after having been admitted, proved unable to handle the course load at West Point and were discharged for academic deficiencies. The direct loss to the government was considerable, both in terms of vacancies in the Corps of Cadets and in the expenditure of time, money, and effort in the attempt to move cadets through the system who had an inadequate secondary or collegiate education.[33]

To correct this problem, West Point's Academic Board suggested that two measures be taken; first, that state-wide and district-wide preliminary competitive examinations be held to select candidates for Senatorial and Representative appointments; and second, that provision be made that whenever all vacancies at the USMA have not have been filled through the regular entrance examinations, the remaining vacancies in each state shall be filled by admission from the whole list of alternates of that state, selected on the basis of their order of merit rank established at such entrance examinations. This would raise the overall quality of nominees, the Board was convinced, as well as save the government money, since West Point would have to discharge fewer cadets due to academic failure. The Board's recommendations to streamline and reform the nomination process were not adopted, and the admissions process went on as before. Few legislators, it seems, wanted to limit their prerogatives and their power of patronage in the way suggested by the Board.[34]

ENLISTED APPOINTMENTS TO WEST POINT

After World War I, West Point systematically began to pursue enlisted candidates for the first time. It was not a voluntary move. Congress had passed an act on May 4, 1916, directing West Point to admit more Soldiers from the enlisted ranks. Shortly after the passage of the NDA of 1920 (June 4), the Army took action to fulfill the purpose of the law.[35] It began to establish West Point Preparatory Schools in each Corps Area in the Continental United States and in the Insular Departments overseas. The Academy took this step, it seems, in response to congressional pressure. Certain senators and representatives feared that unless special preparatory schools were established, few enlisted men would qualify for admission. After all, most enlistees came from families who could not afford to give their sons a good education and needed help meeting the Academy's rather strict entrance standards. Select enlisted men began attending these schools in the summer of 1920. After a year of intensive instruction, they were permitted to take the competitive examination for entrance into the Academy.[36]

Three principal motives inspired the congressmen who sponsored the bill reserving slots at West Point for enlisted men.[37] One was a desire to improve recruiting by providing an incentive for bright and ambitious young men to join the Army or one of the reserve components (RC). One congressman was convinced that:

> no class of men will do the best work of which they are capable unless there is some incentive to effort. A great many young men who have an ambition along military lines would join the Army if they could see a way to an education and promotion.[38]

His solution was to hold the door of admission to West Point "wide open" to the capable young man of limited means but great initiative. The congressman continued:

> I give it as my very humble opinion that you will never build up the military spirit and military knowledge among the masses of the people until you have made it so that an entrance into the Army affords a reasonable opportunity for advancement, education, and general improvement. Will somebody tell me what reason there is today for a young man to enter the Regular Army, at $15 a month, on a long term of service that takes the very best years of his life from him; that affords practically no room for intellectual improvement; that teaches him no trade or occupation; that turns him out at the end of that period without money in his purse, without business acquaintance, without any of those attributes which are being acquired and cultivated by the ordinary young men of the country who are not in the Army? Create a system under those conditions and it inevitably results in what? In the unfortunate going into the Army because he can do nothing better; in the man of slight attainment or slight ambition going into the Army because he cannot do better outside. Under such conditions you cannot secure the best material for the Army.[39]

Opening West Point to the enlisted ranks would also be an instrument of social uplift. It would require men who hoped to be admitted to the Academy to undertake a program of personal study to prepare for the rigorous entrance exams. In pursuing such a course, the men would "improve their minds," "vastly improve their usefulness," and prepare themselves to be better citizens. All these benefits would accrue to the Army and to the individual even if they never entered West Point or took its entrance exam.[40]

The ability for the private soldier to compete for a commission would thus help gentrify the enlisted ranks. One congressman explained:

> The officer having under him an enlisted man and knowing that the private has the opportunity under the law to enter the list of commissioned officers and to pass with him in any place whatsoever, to be received in his home, to be his associate in the council tent, will instinctively begin treating that private with a more kindly consideration. Upon the other hand, the private who understands that he will have an opportunity to someday associate with the officer will be inclined to fit himself for the higher walks of life that are usually trod by the officer. He naturally will cultivate the amenities and the kindlinesses which he hopes will be the foundation for a future association.[41]

Finally, opening the way for more enlisted participation would "democratize" West Point and erase the Academy's reputation as a bastion of privilege, political patronage, and militarism. Admitting enlisted men into West Point, even on a limited basis, would supposedly tear down caste barriers and incline officers to view private Soldiers as their equals. The hauteur and class consciousness of the West Point graduate would be moderated and the Academy graduate would be better able to lead a mass citizen army in any future conflict. The officer would be made to realize that the service of the Soldier is not limited to military affairs, but carries over into the broader life of the nation as well. "The greatest generals," one congressman noted, "have usually been great civilians as well as technical soldiers."[42]

Another possible reason, not broached by the legislators who debated the measure, was recruiting. The Corps of Cadets had been expanded by the NDA

of 1916, and the Congress wanted to ensure that the Academy had enough candidates to fill its ranks. The enlisted population of the Army would provide a willing pool from which West Point could draw applicants. The question was: how many could qualify given the high entrance requirements of the Academy?

Although the path for enlisted candidates to enter West Point widened after World War I, it is difficult to determine how wide that path actually was. If one reviews the Academy's annual editions of Personal and School History Sheets (which is a compilation of the data sheets filled out by individual cadets upon entry to the Academy), one would get the impression that the enlisted path into the Academy was a narrow one. Annual commissioning reports indicate that few cadets from the enlisted ranks received Regular Army appointments. In some years, there were only two or three. Appointments from the enlisted ranks of the National Guard were more numerous but usually numbered fewer than 20 per year. On the other hand, an Academy-sponsored *Curriculum Study* indicates that, on average, about a third of the Corps of Cadets had prior military service during the interwar years. The nature of that service is not defined. Some enlisted men were able to secure congressional nominations and hence were not counted against Regular Army or National Guard allocations. Membership in the Reserve Officers' Training Corps (ROTC) program in college and attendance at a Citizens Military Training Camp were also, it seems, counted as prior military service.[43]

In any case, enlisted candidates from the Regular Army and National Guard, since they automatically received a competitive appointment, had to qualify for admission by examination, which was a very high and

exacting standard for young men without the benefit of a solid secondary or post-secondary education. In 1922, only 1 candidate from the Regular Army and 8 candidates from the National Guard were admitted out of a pool of 120 Regular Army and 60 National Guard enlisted Soldiers who took the entrance exam. (In addition, this pool of candidates was itself a relatively elite group for only the most intellectually astute enlisted men were granted permission to compete for an appointment.) The number rose in subsequent years but never surpassed 11 for the Regular Army (1927) or 22 from the National Guard (1929).[44]

WEST POINT'S ADMISSIONS STANDARDS

West Point's admissions standards eroded somewhat after World War I. The growth of the Academy's enrollment, the proliferation of new colleges and universities in the 1920s and 1930s, the increase in the number of enlisted candidates, and the sinking (albeit still relatively high) prestige of the military profession all contributed to this erosion. Nevertheless, the USMA remained one of the most selective colleges in the nation.

One gauge of the Academy's continuing selectivity was the performance of its cadets on the SAT. Although the SAT was not a requirement for admission, and was used only sparingly as a substitute for the validating exam, it was administered to all admitted cadets beginning in the summer of 1930—about a month after they entered the Academy and before the academic year began. It was used as a check of the admissions process and as a way to compare the caliber of student West Point was attracting with students admitted to other leading universities. West Point

during this period used leading Eastern universities as a measuring stick and stacked up quite well against those universities in terms of the quality of the student body. In fact, the SAT results from 1930 showed West Point cadets to have higher scores, on average, than students admitted to Yale University who took the test and scores that approximated those of students admitted to Harvard. True, not all students at these elite civilian institutions were required to take the test until later, and Harvard and Yale might not have been as intellectually elite as they are today. Still, they were some of the most selective schools in the nation and West Point stacked up well against them.[45]

Another sign of West Point's continuing academic prowess in the interwar period was the number of cadets who came to West Point with prior college experience. The percentage of entering cadets with prior college experience ranged from a low of 25 percent in 1927, to a high of 62 percent in 1938. The average was about 45 percent. This is significant in an age when less than 18 percent (8 percent in 1919, 12 percent in 1930, and 17 percent in 1940) of the annual high school graduating cohort attended college. The quality of the collegiate institutions attended is also worthy of note. As in the pre-World War I era, the nation's most revered and selective institutions such as Harvard, Yale, Princeton, Cornell, Dartmouth, Columbia, Brown, Penn, Stanford, Georgetown, Northwestern, Duke, Massachusetts Institute of Technology, California Institute of Technology, Vanderbilt, Johns Hopkins, Rice, and the University of Chicago were relatively well represented. In 1920, one entering cadet came to the Academy with a baccalaureate degree from Yale. Many others showed evidence of attending elite colleges such as Johns Hopkins and Princeton for

2 or 3 years before being admitted to the Academy.[46] In the interwar years, the percentage of undergraduates admitted to West Point that attended one of the institutions listed above hovered around 5 to 6 percent. Not an overwhelming number, perhaps, but a significant one nonetheless. If one counts such renowned state flagship institutions such as Berkeley, University of California, Los Angeles, Michigan, Illinois, Wisconsin, Texas, Washington, Iowa, Florida, North Carolina, and Minnesota, the percentage more than triples. Extend it again to encompass all flagship universities and the percentage rises to between 30 to 40 percent.[47]

Finally, since test scores and academic achievement are correlated to socioeconomic status (SES), it is relevant that the Corps of Cadets at West Point during the interwar period had a distinctly upper middle-class flavor to it. Well over 60 percent of the Corps, on average, came from what Academy authorities classified as the professional and managerial classes. Another 15 to 25 percent came from families headed by military officers. A relatively small percentage of cadets—10 percent on average—came from families headed up by skilled or unskilled laborers. Moreover, the number who came from the families of enlisted men was negligible.[48]

Several factors help explain West Point's continuing appeal during the interwar period. One of those factors, as already noted, was the Great Depression with its very slack labor market. West Point graduates were guaranteed well-paying jobs after graduation. An Army officer's pay and compensation during this period was much more generous that it would be after the war. Although salaries were slashed during the Great Depression, officers could still enjoy an upper middle-class lifestyle. Pay and a generous benefits

package allowed officers to sustain active social lives, employ full-time maids to help out with domestic tasks, and, in general, live a genteel existence. The availability of financial aid was another factor. In an era when college financial assistance was very limited, West Point could offer a full scholarship along with room, board, and a stipend to its students. Few other colleges could match West Point's aid package.[49]

OFFICERS FROM THE ENLISTED RANKS AND CIVIL LIFE

The Army continued to access officers directly from civilian life and from the enlisted ranks during the interwar period but at a relatively low rate. Direct enlisted accessions into the officer corps were extremely low, even lower than from civil life. The enlisted ranks accounted for less than 3 percent of the annual officer accessions cohort in the early 1920s and less than 1 percent in certain years during the 1930s. Direct accessions from civil life were only moderately significant. The Marine Corps, it seems, got more officers directly from Army ROTC (whose graduates formed a subset of officers from civil life) than did the Army. The principal obstacle to a commission for candidates from civil life or from the enlisted ranks was the stiff, multi-phased commissioning exam.[50]

That examination was quite extensive and required a passing knowledge of the principal subjects covered in good undergraduate programs. Candidates for a line commission, for example, had to pass oral and written tests in U.S. history, geography, spelling, grammar, composition, algebra, plane geometry, natural science, and "ordinary problems involving the use of logarithms" in addition to tests required by

the branch for which they were applying. Candidate review boards also screened candidates based on their ability to think clearly and express themselves in a clear and logical manner.[51]

Although the inflow of officers from civil life directly into the Army was low, there were a considerable number of officers—amounting to just under 30 percent of the officer corps—who were commissioned in the Regular Army out of the ORC and the National Guard. These were counted as accessions from civil life but were not new accessions in the traditional sense. Unlike those officers who had been accessed directly from civil life, however, these officers had experience in one of the RC before entering the Regular Army and usually came into the force at an advanced rank (first lieutenant or above). The overwhelming majority had college degrees, and many were products of the ROTC.[52]

A snapshot of the officer corps in 1935 might be helpful to put the accessions picture into perspective. In that year, 3,575 officers—or about 29.7 percent of the officer corps—had been appointed from civil life. The bulk of this group, it appears, came out of the ORC. In 1935 alone, 107 ORC officers received regular commissions. Warren, in his history of the Army officer corps, states that most of these officers were products of the ROTC, although he admits that the records do not specifically list the source of their reserve commissions. About 3 percent of the officers (380) came from the enlisted ranks. Coming in at about 20 percent (2,390) were so-called emergency officers, World War I veterans who had been incorporated into the Regular Army by legislation passed on June 4, 1920. There was a smattering of volunteer officers—amounting to

less than 1 percent of the officer corps. The remainder, more than 45 percent, were West Point graduates.[53]

The year 1935 saw the beginning of a moderate expansion and social widening of the officer corps. A worsening international situation in Asia and in Europe was behind this "modest build up," as the historian Richard Steward dubbed it.[54] In this expansion, positions were opened up for ROTC graduates desiring to come on active duty with the Regular Army. Prior to this, the Army made relatively little use of its ROTC program as a source of regular officers. Only a very limited number of honor graduates from the ROTC were commissioned in the decade after 1918. This practice was discontinued entirely with the coming of the Depression in 1929. The failure to provide a consistent policy for the integration of the most highly qualified ROTC graduates into the regular officer corps resulted in much outstanding talent being lost to the Army. The Marine Corps capitalized on the Army's failure. Knowing the Army offered very few commissions to ROTC graduates, the Marines offered commissions to graduates of certain ROTC units upon the recommendation of the Professor of Military Science (MS) and Tactics.[55] Competition for these slots was intense and the Marines ended up with a considerable number of outstanding men.[56]

However, in the mid-1930s, so many inquiries had been made by Reserve officers and senior ROTC cadets relative to appointment in the Regular Army that Congress passed a bill enabling ROTC officers to acquire a regular commission. Under the provisions of an act (Public Law 408, 74th Congress) passed on August 30, 1935, popularly known as the Thomason Act (named after Representative Robert Thomason of Texas), 1,000 Reserve second lieutenants were brought

on active duty with the Regular Army for a period of 1 year. Out of these 1,000 lieutenants, 50 were selected each year for a commission in the Regular establishment. This legislation accomplished a dual purpose: first, it allowed 50 young men annually to become officers of the Regular Army; second, it provided a year's intensive training to the remaining 950, making this large group of officers a mobilization asset. The large number of applications for active duty submitted under the Thomason Act permitted the War Department to be quite selective in awarding Regular commissions.[57]

Once brought on active duty, these ROTC graduates were subjected to close supervision and given intensive instruction in garrison schools during their year of active duty. Each one was methodically assessed and reported upon during their year of service. At each post to which they were assigned, a board of officers was convened to examine and report upon their fitness for appointment in the permanent establishment. The records of these officers, as well as the reports and recommendations of commanding officers and boards, were carefully studied in the War Department before the final selections were made. The 50 lieutenants finally chosen for regular service were a thoroughly vetted group of lieutenants. As a result, between 1935 (the year in which the legislation was passed) and 1941 (the year that the United States entered World War II) about 300 ROTC graduates were incorporated into the Regular Army through the Thomason Act.[58]

It was on the eve of World War II that the largest annual influx of reserve officers into the Regular Army occurred. In 1940, 836 reserve officers were awarded regular commissions. Most were ROTC graduates.

Their accession into the officer corps pushed the civil life component of the officer corps up to nearly 35 percent. The overwhelming majority of these reserve officers had baccalaureate degrees.[59]

CONCLUSION

Standards for entrance into the officer corps remained quite high throughout the interwar period. The Army had many more applicants for commissions than it had officer vacancies. To be sure, West Point's entrance standards may have eroded slightly. The institution expanded and admitted a majority of its students by certificate until 1930. Moreover, a pathway was opened up to enlisted candidates into the Academy in 1920, when preparatory schools were established across the country to make West Point more accessible to the enlisted ranks. Even so, the admissions standards at West Point remained quite high. This was especially true during the Great Depression when money was tight and West Point could offer a free, elite education and a well-paying job after graduation. The Army tightened up admissions policies in 1930, when it adopted a validating exam to more carefully screen applicants to the Academy. West Point's success in maintaining admissions standards is attested to by the collective performance of cadets on standardized tests. Cadets stood up well against students from the best universities in the East, at least in terms of the SAT scores of entering freshmen.

The tests required to earn a commission for applicants from civil life and from the enlisted ranks also remained quite challenging. The commissioning tests for non-West Point graduates were extremely rigorous and required a firm grasp of the principal

subjects covered in good undergraduate programs. A large majority of the officers brought on from civil life during the interwar years possessed baccalaureate degrees, a true sign of distinction in this era.

During this period, the ROTC did not directly produce many active duty Army officers. Its mission was to produce officers for the ORC—a manpower pool that could be drawn upon in case of mobilization. It was not until 1935 that an avenue opened for ROTC graduates to serve on active duty, and then on a very limited basis. The Thomason Act of 1935 authorized a year of active duty for 1,000 ROTC graduates annually, 50 of whom could be awarded Regular Army commissions upon completion of their tours. In the next chapter, we will investigate officer accessions during World War II, which unlike previous chapters of this book, is not primarily about West Point but about Officer Candidate School (OCS), the largest source of officers during World War II.

ENDNOTES - CHAPTER 4

1. L. P. D. Warren, *A History of Officer Procurement and the Development of the Officer Corps*, Washington, DC: Center of Military History, U.S. Army, March 1948, p. 177.

2. Ibid.

3. Ibid., p. 178.

4. Ibid., pp. 178-179.

5. Leonard L. Lerwill, *The Personnel Replacement System in the United States Army*, Department of the Army Pamphlet 20-211, Washington, DC: U.S. Government Printing Office, 1954, pp. 233-234. This number was in addition to those that were to graduate from West Point and be commissioned in July 1920.

6. Ibid., 234; Warren, p. 179.

7. Warren, pp. 179-180.

8. Ibid., p. 186.

9. Ibid., p. 181.

10. The total size of the Army between 1923 and 1936 ranged from about 133,000 to 180,000 Soldiers.

11. U.S. Military Academy (USMA), *Annual Report of the Superintendent of the United States Military Academy*, Washington, DC: U.S. Government Printing Office, 1920, p. 8. Hereafter, all USMA annual reports referred to as the USMA, *Annual Report of the Superintendent* along with their corresponding year.

12. Ibid., pp. 13-15.

13. Ibid.

14. Ibid., p. 14.

15. USMA, *Annual Report of the Superintendent*, 1922, p. 5.

16. USMA, *Annual Report of the Superintendent*, 1924, p. 8.

17. USMA, *Annual Report of the Superintendent*, 1923, p. 4.

18. Ibid, p. 12.

19. Ibid, pp. 12-13.

20. Ibid., p. 13.

21. Ibid.

22. Ibid. MacArthur did not consider the percentages for the years 1917 and 1918 because he considered them "abnormal." The country was at war, and the regular curriculum was greatly changed due to war conditions.

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30. USMA, *Annual Report of the Superintendent*, 1931, p. 61.

31. USMA, *Annual Report of the Superintendent*, 1939, p. 34; USMA, *Annual Report of the Superintendent*, 1940, p. 41; USMA, *Annual Report of the Superintendent*, 1941, p. 47.

32. USMA, *Annual Report of the Superintendent*, 1939, p. 35.

33. USMA, *Annual Report of the Superintendent*, 1920, p. 6.

34. Ibid., p. 20.

35. U.S. House of Representatives, *Congressional Record*, March 18, 1916, Washington, DC: The Government Printing Office, 1917, p. 4370. Hereafter, cited as *Congressional Record*.

36. Ibid.; Warren, pp. 181-182, 184.

37. The enlisted men were to be drawn from the Regular Army, the National Guard, and the Enlisted Reserve Corps.

38. *Congressional Record*, March 18, 1916, p. 4370.

39. Ibid., p. 4371.

40. Ibid., p. 4373.

41. Ibid.

42. Ibid., p. 4378.

43. USMA, *Superintendent's Curriculum Study*, p. 57; "Personal History Sheets," 1920 through 1940, USMA Archives.

44. "Personal History Sheets," 1922, 1927, and 1929, USMA Academy Archives.

45. Memorandum, C.L. Hall to Superintendent, U.S.M.A., January 13, 1931, "subject: Military and Naval Academy Scholastic Aptitude Tests 1930," USMA Archives.

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48. USMA, *Curriculum Study: Historical Aspects*, West Point, NY: Office of the Dean, U.S. Military Academy, 1956, Appen. 23.

49. Arthur T. Coumbe, *A History of the U.S. Army Officer Corps, 1900-1990*, Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2014, p. 34.

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52. Warren, p. 200.

53. Ibid.

54. Richard W. Stewart, ed., *American Military History, Volume II*, Washington, DC: U.S. Army Center of Military History, 2005, p. 37.

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56. Joseph Rockis, *Procurement of Officers for AGF, 1 September 1945-10 March 1948*, Demobilization Series Study No. 9,

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CHAPTER 5:
OFFICER ACCESSIONS IN WORLD WAR II

INTRODUCTION

From 1938 until mid-way through 1941, officer selection standards changed very little despite the fact that the officer corps expanded significantly. In the 3 years preceding the outbreak of World War II, Congress provided for an enlargement of the Army's officer corps from about 12,400 men to approximately 14,020. During that period, 3,223 appointments were made; this total included those commissioned in the promotion list arms and services and in specialty branches (or non-promotion list categories).[1]

It is noteworthy that although the need for officers was urgent at this time, the rigor of the examinations required for a commission in the Regular Army was not diluted; in fact, it was strengthened, and selections continued to be made on the basis of the best grades attained on entrance exams. Beginning in early 1941, the War Department extended the opportunity to earn a Regular Army commission to all qualified National Guard, Reserve, and Army of the United States (AUS) officers.[2] For the purpose of preliminary screening, a general education examination of the objective type (basically the same one required of officer candidates from civil life and the enlisted force during the inter-war period) was given to all candidates regardless of whether or not they had graduated from a recognized college. The examination covered a broad range of academic disciplines and required the applicant to qualify in two specialized subjects, which he could select. After taking this examination, which took 5.5

days to administer, the officer appeared before a preliminary examining board, which considered his military record. Having passed the qualifying examination and the preliminary board, candidates were examined physically and appeared before a final selecting board, which visited their home stations and interviewed the candidates and their commanding officers. Lists of selected candidates were compiled by Army commanders and forwarded to the War Department for final selection. As a result of examinations given during 1941, 235 officers were awarded Regular commissions on February 20, 1942 and another 124 officers on July 1, 1942.[3]

The approach of war forced the Army to deviate from its interwar commissioning model. In the armies that fought the world wars of the 20th century, the majority of officers had to be procured from the eligible civilian population and trained partially or completely for military duty after mobilization began. In the United States, this task was more difficult than in most major European countries because of America's relatively small professional Army and the perennial neglect of the military establishment in times of peace. The vast majority of the officers had to be drawn from three sources: from those who had received some training in peacetime military agencies—(the National Guard, the Officers' Reserve Corps [ORC], the Reserve Officers' Training Corps [ROTC], and the Citizen's Military Training Camps); from the limited group of civilians whose technical or administrative skills entitled them to direct commissions (this applied primarily to the technical and professional services); and from the Officer Candidate Schools (OCS) created in 1941 to convert eligible enlisted men into officers.[4]

OFFICER CANDIDATE SCHOOL (OCS)

OCS was by far the largest source of new officers during the war. The legal authority for the operation of these schools was contained in the National Defense Act (NDA) of 1920. This law gave military installations the authority to train warrant officers, enlisted men, and civilians to be commissioned officers. Mobilization regulations published in March 1935 directed that OCSs were to be established by Corps Commanders as quickly as possible after mobilization day, or M-Day, was announced and that these schools would be 12 weeks in duration.[5]

The need for expanding the Army officer mobilization base prior to World War II became an urgent issue within the Army as early as June 1938.[6] At that time, a detailed plan for establishing OCSs was submitted to the Chief of Infantry, Brigadier General Asa L. Singleton. Then in December 1938, the War Department issued another mobilization regulation that provided further guidance for the establishment of OCS programs. This regulation directed that OCSs be created as 3-month courses at the Army's service schools (instead of by Corps Commanders as prescribed in the 1935 regulations) and outlined how these schools were to be operated.[7]

On September 19, 1940, just 3 days after the President signed the first peacetime draft act in U.S. history, General Marshall issued a directive to implement the provisions of mobilization regulations to enable qualified enlisted men to become officers through the OCS program.[8] The program got off to a slow start. The schools did not begin operations until July 1941. Neither were they prolific. By December 1941, they had produced only a few hundred lieutenants in each

branch. While this pre-war test run of the OCS program was not very productive in a quantitative sense, it did have some military value—it allowed for the further training of National Guard and Reserve officers and the elimination of obviously unsuitable officer candidates.[9]

After the Declaration of War on December 8, 1941, the OCS system was immediately expanded. It continued to expand until, by the end of 1942, 23,000 men per month were being commissioned. By the end of the war, OCS graduates numbered 290,000 out of the roughly 800,000 Army officers on active duty at the time. Many thousands of those graduates reached the grade of major; a much smaller number became lieutenant colonels and colonels.[10]

In early February 1943, the Army decided to reduce the number of officers being commissioned through OCS. It noted that such schools had produced 240,000 officers since September 1941—including 23,000 in December 1942 alone—and that their output was down to between 2,500 and 3,000 per month, with further cuts in the offing. The Army had enough officers to meet requirements. In the event more officers were needed, theater commanders were told to appoint them from the ranks, issuing direct battlefield commissions.[11]

In its selection of officer candidates, the Army, as it had done in World War I starting with the third series of camps, gave preference to enlisted men. In general, OCS candidates with prior enlisted experience were thought to make the best platoon leaders, superior to both ROTC and West Point graduates because of their tactical skill. The OCS commissioning option also allowed the War Department to exercise more control over the commissioning process and better allocate

talent. With OCS, the department could decide who would become an officer and where and in what capacity officers would be assigned. Thirdly, the OCS program provided for upward mobility for enlisted personnel and appealed to the National Army's sense of egalitarianism. The philosophy behind OCS, one historian observed, "was implicit in the American doctrine of equal opportunity for all."[12]

Not everyone believed that the Army should turn to the enlisted ranks for its officers. At the very beginning of mobilization, Secretary of War Stimson tried to make OCS a course for college men, but General Marshall adamantly resisted, eventually threatening resignation over the matter.[13] In the face of this threat, the secretary yielded and let Marshall have his way. To proceed in the way that Marshall insisted it should, however, the War Department had to make certain compromises with educational standards.[14]

Expertise and Deliberate Practice

K. Anders Ericsson and colleagues provide much substantial evidence that expertise, or performing at a high level in a particular domain such as chess, music, or a sport, is very well explained by the amount of deliberate practice in which an individual engages.[15] Deliberate practice is more than merely trying hard or repeating steps for many hours. These are essential for the full development of skills, but such actions are insufficient for the development of the highest levels of performance. In short, the aforementioned actions are necessary for the automation of skills, but not for their perfection.[16]

Expertise is characterized by the possession of skills which execute cleanly (i.e., relatively error free) and efficiently (i.e., without unnecessary or superfluous steps). Deliberate practice is characterized, and distinguished from traditional practice, by the time and effort spent and by the focus of that effort. A person engaging in deliberate practice concentrates efforts on improving those aspects of performance on which he or she is weak or deficient. Normal practice simply serves to make the steps of the skill (whether it's putting on a golf green or playing the normal range of notes on a flute) meld together so that the skill executes effortlessly. For most individuals and in most circumstances, this is adequate. However, to reach the highest levels of a field or domain, one needs to go to the next level. At the highest level, everyone can perform the routine tasks well and quickly. The advanced expert, however, just as easily handles those aspects of performance which are rare, uncomfortable, novel, or difficult.

Deliberate practice requires great commitment as it generally involves practicing those relatively poorly executing skills (or elements of skills) for a few hours a day (and normally alone, although coaches/mentors are very often part of the training process). Most individuals, in most circumstances, and given most resources and responsibilities, settle for a compromise; they perfect their performance enough so that they are effective and employable, but they still have enough time for the other duties and interests in their life.

From a training and education perspective, the development of advanced expertise in the Army has built-in limitations. Officers rotate assignments, assume new and increasingly complex responsibilities with promotions, and generally have many domains (such as personnel management, counseling, budgeting, planning, and scheduling) which require mastery. The cognitive psychology the development of advanced expertise assures us that, through deliberate practice, virtually anyone can become "really good" at whatever domain they choose. However, it also informs us that domains are limited or restricted, that spontaneous transfer from one domain to another is rare, and that deliberate practice has requirements that cannot be supplanted or ignored. To the degree the Army supports deliberate practice for its officers, they can become very expert in their respective domains.

SELECTION STANDARDS

The original mobilization regulations for the OCS program prescribed no definite educational standards for officer candidates. In fact, over the course of the war, no formal educational requirement was ever specified for OCS applicants. War Department directives suggested that for certain technical schools—e.g., Engineer, Ordnance, and Finance—academic degrees would be desirable, but they were not considered to be essential. The educational standard was merely the possession of "such education or civil or military experience as will reasonably insure . . . satisfactory completion of the course."[17]

While regulations did not specify any educational standard for entry into OCS before 1942, there was a de facto requirement in effect at that time for candidates to have at least 2 years of college. That changed in mid-January 1942, when Secretary of War Stimson instituted a new open-door policy for qualified enlisted men who sought a commission. To effect this policy, the War Department replaced the requirement that candidates have at least 2 years of college with the Army General Classification Test (AGCT).[18]

Whereas before the war, line commissions had been virtually restricted to college graduates, Stimson's open-door policy permitted tens of thousands of non-degreed men to gain entry into the officer corps. The educational standard prescribed in Army regulations—which was, as already mentioned, merely the possession of "such education or civil or military experience as will reasonably insure . . . satisfactory completion of the course"—left a lot of room for interpretation.[19] As the mobilization progressed, the Army had to reach deeper and deeper into its pool of enlisted

talent to get OCS candidates. As one official history of the OCS program put it, Army Ground Forces (AGF) staff officers had to seek out "ways of squeezing the maximum number of graduates from the material at hand," despite the fact that the "supply of even poorly qualified candidates [was] none too abundant." As the war progressed, observers at AGF Headquarters noted a marked decline in the quality of new officer accessions.[20]

The War Department delegated the authority to select men who were to attend OCSs to designated commanding generals, who received quotas for the schools that fell under their command. These commanders in turn appointed boards of officers to interview applicants and recommend those best qualified for officer training. All selection boards were guided in their examination of applicants by standards laid down in War Department regulations and circulars. Although the details of these standards were altered from time to time to meet changing conditions, they always involved age, physical condition, military service, capacity for leadership, learning ability, citizenship, character, and education. Elaborating standards of learning ability, education, and leadership posed the greatest practical difficulties.[21]

Originally, applicants were to be judged primarily on the bases of leadership and fitness as demonstrated by their military service record. Months before the first OCS program opened on July 1, 1941, the Chief of Staff had announced that, "'The basic and predominating consideration governing selections to OCS,' would be 'outstanding qualities of leadership as demonstrated by actual services in the Army'."[22] Shortly after the mobilization began, however, the personnel research section of the adjutant general's (TAG) office observed

that this was an anomalous way of selecting officers and would inevitably result in a proliferating number of standards. Indeed, there would be as many standards as there were selection agencies.

Although the most important requirement for selection as an officer candidate was supposed to be proven leadership ability, no definition of leadership was ever provided by the War Department, and no test of leadership was ever devised. Each selection board was left to draw up its own specifications. Consequently, candidates chosen from different sources and at different times displayed the greatest variation in this respect. Other standards, such as age, physique, citizenship, and learning ability lent themselves to more precise measurement. When demands for candidates rose above the supply of men clearly qualified for training, it was the leadership requirement that was most frequently ignored. Thus, instead of getting men who had "demonstrated high qualities of leadership," the schools had to devote much time and effort clearing the rolls of men almost completely lacking in leadership ability.[23] In general, the requirements for admission to OCS were so loosely drawn that the schools were forced to develop their own means of eliminating men who should never have been selected.[24]

As mentioned previously, the Army decided to measure learning ability with the AGCT. Originally, the War Department had not intended to use AGCT scores in selecting candidates, but instead to develop an educational test and a leadership ability test for this purpose. The AGCT was decided upon only as a temporary expedient pending the completion of these other tests. Since only one of the projected tests was developed, however—and this test was not ready for

general use until early in 1945—the AGCT remained the principal instrument for selection throughout virtually the entire war.[25]

It was the personnel research section of the TAG's office that recommended that the AGCT be used to establish minimum standards with respect to the ability to learn. Pending the elaboration of some type of officer candidate test (OCT), it was urged that an AGCT score of 110 be set as the minimum requirement. The War Department had experimented with several tests for officer candidates prior to the ramp up of the OCS system. These tests were found to be accurate predicators of OCS performance but their emphasis on speed worked to the disadvantage of older applicants. The AGCT did not have this disadvantage. Because it was a fairly good predictor of OCS grades and because it was already a part of the enlisted man's record, it was adopted for use in June 1941 and incorporated into the War Department's directive governing OCS selection.[26] It remained in effect until February 1945.[27]

THE ARMY GENERAL CLASSIFICATION TEST (AGCT)

The minimum score of 110 was adopted, not for any objective reason, but because it would ensure that anyone selected for OCS would be from the top third of the selective service input in terms of mental ability. Administered to all inductees, this test purportedly measured the ability to learn. The AGCT gauged both a Soldier's native abilities and talents gained via schooling and social experience, which equated to "intelligence" in the popular and practical sense of the word. Numerical scores were grouped into five classes, with Class I representing the highest intelligence and Class

V the lowest. To qualify for OCS, a man was supposed to fall into Class I or II, although this standard was sometimes circumvented through waiver or artifice whenever the demand for more officers outpaced the supply.[28]

It was found that men with high AGCT scores were more likely to graduate from OCS than men with low scores. In two groups of classes at the Infantry School, AGCT scores and failures were correlated as follows.[29] See Table 5-1.

AGCT Score	Classes 253-281	Classes 329-338
110 or less	61.3	70
111-115	49.2	59
116-120	39.6	42
121-126	32.1	33
126-130	23.9	31
131-135	21.6	30
136-140	17.4	24
141 and over	18.4	21

Table 5-1. Percentage of Failures from Selected OCS Classes.

In the fall of 1942, it became standard practice at the Infantry School to administer the AGCT to all incoming candidates, even though their records showed that they had previously achieved a score of at least 110 on the test. The school was convinced that the test was often improperly administered in the field and that scores were being manipulated to get men into OCS. Although many men scored less than 110 on the retest, Army regulations prevented their relief before one-third of the course had been completed. Tactical officers and faculty boards watched such men closely,

and they were usually relieved from the school. Other schools administered AGCT retests only when they suspected the authenticity of a candidate's recorded score.[30]

Several schools developed screening tests designed to identify candidates whose educational qualifications were insufficient to enable them to complete the course or to perform satisfactorily as officers. As already noted, no general educational qualification was ever set by the War Department or by the AGF. In practice, the schools faced a difficult obstacle: many candidates lacked the educational background to cope with the material—especially the mathematics—of the courses. The Field Artillery School developed an Arithmetic Qualifying Examination designed to screen out men with too little mathematical ability. In the fall of 1942, the Infantry School adopted a basic education test, covering reading, grammar, spelling, geography, and arithmetic. This exam was given in the reception unit when the candidate arrived. Although the test was extremely simple, the number and type of errors made by candidates cast doubt on the ability of many men to extract meaning from field manuals, formulate and issue orders, conduct clear instruction, and solve the mathematical problems that a platoon leader would encounter. Deficiencies in arithmetic revealed by the test were so striking that a mathematical examination, called the Platoon Leader's Computations Test, was made a regular part of the Infantry OCS course in 1943. The Armored School encountered similar problems and, in 1942, adopted a basic education test embracing grammar, geography, and current events.[31]

By use of such tests, the schools protected themselves against extreme variability resulting primarily

from the absence of measures to eliminate unfit candidates at the outset. The schools were not permitted to relieve candidates merely on the basis of failure to pass an educational screening test. However, the adoption of such tests reflected a disposition to unload at the earliest opportunity men who could not pass them. Such candidates were watched more closely, and it was usually found that their subsequent performance squared with their low screening test scores. In effect, the same result was achieved as if candidates had been subjected to similar screening in units. Had this been done, the time and expense of sending educationally unqualified men to school might have been saved and greater uniformity achieved by the use of a single test prepared by experts.[32]

The progressive deterioration in the quality of officer candidates during 1942 had effects more far-reaching than the institution of the correctives discussed above. Because of the officer shortage, the prevailing theory of officer recruitment was modified to permit the commissioning of volunteers from deferred classes under Selective Service and of candidates regarded as suitable for the performance of administrative duties only. In this way, large demands for officers were more nearly met.[33]

The War Department's Inspector General (IG) put forward recommendations for major changes in the procedures used to select officer candidates in January 1943. The inspection of nine schools, of which five were in the combat arms, had led the IG to the conclusion that "during recent months, there has been a definite decline in the quality of candidates." He drew his conclusion from, among other things, the increasing percentage of failures and turn-backs. The IG noted that "a substantial portion" of failures and turn-backs

consisted of men whose AGCT scores were only a few points above the minimum; that the educational requirements were too low; and that many candidates were given no opportunity to develop and demonstrate leadership ability before they went to school.[34]

In view of these conditions, the IG recommended several methods of raising the quality of candidates and tightening the selection process. His main recommendation was to raise the minimum AGCT score to 115; this would, he believed, eliminate many of the most unfit candidates. In addition, he urged that (1) "Substantiating examinations [similar to West Point's validating examinations for entering cadets]" be prepared at each school to measure, in borderline cases, "the minimum adequacy of candidates' educational (or equivalent) background;" (2) all schools establish preparatory courses to give basic instruction to candidates who had had no basic training in the branch; and (3) commanders "take active steps" to ensure that potential candidates had ample opportunity to develop and demonstrate leadership qualities. Some of these measures had already been adopted at certain schools within the OCS system before the IG released his proposals.[35]

AGF opposed all the IG's recommendations. Raising the AGCT score requirement, in the collective opinion of the AGF headquarters staff, might eliminate many candidates with good leadership qualities but little education. School tests were considered unnecessary, not only because borderline cases could be rejected without further examinations, but also because such tests would place an additional administrative burden on the schools. Neither did AGF want preparatory schools for candidates lacking proper basic training. The number of men who would fall in

this category was not expected to be large enough to justify the time, expense, and overhead for such special training. Finally, putting more pressure on unit commanders to select candidates who had demonstrated leadership ability was thought unnecessary in view of the great reduction in the number of candidates that units were now required to furnish; the selection standards would be self-correcting under conditions of severe retrenchment.[36]

The minimum score on the AGCT was an issue that plagued the OCS program throughout the war. At various times (the episode with the IG described above being one of them), observers recommended that the minimum qualifying score for OCS be raised above the 110 mark. Studies conducted early in the mobilization period at the Finance and Signal Corps OCS, for example, showed that the score should be raised to 130. Those studies revealed that the OCS attrition rate of men who scored 130 or above was very small but that those who scored below 130 had larger, some considered unacceptably high, attrition rates. The recommendation was never adopted. Although there was "some justification" for raising the score to the higher mark, one War Department study commented, setting the bar at 130 would simply have screened out too many candidates, leaving the Army with gaping shortages in its officer ranks.[37]

THE OFFICER CANDIDATE TEST (OCT)

Late in the war, a substantiating or validating test of the type recommended by the War Department's IG was adopted. This substantiating test was, in its final form, the OCT, which certain scholars have erroneously asserted was adopted by the Army as early

as 1942. The test, originally dubbed the Army Officer Training Examination, had first been proposed in 1941. The instrument was created by the personnel research section of the TAG's office through a contract with the American Council on Education. This test, requiring over 4 hours to administer, contained subtests of comprehension, expression, reasoning, and current affairs. From an analysis of results, it was discovered that maximum prediction of academic course grades could be obtained by using a combination of three of the several subtests. Two forms of the experimental OCT were consequently constructed from three of the Army Officer Training Examination subtests.[38]

The one finally adopted was composed of three content areas: interpretation of data, arithmetic reasoning, and reading comprehension. They were found to be particularly useful for predicting OCS grades.[39] The Army gave the OCT on an experimental basis at the Tank Destroyer, Armored, and possibly other schools in late 1943. In addition, although the test was available for general use in July 1944, it did not see universal use until February 1945.[40] The OCT reportedly predicted academic performance at levels "equal to those of the best college entrance examination" up to 1955.[41]

ATTEMPTS TO MEASURE LEADERSHIP

As previously noted, the War Department realized that mental ability and academic aptitude were not enough to ensure a quality OCS product. A candidate's leadership ability was also important—more important, Army leaders believed, than mental ability. Over the course of the war, multiple attempts were made to develop instruments that could assess leadership

ability. One of the earliest of those attempts was the life history data form. To develop this form, the Army took entries from the Soldiers Qualification Card and correlated them with tactical officers' evaluations in OCS. The results were disappointing; none of the available measures provided enough discrimination for selection purposes. In 1942, the National Research Council Committee on Classification of Military Personnel recommended that projective measures (the Rorschach inkblot test and the Thematic Apperception Test) might provide fruitful leads for leadership prediction. These techniques were tried out at the Engineer School, but scores on these tests had virtually no relationship to leadership performance in OCS. Next, something called the Preference Inventory was tried. It was a paper-and-pencil test based on the idea that potential leaders could be identified by analyzing their activity preferences. The test contained 100 groups of 3 types of activities, each presumably preferred by the combat leader, by the administrative leader, or by the non-leader. It was tested at the Infantry and Engineer Schools and yielded discouraging results. Yet another approach to leadership prediction was the Leadership Test. This was a 150-item pencil-and-paper test consisting of statements expressing opinions about leaders, leadership techniques, attributes of leaders, and situations involving needs for leadership. This yielded no better results than the other tests.[42]

BATTLEFIELD COMMISSIONS

OCS was supplemented by another source of officer procurement—the so-called battlefield or combat commission. It was a form of direct commission awarded not for the possession of some technical or professional skill, but for performance in combat. It

was extensively used, but just how extensively, is an open question. Certainly, the number of combat commissions ran into the thousands but beyond that generalization, reliable numbers are lacking.

RESERVE OFFICERS' TRAINING CORPS (ROTC)

In the 3 years before the outbreak of war, 327 officers were appointed under the Thomason Act. Although the Thomason Act was to remain on the books until 1945, in actuality it became a dead letter before America's entry into the war. The last Thomason Act class was commissioned on July 1, 1940, at a time when the Army was looking toward OCSs to produce the bulk of newly commissioned officers in the event of war.[43]

With the outbreak of war and the rapid expansion of the Army, the need for additional officers mounted sharply. It was found that the combat readiness of those officers already in service left much to be desired. The question arose whether to expand ROTC or place even more emphasis on OCS. In February 1942, Lieutenant General Lesley J. McNair, shortly before assuming command of the AGF, gave his views on the question in an address to a graduating class at the Command and General Staff School. In that address, he reviewed the military training of the preceding year and a half accomplished under his supervision and observed that this training had not yet produced first-class combat troops.[44] He also noted that officers from the ROTC and the other civilian components, instead of being immediately ready to assist in the task of converting a mass of civilians into Soldiers, had themselves required a long period of further tactical training:

> The outstanding generalization of this experience [with ROTC graduates], in my view is that we did not have in fact the great mass of trained officers that were carried on the books . . . we have verified the inevitable—that inadequately trained officers cannot train troops effectively.[45]

Many of the college-educated officers that McNair criticized went on to become effective field grade officers during World War II. That fact would not have been relevant to McNair, whose focus was on producing competent, if intellectually limited, platoon leaders.

The AGF Command, which was responsible for many of the OCS programs, took the position that "the three months of intensive training undergone in an officer candidate school under war conditions is far superior to the full ROTC course." Because of the AGF's strong preference for OCS, the contemplated ROTC expansion was dropped and instead, beginning in the summer of 1942, men who had not completed the full ROTC course before leaving college were upon induction in the Army assigned to OCS and took the full OCS course.[46] McNair opposed a college training program on military grounds. He saw no particular reason why a college education would improve a Soldier's fighting ability.[47]

In January 1942, Secretary of War Stimson had directed that all qualified ROTC graduates be commissioned and called up immediately. To expedite matters, he even waived the standard requirement of a college degree for upperclassmen; ROTC cadets who had completed the military training portion of their studies could be accessed into the Army. By March 1942, some 93,000 ROTC graduates had been commissioned. They outnumbered Regular Army commissionees by a factor of 3 to 1. Although many general

officers, such as McNair, believed that OCS produced a better lieutenant than the ROTC, the latter program was never entirely eliminated. To be sure, the ROTC advanced course was suspended in September 1943 for the duration of the conflict, but a small basic course was maintained at various colleges around the country to facilitate reactivation of the ROTC program after the war. Moreover, the majority of ROTC cadets who were enrolled in the program at the beginning of the war either received their commissions or were afforded the chance to enter OCS upon graduation from college.[48]

Most ROTC cadets who earned baccalaureate degrees in 1942 received commissions directly. Second-year men in the accelerated class of 1944 were permitted to remain in ROTC until they graduated (for the most part before September 30, 1943) and then attend OCS. Only first-year ROTC men did not get preferential treatment; they had to compete for an OCS slot with the broad mass of men being inducted into the Army.[49]

In the ROTC classes that were commissioned before the program's suspension, the primary screen used to eliminate substandard candidates was the requirement to have at least a C average (or its equivalent) prior to entry into the Advanced Course. Interviews with military staff were also widely used to vet officer aspirants, although the interview process was not standardized. Considerable variability existed in how candidates were evaluated in these sessions, although one research effort provided a clue as to what evaluators might have been assessing. Research that compared performance on a test of physical fitness with an individual's rated performance in an interview generated this conclusion: "There was a remarkable close

relationship between the level of physical fitness and the evaluation made by the short interview; a score below average in physical fitness was not found in those men rated high in officer ability."[50]

SPECIALIST AND STAFF APPOINTMENTS

In the early part of the war, most noncombat officers, especially those slotted for technical posts, were commissioned directly from civilian life. From the beginning of hostilities, the Army needed more officers than could be procured quickly and economically through its OCS system. Men of varied training and experience in a wide range of skills and professions were needed. As early as October 16, 1940, just 1 month after the enactment of the Selective Service Law and the integration of the first National Guard units into the National Army, Secretary of War Henry L. Stimson wrote a memorandum to the Assistant Secretary of War, the Chief of Staff, and the Adjutant General, thereby establishing the basic policy regarding direct appointments from civilian life.[51] In that correspondence, Stimson observed:

> It is my recollection that during the last war, President Wilson and Secretary Baker rigidly declined to give combatant commissions to civilian applicants who had not qualified for such commissions by training in the Officers' Training Camps or through the Training Schools established in the Regular Army. It is also my recollection that this policy resulted in a standard of efficiency in our combatant officers appointed from civil life which was unprecedentedly high and that, consequently, the policy won general approval throughout the country. It is my desire that a similar standard should be maintained now, by commissioning only applicants who have received a similar thorough training. It is also my desire that so far as possible a similar standard should be

> maintained for appointments to commissions of a non-combatant character. It seems to me that in respect to such commissions, these limitations should be adhered to: First—No such commissions should be given to men who would otherwise be liable for service under the Draft, with the exception of those who have completed duly constituted courses leading to Reserve commissions. Second—All political or personal considerations should be rigidly excluded. Third—That commissions should only be given where the individual has special qualifications for the service he is expected to perform. Even in such cases there should be due consideration given as to whether there is a commissioned officer of any component branch of the army with suitable qualifications who is available for assignment. I can see that in the necessary expansion of the functions of the Army into lines which it does not exercise in times of peace, a number of commissions of such a special character may have to be made but I desire that the particular fitness of the applicant for the Service to which he is expected to be assigned should be most carefully inquired into.[52]

Comparatively few appointments directly from civilian life were made during 1940 and 1941. However, as the months went by it became obvious that the United States would eventually become a declared belligerent; therefore Congress, in an act approved September 22, 1941 (Public Law 252, 77th Congress), gave the President authority to make appointments in the AUS from the citizenship at large, without reference to the named components, and without making such appointments in any arm or service. Stimson issued another directive on the matter of commissioning qualified individuals directly from civilian life on January 12, 1942. The Secretary of War made it quite plain that, while recognizing the need of securing civilians possessing certain qualifications, he was determined to maintain the high standards set forth in

his memorandum of October 22, 1940. He established top-level procedures and appointed the Secretary of War's Personnel Board, headed by General Malin Craig, a former Chief of Staff, to oversee the effort. Craig had been called to active duty from retirement to head the board, which was responsible only to the Secretary himself. Stimson again ordered that political or personal considerations should be strictly excluded as factors influencing appointments.[53]

With the tremendous expansion of the Armed Forces, it soon became clear that direct commissions must be granted to fill other than overhead administrative positions. Men possessing a wide assortment of technical skills and experience were urgently needed not only in the combat arms, but also in the services. For example, the Judge Advocate General's Department needed Admiralty lawyers, and the Air Force needed contract negotiators, both of which were not readily obtainable through the normal process of induction and training in the OCS. Therefore, it became necessary to broaden the base of the procurement objectives and to set up a comprehensive list of categories from which personnel could be recruited for direct commissioning.[54]

Prior to November, 1942, both the officer procurement branch of the TAG's office and the Army Specialist Corps were actively procuring officers from civilian life; in addition to these two agencies, the Air Force and, in somewhat lesser measure, various other arms and services were carrying on active recruiting and procurement campaigns. Such active competition between Army agencies was confusing. Therefore, in October 1942, the Secretary of War appointed a board of officers to study the problem of procurement from civilian life. This board reported its findings on

October 14. Its report and recommendations served as the basis for three far-reaching decisions by the Secretary. These decisions were: (1) the abolition of the Army Specialist Corps; (2) the organization of a new service to be called the Officers' Procurement Service (OPS), which would serve all agencies of the War Department in procuring officers from civilian life; and (3) the re-designation of the War Department Personnel Board as the Secretary of War's Personnel Board, and the placing of responsibility for approving all civilian appointments in that board, acting as the Secretary of War's agent.[55]

The operation of the OPS throughout the war is described in detail in a special War Department monograph dated April 30, 1945, from which the information in this paragraph was taken. Under the OPS, the direct commissioning program was broadened to include procurement of medical personnel, which included not only physicians and nurses but technicians such as dieticians and physiotherapists as well. The OPS also tapped the recruiting potential of the Army Specialized Training Program (ASTP), which allowed many medical, technical, and scientific students whose studies had been interrupted by induction into the service to continue their academic work under Army auspices. From this source, the Army procured a number of doctors, dentists, engineers, and scientists who proved valuable to the war effort. The rate of procurement from civilian life increased rapidly throughout 1942 and 1943 until some 3,000 commissions a month (a wartime peak) were being granted by mid-1943. In July 1943, with the Army approaching its maximum planned strength in commissioned personnel, a directive was issued reducing the number of appointments being made from civilian

life. The requisitions of using agencies were to be more closely scrutinized, and every effort was to be made to secure persons possessing the required special skills from the several millions of men who had already been inducted into the armed services. Shortly after Victory in Europe Day, the OPS was abolished, except for one branch, and its functions turned over to the Adjutant General.[56]

APPOINTMENTS IN THE REGULAR ARMY

The Army modified its very rigorous procedures for screening candidates for Regular Army appointments after America's entry into the war. The qualifying examination described earlier in this chapter was dropped for all Regular Army candidates who were graduates of a recognized college, although candidates without a baccalaureate degree still had to take the qualifying exam. A group of approximately 240 officer candidates was appointed between October 5-7, 1942, under these watered-down standards. Army Regulation 605-8, the regulation governing Regular Army appointments, was suspended entirely in late 1942, in view of the difficulty of conducting examinations in an active theater of operations and pending the adoption of an officer accessions policy following the conclusion of the war. Actually, such appointments, except for a few officers of the Judge Advocate General's Department, were not resumed until the beginning of the post-World War II integration program, which was initiated early in 1946.[57]

From the end of the fiscal year (FY) 1941 until June 30, 1945, a total of 3,764 officers were appointed to all arms and services of the Regular Army; of this number, 2,584 were graduates of the U.S. Military Academy

(USMA), leaving 1,180 appointed from all other sources. A further breakdown of this 1,180 shows that 101 second lieutenants were appointed in the promotion list arms and services under the Thomason Act as amended; 105 were honor graduates of Senior ROTC units, leaving 440 appointed from all other sources. The provisions of Army Regulation 605-5 (*Appointment in Regular Army Except in Medical Department and Except Chaplains*), which provided for appointments to the Regular Army from sources other than the USMA, was suspended by War Department Circular 95 (dated April 7, 1943) until January 1, 1944.[58]

WEST POINT

West Point was able to maintain its rigorous system of mental screening during World War II. It was helped along by the patriotic fervor generated by the war and by the fact that the USMA represented a way to avoid conscription. One sign of West Point's continuing attractiveness was the large number of cadets who came or transferred from the nation's leading civilian universities. Despite the fact that the Corps of Cadets grew substantially during the war, the percentage of cadets from prestigious schools actually rose. From 1920 through the mid-1930s, the entering class at the Academy fluctuated between 350 to 450 cadets. Approximately 5 percent of those classes consisted of cadets who had previously matriculated at elite institutions. The Academy expanded in the late thirties and expanded again in 1942. By 1945, West Point was twice the size it had been in 1935. Nevertheless, West Point was more popular among the nation's most competitive undergraduates than ever before. In 1943, when West Point admitted a class of over 1,100

cadets—the largest class up until that time in the history of the Academy—7 percent of admitted cadets had matriculated at elite schools.[59]

The Academy continued to offer the Scholastic Aptitude Test (SAT) as an option to substantiate secondary school certificates. However, as in the late 1930s, only a very few candidates availed themselves of this method of qualifying. In 1942, 18 candidates took the test; of the 18, 13 qualified, and 7 were admitted. These numbers represented only a slight increase over those of previous years. Nevertheless, the Academy kept it as a testing alternative, still confident that it would become more popular in the future.[60]

Many changes took place at the Academy after the outbreak of war. Military training was intensified and broadened in scope to keep pace with the national war effort and to keep abreast of the recent developments in weapons and tactics. West Point began a program to give flight training to Air Cadets and to commission them with pilot ratings. The Academy also adopted a 3-year curriculum, a move that was directed by an act of Congress passed on October 1, 1942. It made the transition from the normal 4-year course of instruction to the 3-year course during academic year 1942-43.[61]

As already alluded to, the Academy experienced a major expansion during the war. On June 3, 1942, Congress enacted a law making a considerable increase in the authorized number of cadets at the Academy and in the manner of choosing some of them. The bill was entitled, "An Act to authorize an increase in the number of cadets at the Military Academy and provided for maintaining the Corps of Cadets at authorized strength." The act raised the authorized number of cadets at the Academy by 37 percent, from 1,960 to 2,496. The class entering the Academy in the summer

of 1943 was the largest in West Point's history up to that time. It numbered 1,117 cadets. To effect the actual increase in size of the Corps of Cadets, the legislation authorized the appointment of one additional cadet from each congressional district, territory, District of Columbia, Puerto Rico, and the Panama Canal Zone, and two from each State at Large. It also provided that the Secretary of War might bring the Corps of Cadets to full strength on the date of admission of a new class by appointing qualified alternates and candidates recommended by the Academic Board. The increase for each district was framed as a part of the nation's war effort, although the provision for maintaining the Corps at its authorized strength had been under consideration for many years. Coincident with the enactment of this law, provision was made for the nomination of a third alternate for each district.[62]

The Academy introduced a new screening requirement for the class entering in 1944—the West Point Aptitude Test. This class was the first class in which candidates with approved college certificates were required to pass a validating exam. (Candidates who submitted high school transcripts, it must be recalled, were first subjected to such a requirement in 1930.) Since it was the first year that the test was used, the Academic Board set a very low passing mark, and very few candidates were eliminated based on that test alone. However, it was clear that the test was very effective in identifying unqualified candidates for whom no other mental test was prescribed. In 1945, the Board raised the passing mark for this aptitude test, and Academy authorities decided that the test would become a permanent part of the admissions process.[63]

The class entering in 1944 was also the first in which "Army competitive candidates," which included candidates from the enlisted ranks, took advantage of the preparatory study provided by the War Department at civilian colleges as a part of the ASTP.[64] In the first years of the war, it was found that many enlisted men designated for the competition for appointment to the USMA were completely unprepared for the entrance examinations and were unable to qualify for admission through lack of time and opportunity for preliminary study. The West Point preparatory schools operated by the Corps Commands had been suspended at the outbreak of the conflict, and their resources were used to support the Army's training base. The director of the ATSP proposed to send Soldier appointees to selected colleges for a course, which would prepare them for the entrance examination. In essence, these colleges would act as substitute training facilities. The director's proposal was approved, and the War Department instituted for the incoming class of candidates a USMA preparatory branch of the ASTP at Amherst, Cornell, and Lafayette. Appointees who were in the military were transferred to these units where they pursued courses of study in preparation for the entrance examinations. With this move, the failure rate of enlisted candidates was lowered, and the number qualifying in the Army competitive group returned to normal.[65]

During the war, the USMA continued to experiment with the SAT as a way for candidates to substantiate their secondary school certificates. A ray of hope appeared in 1943 when 80 candidates elected to substantiate their high school certificates by this means—up from 18 in 1942. However, the number plunged back to 33 in 1944 and to 37 in 1945, and Academy

authorities again became discouraged about the use of this instrument.[66]

Another important change in the admissions process was in the form of the regular and validating examinations. The old form for the validating examination, consisting of Part I, made up of short-answer questions and Part II, made up of questions of the essay type, was adopted as the form for both the validating and the regular examinations. Candidates subject to the validating examinations were required to take Part I only, while those designated for the regular examination had to take both parts. This new form was deemed to have numerous advantages over the old form—administrative convenience and simplicity, it seems, being the major ones.[67]

For admission by certificate, a few changes were made in the credits required during the war years. In 1944, among the required subjects, one unit of U.S. history was substituted for two units of ancient, European, or English history. Among the optional subjects, the social sciences were extended to include problems of American democracy. Physical geography was replaced by geography of any nature, and the category of foreign languages was broadened to include all foreign languages.[68]

A significant alteration was made in the history requirements. History was eliminated from the regular examination for the competitive groups as well as for congressional appointees, but a special examination in U.S. history was provided, and those candidates whose educational records did not show successful study of that subject were required to take it. The results were used for qualifying purposes only, not for competitive purposes. The effect of this change was to eliminate the now little studied ancient history

from the history component of the old regular examination. It left the U.S. history examination, but only for those candidates who had not already qualified in that subject in school or college.[69]

CONCLUSION

The calculus of officer production for the Army changed fundamentally in World War II. The OCS program accounted for the bulk of new line officer accessions, while direct commissioning furnished the majority of officers for the professional and technical specialties. While entrance testing for the OCS program was more consistent and standardized than it had been in World War I, it was no more rigorous. With the outbreak of war, the War Department abandoned the criterion-referenced exams of the peacetime Army and adopted the AGCT as the principal officer testing instrument. It did so not because the AGCT was optimal for the task, but because nothing better was available at the time. It also set a minimum AGCT score of 110, not for any objective reason, but because a higher score would have been too restrictive and would have prevented the Army from meeting its wartime officer needs. As it was, the Army had to incorporate into its ranks thousands of officers whose mental abilities were below the desired standard.

The ROTC was suspended during the war as a commissioning source. A small rump program, consisting only of the ROTC basic course, was maintained to facilitate the reactivation of the program after the war. The Army chose OCS over ROTC as a wartime commissioning source because the latter program was perceived by Army leaders to produce more tactically skilled lieutenants than the ROTC program, which

produced educated and intelligent but tactically inept junior leaders.

West Point was able to maintain its quality standards during the war despite the expansion of the Corps of Cadets that had occurred between 1935 and 1945. Patriotic fervor, the promise of a free, elite education, and the fact that the USMA offered an exemption from conscription all played a part in keeping entrance standards high. The high percentage of cadets who attended elite colleges before being admitted to the USMA attested to West Point's continuing selectivity and attractiveness as an undergraduate institution.

Officer testing at West Point during the war did not undergo major changes. Perhaps the most significant tweak to the system occurred in 1944 when the Academy adopted the West Point Aptitude Test as part of the admissions process. Cadets who submitted college certificates in their application to the Academy had to take this substantiating exam to prove their readiness for the Academy's coursework. The Academy also tried to make greater use of the SAT for applicants submitting high school certificates with their application, although this experiment met with very limited success.

In the next chapter, we will take up officer testing during the post-war period—an era in which the peacetime officer accessions process was fundamentally transformed. The new era saw the emergence of the ROTC as the Army's largest commissioning source, the establishment of OCS as a permanent peacetime commissioning source, and the beginning of the demise of the USMA as an elite academic institution.

ENDNOTES - CHAPTER 5

1. L. P. D. Warren, *A History of Officer Procurement and the Development of the Officer Corps*, Washington, DC: Center of Military History, U.S. Army, March 1948, p. 222. When the Army began to mobilize in 1940 and 1941, the officer cadres were comprised of, in addition to the approximately 14,000 regulars, 18,000 National Guardsmen, and 80,000 from the Officers' Reserve Corps (ORC), which was provisioned principally by the Reserve Officers' Training Corps (ROTC) Program. Congress provided for the expansion of the officer corps through several pieces of legislation.

2. Army of the United States (AUS) officers refers to the officers appointed in the conscripted Army that fought in World War II. Unlike regular officers, these AUS officers held reserve commissions.

3. Joseph Rockis, *Procurement of Officers for AGF, 1 September 1945-10 March 1948*, Demobilization Series Study No. 9, Washington, DC: Historical Section, Army Field Forces, 1949, p. 2.

4. Leo W. Cather, "Training of Officers," Student Paper, Ft. Leavenworth, KS: Army War College, February 23, 1951, p. 2; Robert R. Palmer, Bell I. Wiley, and William R. Keast, *The Procurement and Training of Ground Combat Troops*, Washington, DC: U.S. Army Center of Military History, 1948, p. 38.

5. Historical Division, U.S. War Department, *History of Military Training, Officer Candidates Training, Army Service Forces*, Washington DC: U.S. War Department, May 24, 1946, p. 19. The OCS of the Air Corps could run for a maximum of 6 months.

6. Paul P. Coroneos, *Army Officer Procurement*, Montgomery, AL: Air Command and Staff College, Air University, 1968, p. 89.

7. Historical Division, U.S. War Department, p. 19. This regulation was in place in October 1940, when the Selective Service became operative.

8. Cather, p. 2. It was not adopted until July 1940 (in a revised form) and did not go into effect until a year later, July 1941.

9. Ibid. The length of the OCS course was approximately 3 months and graduates were commissioned as second lieutenants in the Officers' Reserve Corps (ORC) of the AUS.

10. Warren, p. 228.

11. Louis E. Keefer, *Scholars in Foxholes: The Story of the Army Specialized Training Program in World War II*, London: MacFarland and Company, Incorporated, 1988, p. 162.

12. Warren, p. 227.

13. Ibid., p. 103.

14. William R. Keast, *Training of Officer Candidates in AGF Special Training Schools*, Study No. 31, Washington, DC: Historical Section, Army Ground Forces, U.S. War Department, 1946, p. 53.

15. K. Anders Ericsson, "Deliberate Practice and Acquisition of Expert Performance: A General Overview," *Academic Emergency Medicine*, Vol. 15, Iss. 11, 2008, pp. 988-994; K. Anders Ericsson and Neil Charness, "Expert Performance: Its Structure and Acquisition," *American Psychologist*, Vol. 49, No. 8, 1994, pp. 725-747; K. Anders Ericsson and Paul Ward, "Capturing the Naturally Occurring Superior Performance of Experts in the Laboratory: Toward a Science of Expert and Exceptional Performance," *Current Directions in Psychological Science*, Vol. 16, Iss. 6, 2007, pp. 346-350; K. Anders Ericsson, Ralf Th. Krampe, and Clemens Tesch-Römer, "The Role of Deliberate Practice in the Acquisition of Expert Performance," *Psychological Review*, Vol. 100, No. 3, 1993, pp. 363-406; Michael J. A. Howe, Jane W. Davidson, and John A. Sloboda, "Innate talents: Reality or myth?" *Behavioral and Brain Sciences*, Vol. 21, No. 3, 1998, pp. 399-407; Paul Ward, Nicola J. Hodges, Janet L. Starkes, and Mark A. Williams, "The Road to Excellence: Deliberate Practice and the Development of Expertise," *High Ability Studies*, Vol. 18, Iss. 2, 2007, pp. 119-153; Paul Ward, Nicola J. Hodges, Mark A. Williams, and Janet L. Starkes, "Deliberate Practice and Expert Performance: Defining the Path to Excellence," in Nicola J. Hodges and Mark A. Williams, eds., *Skill Acquisition in Sport: Research, Theory and Practice*, New York: Routledge, 2004, pp. 231-258.

16. John R. Anderson, "Automaticity and the ACT Theory," *The American Journal of Psychology*, Vol. 105, No. 2, 1992, pp. 165-180.

17. Keast, p. 329.

18. Keefer, pp. 8-10.

19. As quoted in Robert R. Palmer, Bell I. Wiley, and William R. Keast, *The Procurement and Training of Ground Combat Troops*, Washington, DC: Center of Military History, U.S. Army, 2003, p. 329.

20. Ibid., p. 351.

21. Keast, p. 328.

22. Morris J. MacGregor, Jr., *Integration of the Armed Forces, 1940-1965*, Washington, DC: Center of Military History, U.S. Army, 1981, p. 48.

23. Ibid., p. 329.

24. Ibid.

25. Ibid., pp. 328-329.

26. Jack A. Parrish and Arthur J. Drucker, *Personnel Research for Officer Candidate School*, Personnel Research Branch Technical Research Report 1107, Washington, DC: Personnel Research and Procedures Division, Personnel Research Branch, the Adjutant General's Office, 1957, p. 13.

27. Historical Division, U.S. War Department, p. 19.

28. Forrest C. Pogue, *George C. Marshall: Ordeal and Hope, 1939-1942*, New York: Viking Press, 1974, pp. 97, 03; Keast, p. 6. The conflation of Army General Classification Test (AGCT) scores with concepts about intelligence quotient (IQ) or "mental age" was prohibited by the War Department.

29. Keast, p. 346.

30. Ibid., p. 351.

31. Ibid., pp. 351-352.

32. Ibid., p. 352.

33. Ibid., p. 356.

34. Ibid.

35. Ibid., p. 357.

36. Ibid.

37. Historical Division, U.S. War Department, p. 74.

38. Parrish and Drucker, p. 13.

39. Michael G. Rumsey, "Selecting Army Officers," in Peter F. Ramsberger, Nikki R. Wooten, and Michael G. Rumsey, eds., *A History of the Research Into Methods for Selecting and Classifying U.S. Army Personnel, 1917-2011*, Lewiston, NY: Edwin Mellen Press, 2012, p. 362.

40. Keast, p. 364.

41. Ibid.

42. Parrish and Drucker, pp. 13-14.

43. Rockis, p. 2.

44. Ibid.

45. Ibid.

46. Coroneos, p. 92.

47. Keefer, p. 33.

48. Ibid., p. 10.

49. Ibid.

50. Rumsey, in Ramsberger, Wooten, and Rumsey, eds., p. 349.

51. Ibid., p. 232.

52. Ibid., p. 233.

53. Ibid., p. 234.

54. Ibid.

55. Ibid., p. 235.

56. Ibid., pp. 236-237.

57. Rockis, pp. 2-3.

58. Warren, p. 223.

59. "Personal History Sheets," 1943, U.S. Military Academy (USMA) Archives.

60. USMA, *Annual Report of the Superintendent of the United States Military Academy*, Washington, DC: U.S. Government Printing Office, 1942, p. 21. Hereafter, all USMA annual reports referred to as the USMA, *Annual Report of the Superintendent* along with their corresponding year.

61. USMA, *Annual Report of the Superintendent*, 1943, p. 18.

62. U.S. Army Center of Military History, *Impact of Army Demobilization on West Point*, Washington, DC: U.S. Army Center of Military History, July 25, 1990, p. B-2; see also USMA, *Annual Report of the Superintendent*, 1942; USMA, *Annual Report of the Superintendent*, 1943. In actuality, Section 2 of the law passed on June 3, 1942, raised the number admitted even higher than the 2,496 specified. It provided that vacancies left on the date of admission might be filled by the Secretary of War to bring the Corps to full strength by appointing qualified alternates and candidates recommended by the Academic Board, two-thirds of these appointees to be from qualified alternates and one-third from qualified candidates.

63. USMA, *Annual Report of the Superintendent*, 1945, p. 28.

64. The Army specialized training program (ASTP) was a military training and education program created by the Army in World War II to meet wartime demands for officers and Soldiers

with technical and other critical skills. It was offered in more than 450 colleges, universities, and technical schools across the nation. Engineering, foreign languages, and medicine were its specialties.

65. USMA, *Annual Report of the Superintendent*, 1943, p. 17; USMA, *Annual Report of the Superintendent*, 1945, p. 34.

66. USMA, *Annual Report of the Superintendent*, 1944, p. 8; USMA, *Annual Report of the Superintendent*, 1945, p. 9.

67. USMA, *Annual Report of the Superintendent*, 1944, p. 64.

68. Ibid.

69. Ibid.

CHAPTER 6:
OFFICER ACCESSIONS AFTER WORLD WAR II

INTRODUCTION

World War II transformed the Army, and nowhere was this more evident than in the officer corps. One of the most striking changes that took place among Army officers was the drop off in the percentage of college graduates. As in World War I, World War II had opened up the officer corps to huge numbers of non-degreed candidates, many of whom wanted to continue their service after Victory over Japan Day. A percentage of these men got their wish, and they were retained in an active Army that was much larger than it had been before hostilities commenced. The result was an officers corps that was, in an educational sense, very unlike the one of the interwar period. Before the war, over 75 percent of the officer corps had baccalaureate degrees. By 1955, only 55 percent did. The dearth of educational credentials was most prevalent in the field grade ranks, particularly among majors and lieutenant colonels.[1]

The Army was able to maintain its authorized officer strength in the post-war years largely because of the huge influx of non-degreed officers during the war. While most officers in this category separated soon after the war was over, thousands were retained in a career status. The post-war officer corps was, after all, about eight times larger than its interwar predecessor, and the Army needed to quickly flesh out its officer ranks. The injection of these non-college graduates into the officer corps created a 5-year hump of excessive strength and reduced the number of spaces

available for lieutenants and captains. The number of junior officers was further diminished by the continual cutting of new accessions to bring the Army into alignment with rapidly declining end strengths and by the abysmally low retention rates of Reserve Officers' Training Corps (ROTC) graduates, most of whom served on active duty for 2 years or less. As a result, the officer corps suffered from a severe rank imbalance. Throughout most of the 1940s and 1950s, it had many more senior and far fewer junior officers than required.[2]

The dynamics of officer accessions changed drastically in the post-war period. After dominating the accessions process for a century and a half, West Point lost its quantitative preeminence as a commissioning source. The vast size of the Cold War defense establishment, of course, was the reason why. West Point was now too expensive to be the Army's main supplier of officers; it also lacked the physical space in terms of classrooms and barracks. The ROTC had to take up the slack. By the mid-1950s, ROTC was producing more regular officers than the U.S. Military Academy (USMA) and was responsible for more than 80 percent of total annual officer accessions. Meanwhile, Officer Candidate School (OCS), drastically cut back after World War II and confined to one branch immaterial site at Leavenworth, was revived in 1951 due to demand stemming from the Korean conflict. After Korea, Army personnel managers decided to keep the program in operation to facilitate its regeneration in case of an emergency. In the early 1950s, then, OCS became a permanent part of the commissioning mix, producing between 6 and 10 percent of all active officer accessions until the Vietnam War.[3]

The ability of the Army to screen candidates for commissioning dropped markedly after World War II as the attractiveness of an Army career plummeted. The erosion of pay and benefits, the presence of many low quality officers left over from the war, a booming economy, and the declining prestige of the military profession made military service a relatively uninviting option for the talented college graduate. This was particularly true in the late 1940s when the Army went through its traditional post-war slump, which, to quote the *Annual Report of the Superintendent* for 1953, was a period characterized by "a natural falling off of interest [in a military career] as a reaction to the cessation of hostilities."[4] The calculus of officer accessions now was very different than it had been in the interwar period. Then, the Army had a small officer corps and a surfeit of college graduate applicants and was able to exercise great discretion in its selection process. Officers were obtained on a competitive, selective basis from what one colonel described as "a higher caliber group in our society." After 1945, however, the Army had a huge officer corps and fewer applicants than desired. The competition for the available positions was consequently not keen. Those that the Army did attract, moreover, were as a group not drawn from the nation's most capable undergraduates. Screening, by necessity, had to be less rigorous than it had been before the war.[5]

Even West Point, which had historically been considered the Army's gold standard for commissioning, struggled to fill its cadet corps with qualified applicants. Admissions standards were intermittently lowered to secure enough students. There were several years in the decade after 1945, in fact, in which USMA authorities had to invoke special provisions of the law

to appoint cadets to vacancies that had gone unfilled because of the absence of a sufficient number of qualified candidates through the normal appointment system.[6]

The nature of commissioned service likewise changed in the post-war era. During the interwar period, readiness was not a huge priority. America's geographic isolation and non-interventionist foreign policy allowed officers time to study, and reflect on, their profession. In this environment, officers were given challenging tasks and allowed to work semi-autonomously with minimal supervision by senior officers. They were trained for, and expected to fill, positions two levels up from those associated with their existing rank. Only in this way could the Army be expanded quickly and efficiently in the event of mobilization. The escalation of international tensions brought on by the Cold War, together with the consequent enlargement of the Army in the post-war era, changed all this. The officer corps morphed from a relatively homogenous body in the interwar period into a large, diverse, and transient collection of individuals after 1945. The new urgency and constant state of tension that the Cold War brought to military life also drove the Army toward centralization of command and control. Training became rigidly controlled by detailed directives and schedules from higher headquarters. Junior officers were held on very short leashes and not allowed to exercise judgment or initiative in their work.[7]

Because units now, with the constant threat of war, had to maintain a high state of readiness, not even routine matters could be left to chance. Junior officers were required to attend to many housekeeping chores that had been left to corporals and sergeants in the

interwar years. The deleterious effects of centralization and over-supervision were compounded by overwork—another outgrowth of the perpetual state of urgency occasioned by the operational demands of the Cold War. Young officers found themselves working 50, 60, or even 70 hour weeks, sacrificing their family life for the sake of their menial and oftentimes unnecessary duties.[8]

Pre-commissioning education and training likewise were transformed. Before World War II, West Point, and to a certain extent ROTC, had what might be called, for lack of a better term, "a field grade focus." The Army's pre-commissioning emphasis was not on turning out an immediately employable lieutenant but on producing an educated officer and a gentleman who could one day assume the mantle of field grade leadership in a mobilizing army. There was enough time to train lieutenants on the technical and tactical aspects of being a junior officer once they arrived in their first unit of assignment.

After the war, the Army could not afford to be as patient with the development of its officers. The Cold War, and the new sense of urgency that infused service in the Army, called for the production of immediately useful lieutenants. Lieutenants were now expected to report to their first units of assignment with the tactical and technical skills necessary to be a contributing member of the team. That did not always (or even usually) happen but that was the hope and the goal. Consequently, the educational aspects of the curriculum were reduced but the training aspects were expanded. Readiness now trumped long-term officer development in the hierarchy of Army priorities.

THE RESERVE OFFICERS' TRAINING CORPS (ROTC)

The ROTC, now the Army's largest commissioning source, found it difficult to enroll top notch students in the aftermath of World War II. One U.S. Army War College (USAWC) student noted that the Army's collegiate commissioning program was filled with lower caliber individuals despite the fact that all were college undergraduates. Problems surfaced soon after Victory over Japan Day. At that time, the Army took note of the high rate of academic failures among ROTC cadets. Too many students were being trained in ROTC and subsequently dismissed because they did not complete the minimum requirements for a baccalaureate degree. Concerned about this trend, the General Staff in May 1946 directed the adjutant general (TAG) to devise a test that would screen out those undergraduates who did not possess the ability to attain a college degree.[9]

Responding to this directive, TAG developed the first forms of the ROTC Qualifying (RQ) Examination, designated RQ-l and RQ-2. This RQ exam was implemented in 1947. These forms were norm-based examinations as opposed to criterion-referenced tests of the type used to select officers in the interwar period. The RQ tests were patterned after the American Council on Education Psychological Examination for College Freshmen, an instrument widely used at that time as a general ability screening test in colleges and universities. These tests and their successors were much less rigorous than the tests they replaced. Nevertheless, they addressed a need. Validation studies of these early RQ exams indicated that the verbal and mathematics subtests were sufficiently correlated with

academic performance in college to justify their use in screening Military Science (MS) III students. The next version of the RQ exam—the RQ-3 test—was shortened for administrative purposes so that it could be completed in one class period. This test consisted of verbal and mathematics subtests and made its appearance in 1949.[10]

Within months of the introduction of the RQ-3 test, however, it was suspended because it was screening too many candidates out of the ROTC program and preventing the Army from achieving its officer production goals. The inception of the Air Force ROTC and the expansion of the Naval ROTC had intensified competition for qualified officer candidates among the services. Faced with this competition and other problems, the Army struggled to find qualified candidates for its collegiate commissioning program. Army leaders felt that they had no choice but to sacrifice quality for quantity and adopt less stringent screening methods.[11]

The growth of ROTC during the Korean War further diluted officer quality, at least indirectly. This growth was fueled by two main factors. First, the draft deferment that ROTC participation conferred upon military age youth motivated many undergraduates to enroll in the program. If students could not evade service, they could at least delay it. Second, the Army embarked upon a major institutional expansion of ROTC to meet the needs of the war. ROTC units were eagerly sought after by college presidents, who saw them as a way to maintain their institutions' enrollments and financial solvency. The growth of ROTC, the motivating effects of conscription, and the suspension of the RQ-3 qualification test worked together to drive officer production well above the needs of the

active Army. Hundreds of officers who entered the service during this period were essentially unscreened and minimally qualified. Many could not meet the minimum mental standards required for admission into OCS. Complaints from the field soon arose alleging that even Distinguished Military Graduates, supposedly the cream of the ROTC crop, were, as a group, substandard officer material.[12]

Concerned about this perceived drop-off in officer quality, the Army administered the RQ-3 examination to all attendees at the 1953 ROTC summer camps. The results were startling: 20 percent of the cadets failed the test. From this and other indicators, senior Army leaders concluded that during the recent expansion units had been given to colleges whose students did not in the main have the potential to become officers. The schools with the highest failure rates were "in nearly every case" open admission—they required only a high school diploma for matriculation. It was noted that many of these open admission colleges were located in the South and drew their student population from small high schools with uneven standards. The academic demands placed on students attending these colleges had been "correspondingly low."[13]

As a result, on September 18, 1953, (almost as soon as the Armistice ending hostilities in Korea was signed) the Department of the Army directed that all ROTC students must attain a score of 115 on the RQ-3 test to be admitted into the ROTC Advanced Course. The requirement for a mental screen was thus reintroduced after a 3-year suspension. There was general agreement that this move had a desirable effect. The requirement helped ensure a minimum mental capability in officer aspirants regardless of the standards of the college that they attended (although, as with

all Army mental standards, waivers were sometimes granted for scores below 115). Still, the Army was not satisfied with the intellectual quality of the product that ROTC was turning out. The reinstatement of the RQ-3 had reduced the worst abuses but it did not reverse the post-war trend that saw the top performers of America's undergraduates generally avoid military service, particularly service in the ground forces.[14]

NON-COGNITIVE TESTING

Over the course of the 1950s, the Army adjusted and refined the screening instruments used in the ROTC program. With readiness now top priority, the Army focused on identifying candidates with the requisite "combat leadership skills" needed at the platoon level. Whereas before World War II, officer tests were primarily aimed at measuring a candidate's level of academic attainment and general intelligence, in the post-war era the emphasis in research efforts shifted to measures designed to identify technically and tactically competent junior leaders with the requisite leadership skills to lead small bodies of men— junior leaders who would perform many of the tasks and have many of the responsibilities that non-commissioned officers (NCOs) did in the interwar era.[15]

Many of the instruments introduced to screen officer aspirants during this era had both cognitive and non-cognitive components. The cognitive portions of these instruments were a far cry from the tests of academic achievement which dominated the screening process in the 1920s and 1930s. One instrument introduced in the late 1950s, for example, included the following situational tests: (1) inspect vehicles for combat readiness; (2) correct poor supply records; (3)

check for bugs in communications network display; (4) reschedule work assignments of ordnance repairmen; (5) report on road damage; (6) evaluate a captured foreign weapon; (7) select new route for supply points; (8) measure the length of an airplane runway; and (9) report enemy activities. In the interwar Army, such tasks were taught in the Army school system after commissioning or in the officer's first unit of assignment.[16]

The Army introduced a number of non-cognitive assessment instruments to predict the leadership ability and measure the career motivation of ROTC cadets. The lack of leadership ability and career commitment were criticisms often directed at ROTC-produced officers. On many campuses, ROTC cadets did not get the tactical training necessary to prepare them to assume platoon leaders' responsibilities once commissioned. Their lack of basic tactical skill was often evident when ROTC graduates reported to their first unit of assignment. Retention was also a huge problem among ROTC graduates. During the post-war period, 80 to 90 percent of ROTC officers remained in the Army for 2 years or less. Non-cognitive tests could help the Army identify officer candidates who were prepared for military service and likely to remain in the Army for a career.[17]

The first non-cognitive instrument introduced was named the ROTC Personal Inventory. It came into general use shortly after Victory over Japan Day. The inventory was a self-description instrument designed to assess characteristics deemed important for leadership. It addressed personal history, personality, and background.[18] It remained in use until the early 1950s.

In the mid-1950s, the Officer Prediction Program was adopted in response to continuing concerns with

junior officer retention and a widespread perception that ROTC selection procedures were not very effective in assessing leadership potential, particularly combat leadership potential. The Army convened several review boards to deal with these concerns. The boards determined that existing officer selection methods in ROTC (and in the other commissioning sources for that matter) were relatively ineffective as identifiers of combat leaders and were in need of considerable revamping.[19]

The Officer Prediction Program represented a response to the Army's concerns about officer leadership and retention and sparked an effort, which lasted for more than a decade. The program led to the development of an instrument that encompassed a range of cognitive and non-cognitive measures. It was administered in an assessment center and consisted of integrated military assessments given over a 3-day period.[20] One of the instruments used in the program was the Differential Officer Battery (DOB). The DOB encompassed biographical and self-description instruments that assessed "background, interests, and attitudes." Factors measured in the DOB included (but were not limited to): (1) mechanical technology (mechanical orientation, manual crafts interest, practical skills orientation, etc.); (2) combat leadership (outdoor skill, combat interest, physical leadership, and nature endurance); (3) general knowledge (entertainment information, practical skills information, supply information, technical operations information); (4) outdoor information (rural versus urban background, outdoor interest, frontiersman orientation); (5) sports (athletic interest, sports interest, organized sports information); (6) strict command (strict combat discipline, "taut ship" command, command responsibility);

(7) leadership readiness (ready decision-making, readiness to lead, resistance to mediator role); and (8) authority and structure (concern for order, achievement need). Physical performance measures were also incorporated into the DOB: the grenade throw, the endurance crawl, and two-hand coordination were thought to be good predictors of combat leadership performance.[21]

The DOB and other instruments like it represented a major discontinuity in officer testing in the U.S. Army. While before World War II, the criterion-referenced cognitive tests used by the Army had concentrated on identifying officers who could one day become operational planners and strategic thinkers, in the post-war era the emphasis in officer testing was geared toward identifying junior leaders who could be useful immediately upon commissioning and function effectively at the platoon and company level. It is telling that the social scientists who developed and assessed these instruments used performance data gathered from the first 8 years of an officer's service—years spent leading at the platoon and company level—for their assessments of the effectiveness of their instruments, not on performance data from field grade officers. In an Army focused on readiness, this was understandable if rather shortsighted.[22]

Competencies

It is often difficult to speak intelligently on the subject of competencies because the word, as a term, unfortunately does not have a generally accepted meaning. Terrence Hoffman reviews the meaning and history of the term and identifies three qualitatively different definitions: observable performance; the standard or quality of the outcome of a person's performance; or the underlying attributes of a person. He states that:

> With more than one meaning being used by practitioners and writers, any discussion of competency invariably leads to some misunderstanding or disagreement because the same meaning is not shared between participants in the discussion. The term competency must be used in a way that reflects the purpose or rationale of its application. Equivocation in the use of the term serves no purpose. It invites misunderstanding and imprecision. Such misunderstanding undermines the introduction of any attempt at either performance improvement or change management.[23]

We've included this lengthy quote because of the importance of the last sentence. Army officers are heavily involved in improving individual and unit performance as well as managing change in reliably fluid environments. To the degree they deal with competencies, they (and everyone else) should have an agreed upon understanding of the basic meaning of the term.

From a purely psychological perspective, the second definition listed by Hoffman is perhaps to be preferred as the first and third already have terms associated with them (e.g., behavior, ability, capability, aptitude, intelligence, skill set, etc.).[24] Richard Boyatzis, although preferring to define competency as a capability or ability (indeed, it was his 1982 book *The Competent Manager* that led to the popularization of the term along these lines), asserts that the whole basis for the concept is a "theory of performance" in which a person's "maximum performance is believed to occur when the person's capability or talent is consistent with the needs of the job demands and the organizational environment."[25] An implication of this assertion is that the organization needs to understand and explicate job demands and the working environment.[26] Given this review, Charles Woodruffe's definition might be the most useful: "A competency is the set of behavior patterns that the incumbent needs to bring to a position in order to perform its tasks and functions with competence."[27] This is very useful because it "marries" the individual and the organizational elements together and also makes reference to acceptable standards of performance (competence).

The Army has no officer equivalent of military occupational specialty (MOS) for enlistees. (The area of concentration, is only very weakly comparable.) The MOS, and the associated duty description is very specific, exact, and detailed. For example, there are 32 11B/

Infantryman Non-Commissioned Officer Evaluation Report (NCO-ER) duty descriptions (such as 11B20/Team Leader, 11BX/Senior Drill Sergeant, and 11B Grenadier). The way they are written allows for accurate matching of individuals and assignments. For officers, however, there is far less specialization within a particular branch upon first assignment; that is, there is little attempt made to match personal characteristics, abilities, and traits (as would be shown from surveying and testing) with job requirements. In other words, there is little attention paid to competencies, and these have a demonstrable effect on organizational performance.[28]

OFFICER CANDIDATE SCHOOL (OCS)

The OCS program faced the same pressures as the ROTC during this period, although its challenges obviously differed in some respects. One of the most salient challenges was OCS attrition. Throughout the 1950s, OCS had a very high average dropout rate of 44 percent. By comparison, the average rate during World War II was 33 percent. Some observers blamed inadequate screening and selection mechanisms for the high attrition. Others pointed to the irregular nature of the OCS selection process. Service on OCS selection boards was an additional duty for most officers and was generally considered by them to be a distraction from their principal responsibilities. There was no real payoff for a job well done. Consequently, screening for motivation and suitability was often hasty and haphazard.[29]

Screening for mental ability was more systematic. OCS applicants were supposed to attain a score of 115 on the Officer Candidate Test (OCT) for admission to the program, although waivers were granted in some cases for candidates who scored below that mark.[30] Thus, the OCS intellectual screening process

from 1950-53 was, in some respects, more rigorous than for ROTC, which did not use a test of mental ability during these years. Observers found a close correlation between OCT scores and OCS attrition rates, as individuals scoring below 115 failed the course in disproportionately high numbers. The best candidates scored between 126 and 155. Authorities were reluctant to raise the minimum score, however, because (once again) they recognized that it would result in an unacceptable reduction in the number of eligible candidates.[31]

The educational requirements for acceptance into OCS were minimal. To be admitted, applicants needed only a high school diploma or a general educational development (GED) certificate. Many Army leaders believed such a low educational standard resulted in a number of untoward effects. First, it lowered graduation rates at OCS; researchers found that there was a high correlation between success in the program and level of education. Second, it was a significant handicap to those marginally educated officers when they entered the field grade ranks. They found it difficult to deal with subordinates with better educations. Third, it had a deleterious effect on the quality of the officer corps as a whole. The example set by these minimally educated officers supposedly discouraged the most capable lieutenants and junior captains from staying in the service.[32]

There was some pushback among researchers on the basic premise that more education generally resulted in a higher quality officer. On the eve of the Korean War, the Army, as it had at the beginning of World War II, was giving extra credit in the selection process to OCS applicants who had 2 or more years of college. This gave the college-educated applicant a

distinct advantage over his less educated competitors. Since colleges varied considerably in their standards, and college students varied even more with regard to intellectual abilities considered desirable for officers, this policy allegedly resulted in the rejection of many potentially good officers and the acceptance of many relatively poor risks. The recommended solution was to eliminate extra credit for college experience in the selection process and so weight the OCT scores that applicants with the highest marks, regardless of educational background, would be given a substantial advantage.[33] This recommendation was not accepted, however.

One of the persistent problems faced by the Army in the 1940s and 1950s was its inability to convince large numbers of men to apply for officer candidate training. While OCS was expanding in World War II, the demands of troop units being activated outran the supply of inductees. Serious shortages of enlisted personnel ensued. Procurement of officer candidates in the requisite numbers was, therefore, difficult in the extreme. The Army Ground Forces (AGF) felt that the trouble lay in the reluctance of unit commanders to send key men to OCS. That headquarters, therefore, imposed OCS quotas on all units, practically eliminating the voluntary nature of the program. The requisite quantity of officers was produced but only with difficulty and the use of rather severe methods.[34]

During the Korean War, the lack of qualified applicants for the OCS program again became a huge problem. In 1952, OCS even failed to meet its officer production quota. The next year, the Army, seeking ways to alleviate OCS problems, conducted a study that found that less than a third of the men eligible for the program actually applied. After the war in Korea

ended, things deteriorated further. Throughout the remainder of the 1950s, in fact, only 10 percent of eligible Soldiers applied for OCS. Many draftees were not career motivated and looked upon OCS as a waste of their time. This was a major concern for Army leaders since they were convinced that the quality of officers produced depended primarily on the degree of selectivity that could be exercised in the choice of applicants. There was, in other words, a certain quality in quantity in their opinion.[35]

The three biggest deterrents to OCS participation, the Army found, were (1) the longer period of duty required of officers (as compared to enlisted men), (2) a belief that OCS entailed a greater likelihood of recall after separation from active duty, and (3) a reluctance to assume responsibilities (since most had no intention of staying in the service to retirement). The first deterrent listed—the longer period of obligated service—was perhaps the most important one. The more ambitious and educated enlisted men, the Army found, generally had attractive employment opportunities in the civilian world awaiting them and consequently wanted to sever their connection with the Army as soon as they could.[36]

With enlisted accessions into the officer corps, the differences between the interwar and post-war periods were stark. As had occurred with accessions from civil life/ROTC, the rigorous criterion-referenced screening tests of the 1920s and 1930s gave way to the much less difficult norm-based exams of the late 1940s and 1950s. Again, the selection measures developed in the post-war era may have been more broad-based, consistent, and standardized than the pre-war ones, but they were also much less intellectually and academically rigorous.

NON-COGNITIVE TESTING

Non-cognitive instruments came into widespread use in the OCS program after World War II for many of the same reasons they had in ROTC. Through these instruments, the Army wanted to screen for junior level leadership ability, motivation to complete OCS, and career intent. Four major avenues of development were pursued; the interview, supervisor ratings, recommendations from civilian acquaintances, and the biographical self-report.[37]

The first version of the biographical self-report was introduced in 1946. Named the Biographical Information Blank (BIB), it was in use until 1956, when it was replaced with a new instrument, the Officer Leadership Qualification Inventory (OLI). After reviewing the results of studies that showed that the BIB's effectiveness as a predictor of leadership ability had eroded, items were added from other instruments that had been determined to be better predictors of leadership. Instruments in use at West Point and in the ROTC program furnished some of these new items.[38]

The Army combined the new items with the ones considered to be the most effective from the BIB to create the OLI. Like its predecessor, the OLI was a self-description questionnaire that encompassed interests, self-evaluations, and an annoyance scale, meant to evaluate the extent to which the candidate was annoyed by others and by certain situations. This battery was determined to be quite effective in identifying traits associated with leadership at the platoon level and retention in OCS.[39]

WEST POINT

Even West Point began to struggle to fill its cadet corps with qualified applicants in the post-war era. The number of cadet vacancies increased significantly after the war. In the decade and a half following World War II, USMA authorities had repeatedly attempted to invoke special provisions of the law to appoint cadets to vacancies that had gone unfilled because of the absence of a sufficient number of qualified candidates through the normal appointment system. This happened, for example, in 1947, a year in which less than half of the number of candidates who might have taken the entrance examinations actually reported to the examination centers. The large number of unfilled vacancies was attributed to the failure of the appointing authorities either to designate a full quota of candidates or to select bona fide candidates of serious intent. There was, it was noted, a rather close parallel between what happened in 1947 and what occurred after World War I. In both instances, the dramatic drop-off in enrollment was largely a result of "a natural falling off of interest in the Military Academy as a reaction to the cessation of hostilities."[40]

There was some improvement in 1948, but it was limited. In 1947, the vacancy fill rate was 60 percent; in 1948, it was still only 73 percent. Moreover, again, special provisions of the law had to be invoked to get to that mark.[41] Academy authorities thought they had turned the corner in 1949, when 80 percent of all vacancies were filled. The superintendent crowed about "the return to the normal peace-time attractiveness of cadetships, to be expected after the usual post-war decline."[42] His celebration proved to be premature. By 1954, the vacancy fill rate had dropped back to 67

percent and, again, the Academy had to invoke the special "Section 4" legislation to get to this number.[43] The early 1960s found the Academy still struggling to make its commissioning goals.[44]

The struggles described above coincided with a period of great change at the Academy. The tendency has been for historians to link the Academy's struggles to the Vietnam era, when various external forces were in play that diminished the attractiveness of an Army career and a West Point degree. In many respects, however, the real period of change came well before the advent of the Vietnam War. For it was in the late 1940s and 1950s that West Point began to lose its claim on being a premier undergraduate institution (in terms of the quality of its student body; its faculty had not been particularly notable since the first half of the 19th century). It was also during this era that West Point began to change socioeconomically and religiously. West Point lost its upper middle-class flavor as more and more young men from the working classes gained admission, and followers of mainline Protestant religions were increasingly displaced by Evangelicals and Catholics.[45]

This socioeconomic and religious transformation of West Point attracted the attention of scholars. Both the noted military sociologist Morris Janowitz and the noted historian Peter Karsten wrote about how Catholics had been slow to incorporate into the officer corps in the 19th and 20th centuries, and the growing Catholic footprint at the Academy after World War II. The "lag [of Catholics into West Point and the officer corps] had been considerable," wrote Janowitz, and its reasons a matter of "deep complexity."[46] Karsten opined that this "lag" was due in part to the fact that entrance into the Academy "was very much a function

of a family's economic status, and well into the twentieth century high socioeconomic status [SES] was not a characteristic of many Catholics."[47] Prior to World War II, he noted, most Catholic immigrant groups trailed behind Protestant America in educational attainment and on the scale of occupational prestige. A relatively low percentage of Catholic youth could qualify for admission into a selective institution of higher learning, such as the USMA. After 1945, the level of educational attainment and the average family income in the Roman Catholic community began to rise while the prestige of the military profession and admissions standards at West Point began to fall. Catholics consequently entered the Academy in unprecedented numbers.[48] As we shall see, these socioeconomic and religious trends would continue to affect the officer corps and the Academy in future years.

ADMISSIONS TESTING

Immediately after the war, West Point continued to operate under the admissions guidelines that it had before the war as far as mental testing was concerned. The recently introduced West Point Aptitude Test for validating college certificates had proved its validity and continued to be used to screen out unfit candidates.[49] However, in 1946, the Academy approached the College Entrance Examination Board (CEEB) and asked if the Board could undertake the entire work of preparing, scoring, and reporting upon all entrance examinations. The superintendent had previously directed the Admissions Committee to study and report upon the project. It was found to be very desirable and entirely feasible. The superintendent relayed the committee's report to the War Department with

a recommendation for its adoption. The plan would not result in any change in the nature or method of conducting entrance tests, but would merely have the questions on the exam made up and graded by the CEEB instead of by officers at the USMA.[50] West Point, in other words, was taking its first tentative steps toward adopting the norm-based tests that many of colleges in the country had already gone to by this time.[51]

The actual practice of using CEEB tests in the admissions process began in 1947. The first iteration of this new procedure was deemed to be "satisfactory in every way." It was then decided to continue with the CEEB designed test in the future. The rigor of entrance testing might have been reduced but the administrative simplicity of the CEEB exam was a huge selling point.[52] In 1948, the Educational Testing Service (which had taken over the functions of the CEEB) recommended two changes to the Academy's admissions program, both of which were approved by the Academic Board. One change eliminated the essay portion of the American history examination, thereby reducing the time required for this test from 3 hours to 1.5 hours, and putting it on a par with the other examinations, all of which were of the objective type. The second change increased the time allotted for the West Point Aptitude Test from 1 hour to 2.5 hours. Since this test was the only mental examination required of all candidates and the only measure common to the entire group, the Educational Testing Service believed the hour and a half gained from shortening the American history examination should be used for testing additional areas of candidates' mental powers, thus providing data that could eventually contribute to the construction of better entrance tests.[53]

The next significant change to admissions testing occurred in 1950.[54] After several years of study and research by the Admissions Committee of the Academic Board and the Educational Testing Service, a recommendation was submitted to the Department of the Army urging that certain changes in the Academy's entrance examination procedures be made. This recommendation was approved by the Department of the Army on May 12, 1950. The changes supposedly "simplified appreciably" the admission requirements "without **materially** altering . . . standards of selection [emphasis added]." The following were the changes effected: (a) substitution of a single set of examinations (to be called the Math and English Achievement Tests) for the present regular and validating exams; (b) extension to all candidates of the requirement that they must pass the West Point Aptitude Test to qualify mentally; (c) arrangement of each competitive group in order of merit by the sum of the scores on the West Point Aptitude Test, the Math Achievement Test, and the English Achievement Test; and (d) elimination of the Scholastic Aptitude Test (SAT) method of validation and qualification. Under the new procedure, the mental examination of most candidates was completed in 1 day. This compressed schedule enabled most candidates to return home or to school at least a day earlier than had been possible under former examination procedures.[55]

Achievement, Aptitude, Intelligence

Tests, unlike instruments such as surveys and inventories, actually have correct and incorrect answers. Regardless of the particular type of test, each one is influenced by the capabilities (whether innate or not) of the test taker as well as the opportunities afforded the test taker (e.g., whether the elementary school had a music program; if parents could afford computer summer camp; or if family obligations allow for commitment to mastering material). However, the tests themselves can differ in terms of their purpose and design. Generally speaking, tests are classified along a continuum as being tests of either **achievement, aptitude,** or **intelligence**.

Thomas Coyle and David Pillow give succinct and accurate definitions of the three types of test. They define an **achievement** test as those tests "which are used to assess prior learning and knowledge;" **aptitude** tests as those tests "which are used to assess learning potential in a specific domain;" and **intelligence** tests as those tests "which assess general mental ability on all mental tasks."[56] As an example, the familiar "Chapter 5 Quiz in Math 101" is an **achievement** test. Its purpose is to indicate the test taker's understanding of that limited range of material found in Chapter 5. The items would essentially be restatements of examples and problems found in the chapter. One could administer a broad based achievement test covering a wide range of topics at many difficulty levels, but such a test would likely be considered invalid as it would be almost impossible to come up with a reasonable number of items that test takers could negotiate in a reasonable time frame.

At the other end of the testing spectrum is the **intelligence** test. The purpose here is to give a reasonable indication of the test taker's intellectual prowess; thus, items consist of questions or problems to solve where the test taker essentially lacks prior knowledge. Examples include the *Raven's Progressive Matrices and Vocabulary Scales,* the Cattell Culture Fair test, the Wechsler Adult Intelligence Scales-Fourth Edition (WAIS-IV), and the Army's own Alpha and Beta tests. Not all intelligence tests accomplish this equally well. The Raven's and the Cattell Culture Fair tests consist basically of pictures where test takers are to infer patterns and then implications of those patterns. The WAIS-IV and the Army Alpha contain much factual knowledge about which questions are drawn.[57] Still, the purpose of all these tests remains the same: Determine the state of the test taker's intellectual prowess and assign that prowess a number (i.e., the familiar intelligence quotient [IQ]).

Aptitude tests, conceptually, fall in between the two aforementioned types of test. They contain elements of factual knowledge and elements of inference and processing. The SAT and the American College Testing (ACT) are the two best-known examples of aptitude tests. Indeed, although the SAT is now known only as the SAT, it was originally the Scholastic **Aptitude** Test (until 1993 when it was

changed to Scholastic **Assessment** Test-I, in order to distinguish it from the College Board's Achievement tests that were renamed the Scholastic Assessment Tests-II). In 1997 the College Board stated that the term "SAT" no longer stands for anything.[58]

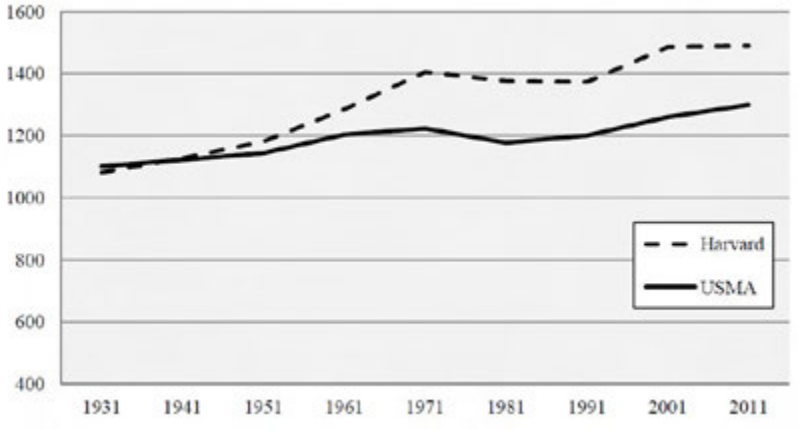
A final essential difference among the three types of test is how they are scored. Of the three, achievement tests can most easily rely simply on the raw score or on a simple conversion to a percentage. The reason is related to its fundamental purpose: demonstration of mastery of a particular topic. The other two types of test almost always utilize norms for scoring, as the purpose is not so much to demonstrate mastery as it is to distinguish test takers from each other (in terms of the aptitude or intelligence which the tests presumably measure).

The biggest change in the Academy's testing procedures—arguably the biggest change in the history of those procedures—came in 1954 when, on June 29 of that year, the Department of the Army approved the superintendent's recommendation that West Point adopt the SAT as the means for determining the mental qualification of candidates for admission. This was to be effective with the Class of 1960, who would enter West Point in July 1956. The superintendent's decision was predicated on "exhaustive study" conducted by the Admissions Committee and reviewed by the Academic Board.[59] At the time, the College Board's SATs were used by almost 200 civilian colleges in the United States for their admissions decisions. The tests adopted by West Point consisted of the SAT and achievement tests in intermediate mathematics, English composition, and social studies.[60]

The new admissions test was more important as a symbol and a milestone than it was as an actual refinement or alteration of testing procedures. As we have seen, the Academy was already using tests prepared by the Educational Testing Service before it adopted

the SAT and the achievement tests. The SAT did not represent anything too different from what the Academy had been using for a number of years. Still, the move was significant because it commemorated the symbolic end of the rigorous, criterion-referenced testing regimen that had been employed by West Point at what was arguably the height of its influence, prestige, and prominence. Significantly, West Point's adoption of the norm-based SAT came at a time when Ivy League institutions began to pull away from the USMA in the quality of undergraduates, when the socioeconomic and religious composition of the Corps of Cadets was undergoing profound change, and when the prestige of the military profession was beginning to erode, at least among the affluent, influential, and prominent.

In Figure 6-1, we depict the growing academic achievement gap referenced above and provide the average SAT scores for students at Harvard and West Point for each decade dating back to the 1930s. Assembling such data was complicated and required a combination of data from a number of sources (e.g., school archives, published reports, and modern publicly available data). The graph shows that as of the 1950s, the SAT scores for cadets at West Point were on par with those of students at Harvard. Since then, the USMA's relative standing has declined, with most of the decline occurring between the 1950s and the 1970s. Since the 1970s, West Point's average SAT score has remained below Harvard's (by approximately 200 points), but the difference has not increased. (This is likely due to the ceiling effect, wherein Harvard's mean is capped by being so close to the maximum possible on the test.)



Note: The figure above displays the average total SAT score for the USMA and Harvard by select years (i.e., 1931, 1941, 1951, 1961, 1971, 1981, 1991, 2001, and 2011). All data through 2001 was obtained from archive reports. Harvard data for 1931 and 1941 is estimated using data for those in the class that took the test. USMA data for 1961 is from 1962. Data for both schools for 1951 is from 1956. Harvard data for 2001 and 2011 is estimated as the midpoint of the 25th and 75th percentiles using Integrated Postsecondary Education System (IPEDS) data. USMA data for 2001 and 2011 was obtained from an internal USMA database and displays median SAT scores (or estimated scores using students' ACT scores).

Figure 6-1. Average Total SAT Scores by School.

Many contemporaries saw the adoption of the SAT for what it was—a lowering of mental standards. In his memoirs, John Eisenhower described the relaxation of West Point's mental standards and the consequent demise of the "cram" schools that had once thrived in a number of cities across the country. Before World War II, these schools always maintained an ample enrollment, relying as they did on anxious

applicants hoping to get past the Academy's rigorous 3-day exam. To Eisenhower and others of his generation, West Point's adoption of "standard college boards" was a decided step down.[61]

In 1961, West Point adjusted the way it computed its academic order of merit for the admissions process. Whereas the old method emphasized the candidate's performance on a standardized exam, the new method combined high school class rank with College Board examination results. This change in selection criteria, the Academy hoped, would be reflected in a reduction in the attrition rate. It supposedly weeded out those candidates whose record indicated little potential for success at West Point but who had achieved high SAT scores through a program of intensive cramming. The Academy apparently wanted to increase the importance of grade point average (GPA) and class rank because these measures represented commitment and what psychologists would term persistence, qualities that were better indicators of retention than intellectual ability alone.[62]

Also in 1961, the Academy diluted its admissions testing requirement. For those cadets entering in July 1960, the required tests were the SAT and the CEEB Achievement Tests in mathematics and English composition; the achievement test in social studies was dropped. In the new, more competitive admissions environment of the early 1960s, West Point could not afford to be overly selective.[63]

ACADEMIC STANDARDS AND CADET QUALITY

The USMA had to lower its academic standards to secure enough students. It was having a recruiting problem and was desperately looking for ways

to attract candidates who could complete the 4-year course. Moreover, this last task was not as easy to do as it had been before the war.[64]

After World War II, it did not take long for West Point officials to recognize that things had changed as far as the quality of incoming cadets was concerned. In 1943, about 7 percent of the USMA's largest class in history had matriculated at an elite civilian school before attending West Point. In 1947, the last year that such records were maintained, only a little more than 2 percent of the entering class had attended such schools. The difference between 1947 and 1943 is even greater, perhaps, than the percentages indicate, since the entering class of 1947 included cadets who attended Cornell under the Army specialized training program (ASTP), a special wartime program in which Army candidates did not have to compete for admission with the regular undergraduate population of the university.[65]

In the late 1940s and 1950s, West Point, as several superintendents admitted, had to constantly analyze and review its admissions requirements to remain competitive with leading civilian institutions of higher learning in the search for talented undergraduates. That competition had heated up after World War II when more financial aid and scholarships became available to students. In 1960, General William Westmoreland, the superintendent at the time, alluded to the fact that the USMA was losing "some fine prospective cadets" as a result of the increased competition from leading civilian institutions. He wrote of West Point being "under constant pressure from industry and from other educational institutions," which could now offer "highly attractive scholarships" and of the need to "act aggressively" and "improve the caliber"

of the students who came to the Academy. West Point was no longer the best deal when it came to student aid as its admissions struggles clearly showed.[66]

Westmoreland was not the first superintendent to notice the new admissions environment, nor was he the last. Improving methods of selection for the purpose of raising or improving the quality of cadets was a constant theme among Academy leaders in the mid-1950s through the early 1960s—just at the time when it was becoming apparent that the nation's elite institutions were pulling away from the USMA in the quality of undergraduates category.[67] The USMA approached what one superintendent called "the candidate problem" in two principal ways. First, it supposedly attempted to "raise admissions standards to eliminate the marginal risks who might previously have been admitted," but whose chance for success as a cadet was small. Second, it improved, or tried to improve, the effectiveness of the admissions program, which was designed to locate and assist outstanding potential candidates throughout the country.[68]

Despite these efforts, the military continued to lose ground to leading civilian schools. In 1963, the superintendent wrote:

> To be truly objective, however, our entering classes must be compared with those at comparable level academic institutions. Such a comparison reveals that, although there is full reason to be proud of the type young men who today are seeking the challenges of a West Point education, the Academy is merely abreast of the national trend . . . we are seriously obliged to become more selective so that we obtain our 'fair share' of the top talent among the young men of the nation.[69]

The implication of this last sentence, of course, was that the Academy was **not** getting its "fair share" of the top talent.

GRADUATE RECORD EXAMINATION (GRE)

West Point became very concerned with intellectual standards after 1945. Realizing that it was slipping behind some of the civilian institutions with which it liked to compare itself, the USMA resorted to a fairly extensive standardized testing regimen to measure its relative standing. In June 1948, the Graduate Record Examination (GRE) was administered to the graduating Class of 1948. All but 6 of the 301 members of the class took the examination. The performance of the Class of 1948 on the GRE was gratifying to Academy officials. The average cadet general educational index was 589, as compared with an average of 523 for all "liberal arts" senior men who took the exam. Based on the table of norms furnished by the Educational Testing Service, the general index of the average cadet exceeded that of 72 percent of the male college seniors in the country. In none of the eight individual tests of the general educational battery did the cadet average fall significantly below the national average of senior men, and in many of the tests, the cadet average was significantly superior. Thus, the average cadet score was higher than the scores of 93 percent of the male seniors in general mathematics, of 78 percent of male seniors in the physical sciences, of 65 percent of male seniors in social studies, of 67 percent of male seniors in literature, and of 77 percent of male seniors in effectiveness of expression. In general, the percentage of cadets making very high scores compared favorably with the percentage of college students generally

who made high scores, while the percentage of cadets making very low scores was far lower than the percentage of college students generally who made low scores.[70] From the GRE results, Academy officials concluded that: (1) the average cadet was getting a considerably better general education than the average male liberal arts student; (2) the USMA was graduating a much smaller percentage of really poor students than the average liberal arts college; and, (3) the better cadets compare very favorably in general educational achievement with the better college graduates.[71]

The GRE was taken by graduating USMA seniors for the next 7 years. In 1950, the superintendent included a table in his annual report showing the results of the GRE for the years 1948-50 (see Table 6-1). The Academy's top officer thought the results were quite good. Whether it placed the USMA at or near the top of the academic pyramid—a position it clearly held before World War II—is difficult to say.

Test	USMA 1948	USMA 1949	USMA 1950	Senior Men 1948
General Mathematics	696	696	692	569
Physical Sciences	645	651	654	560
Biological Sciences	515	514	522	513
Social Studies	568	568	567	517
Literature	531	522	525	471
Fine Arts	455	453	488	444
Effectiveness of Expression	562	546	548	473
Vocabulary	522	530	533	487
General Educational Index	589	585	587	506

Table 6-1. GRE Results of USMA versus Senior Men, 1948-50.

ADVERTISING AND MARKETING

In the late 1940s, the USMA began to do what it had never done before, at least not to any significant extent—namely advertise, publish a catalogue (the first edition of which came out in 1947), and engage in other marketing efforts to widen its applicant base. Before World War II, it never had to resort to such measures to attract its fair share of student talent. The Academy accelerated its marketing efforts in the early 1950s when West Point representatives (many of whom were cadets) began attending College Program meetings in high schools across the country. These College Program meetings were held in communities in which a desire was expressed by students, parents, or high school authorities to have firsthand information about specific institutions of higher learning. The assistance of military installations, West Point Societies, and the Academy's alumni group (the Association of Graduates) were enlisted in support of this initiative. Through these efforts, Academy officials hoped to spark a "renewed stimulation of interest" in West Point.[72]

Sensing a deteriorating admissions situation and concerned about stagnating test scores among applicants, West Point kept up the advertising blitz in the mid- and late 1950s. In the mid-1950s, an Information Committee was formed to place:

> greater emphasis . . . upon efforts to inform the American public in general—and high school students in particular—regarding the mission of the U.S. Military Academy, its stature as an educational institution, and the opportunities for admission.[73]

The emphasis on bringing West Point to the attention of the country was also evident in several new facets of the Academy's Public Information Program to include a renewed emphasis on using alumni as recruiting agents; a renewed commitment to College Nights at secondary schools; the creation of a new recruiting poster; the establishment of a Cadet Public Relations Council to recruit high school students; and the making of a 30-minute documentary film entitled, "West Point," for use in high school assemblies.[74]

In 1957, a Candidate Information Section was created in the Office of the Registrar to provide "'accurate information concerning the United States Military Academy with the aim of encouraging outstanding young men to seek admission.'" "Experience has shown" the annual superintendent's report observed, "that many young men fail to consider West Point and the Army as a career because of misinformation concerning the requirements and procedures necessary to gain admittance."[75] The next year, an Admissions Information Branch was set up in the Office of the Registrar "to intensify [West Point's efforts] to interest young men to seek admission to the Military Academy and pursue a military career." Colleges, businesses, and industry were engaged in vigorous competition for potential leaders from among the students of secondary schools, the superintendent explained, and West Point had to get its share of these leaders.[76]

The steps that the Academy took to bolster public awareness of the USMA and to facilitate the admissions process were steps that West Point did not feel the need to take before the war. Then, advertising was considered unnecessary; the Academy was able to attract a significant number of candidates from America's most elite civilian institutions into its ranks. In the

post-war era, West Point found itself in the uncomfortable and unaccustomed position of battling with the nation's civilian colleges for the nation's top undergraduates, a battle in which, over course of the 1950s, it did not fare too well.[77]

NON-COGNITIVE FACTORS

As in the ROTC and OCS, West Point began to accord more weight to non-cognitive factors and considerations in its admissions decisions than had been the case during the interwar period. The USMA, the superintendent reported in 1946, started to give:

> special consideration to candidates whose previous histories showed desirable personal qualities such as capacity for leadership and stalwart character. This consideration of non-scholastic qualities in cases of close failure was extended, in fact, to the other tests as well and became general practice in judging entrance qualifications.[78]

The emphasis at West Point was trending away from rigorous academic and intelligence testing and toward non-cognitive assessment. The Army and the USMA wanted to improve selection procedures not necessarily to attract brighter people but to identify candidates with leadership potential—especially potential for "combat leadership"—and the motivation to pursue an Army career.[79]

Many social scientists would have us believe that the USMA took this tack because they were searching for a more broad-based and scientific way to assess candidate talent. Moreover, this, to a certain extent, was true. Non-cognitive assessments were, indeed, more likely to satisfy the Army's operational imperatives in the 1950s—namely, to identify cadets who

would remain in the service longer and be more adept at low-level leadership skills than were their predecessors in the interwar era. Combat leadership of the type the social scientists were trying to measure, after all, took place at the platoon and company level, involved captains and lieutenants, and required relatively low level and non-complex intellectual skills. At the same time, West Point was struggling to attract the same sort of quality applicant it had before the war—quality in the interwar context being primarily related to mental ability. Academy authorities (and the social scientists they engaged) did not seem to realize fully that the non-cognitive assessment instruments developed to identify the combat leader and the person most likely to remain in the Army for a career were generally not very effective in identifying top academic performers. Only later did Army authorities come to realize that, in the post-war era, the characteristics and motivations of a career-motivated combat leader were very different from the characteristics and motivations of a top scholar.

The first non-cognitive instrument introduced at West Point after the war was designed to gauge leadership. This instrument, the West Point Biographical Inventory, was first used in 1947. It contained measures of personal history, personality, and background. However, it was found to be only marginally effective in predicting success at the Academy, a result that was deemed to be related to the tendency of cadets to respond to the inventory items in ways that would maximize their scores rather than reflect their true characteristics.[80]

The biggest change in selection procedures (and one of the more important milestones marking West Point's turning away from academic measures of

excellence toward measures that emphasized retention in service and small unit leadership ability) occurred in 1958 when West Point implemented the so-called whole man type of evaluation. From this date forward, all competitive candidates for the Academy were evaluated not on an Order of Merit List (OML) established primarily on the basis of a test of cognitive ability, but on an OML based on an assessment of a candidate's entire record—his scholastic record; his character and other personal attributes as shown by confidential statements furnished by principals, teachers, and other school officials; evidence of exceptional capabilities; his leadership potential; and his physical fitness.[81] The formula used to compute the whole man score was academic potential (60 percent); leadership potential (30 percent); and physical proficiency (10 percent).[82] Congress apparently was enamored with the new whole man approach to selection. More congressmen began to let the Academy make the final selection decision rather than using the traditional principal-alternate method. The superintendent was enthusiastic about the new formula, too. He confidently asserted in his annual report for 1958 that the whole man method would improve the overall caliber of entering classes.[83]

After the introduction of the whole man method of assessment and other so-called refined admissions procedures, West Point still bragged about the quality of its undergraduates, but not in the same way that it had done in decades past. It was no longer as focused on attracting the nation's brightest into its ranks—although Academy leaders did from time to time pine for the old days when West Point had the pick of the nation's undergraduate population. Now it redefined excellence and quality as encompassing leadership

and athletic ability in addition to scholarship—applicants to West Point were expected to display excellence in only one of the three areas. The Academy focused on recruiting outstanding young men who could be counted on to stay the course at the Academy, perform effectively in low-level leadership roles, and remain in the Army for a career; it was, in short, searching for young men who displayed "the best potential for military service" and could be expected to "fulfill the requirements of service."[84]

CONCLUSION

The mental testing of officer aspirants underwent a transformation after World War II. Before the war, candidates were given rigorous, criterion-referenced tests of academic attainment and general intelligence. The intent was to identify individuals with intellectual skills that would enable them to one day effectively serve as field grade officers in the Army. After the war, candidates were given norm-referenced tests of mental ability and academic attainment. The emphasis was on finding lieutenants capable of functioning effectively as junior officers and motivated to pursue a career in the Army.

The transformation in mental testing was, in part, a result of the new, post-war strategic environment. The Cold War demanded a military that was constantly ready to fight. Readiness became the watchword and animated almost everything the Army did. The Army no longer focused on producing erudite, strategic thinking officers capable of managing a national mobilization effort and leading a huge citizen army in a general war. Nor was its principal concern turning out officers who were prepared to function in positions

two levels up from their current grade. Now it had a more immediate and intellectually less ambitious focus. What it needed was well trained and motivated junior officers capable of leading platoons and companies in an Army that was continually on alert and ready to deploy. Training now trumped long-term officer development, and intelligence gave way to career commitment as the touchstone of officer quality (this was somewhat paradoxical given the prevailing historical narrative about how the more technologically sophisticated services needed brighter people after World War II).

ENDNOTES - CHAPTER 6

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CHAPTER 7:
VIETNAM

INTRODUCTION

The Vietnam War created the need for a vastly expanded officer corps and ushered in a new accessions environment. All three of the Army's principal officer accessions sources saw their output substantially increased. From the onset of the Vietnam build-up, the Army wanted the Reserve Officers' Training Corps (ROTC) to provide the bulk of its officers. However, because of the lag time associated with the ROTC commissioning process (it took the Army 4 years to ramp up ROTC production to the desired volume), the Army had by necessity to rely on the Officer Candidate School (OCS) for the bulk of its line officer accessions for the first 3 years of the conflict.

In August 1965, the Department of the Army announced that a major build-up of the OCS program would occur over the course of the next several years. By 1967, OCS had become the Army's largest producer of line officers. The 19,226 active duty officers it produced that year represented the summit of OCS production in the post-World War II period. For a time, the output of OCS was almost twice that of the ROTC and 34 times that of West Point.[1] In 1968, however, the Army began to phase down its OCS program. Officer production from that source fell off sharply.[2] By 1973, OCS was turning out slightly more than 1,000 lieutenants on an annual basis (or about 9 percent of new line officer accessions).[3] Many Army leaders, and General William Westmoreland in particular, were not appreciative of the quality of the OCS product and believed

that too much reliance had been placed on OCS during the war.[4]

The ROTC was by a wide margin the Army's largest commissioning source going into the war. In fiscal year (FY) 1965, 11,400 ROTC graduates received commissions as compared with 2,300 OCS graduates and 522 West Point graduates. Approximately 10 percent of ROTC graduates applied for a commission in the Regular Army; the remaining 90 percent received commissions in the Army Reserve.

However, the beginning of the Army's ROTC expansion in the early 1960s actually preceded the Vietnam build-up. Upon its assumption of office, the Kennedy administration had adopted a new "flexible response" strategy that entailed a significant growth in Army end strength. This only aggravated the Army's officer procurement problems, which already were quite serious. In 1963, the Department of Defense reported that the Army missed its annual officer accessions mission by over 2,000 lieutenants. Army officer accessions were beset by qualitative as well as quantitative problems. To be sure, due primarily to the Army's heavy reliance on the college-based ROTC program, the percentage of college graduates in the officer corps had increased since the early 1950s—rising from under 50 percent to over 70 percent between 1953 and 1965. Still, congressional and Army leaders were not satisfied with the caliber of officer they were getting and publicly complained that the ground forces were not getting a fair share of the nation's talented undergraduates.[5]

Congress took action to address these problems. One of the ways it did this was through the ROTC Vitalization Act of 1964. This legislation was designed to bolster the ROTC's position as the Army's principal

source of officers by instituting an Army ROTC scholarship program, increasing the ROTC stipend, creating a 2-year ROTC commissioning program (aimed originally at community and junior college students), and enlarging the Junior ROTC. Supplementary legislation expanded the Army ROTC from 243 units to 285 units between 1964 and 1971.[6] Aided by these measures, the ROTC resumed its place as the Army's largest commissioning source by the late 1960s. In 1970, the ROTC produced over 16,000 officers, the largest annual total that the ROTC has ever produced.[7]

West Point also experienced growth in the 1960s. Legislation passed in 1964 raised the enrollment ceiling at the Academy from 2,500 to 4,400 cadets. As a result of this increase, the institution's annual officer output rose by nearly 90 percent between 1964 and 1972. As was the case with the ROTC, the legislation providing for the expansion of the U.S. Military Academy (USMA) pre-dated the Vietnam War. It was inspired by the same forces and concerns about officer production that had informed the ROTC Vitalization Act.[8]

As had occurred in previous conflicts, however, much of the increase in quantity was realized at the expense of quality. Moreover, this was true in all three of the Army commissioning programs. The pressure of numbers severely restricted the Army's ability to screen. All of the major accessions sources were eventually forced to lower their commissioning standards to meet their larger, wartime officer production quotas.

In the case of OCS, attempts were made, initially at least, to hold the line on quality and avoid the turmoil that followed the expansion of the OCS program in World War II and Korea. Before Vietnam, OCS had

primarily been an avenue for non-degreed enlisted people to gain a commission. Only 28 percent of the 1,688 OCS graduates commissioned in 1964 had a college degree. The next year, the Army began to aggressively target college graduates for its OCS program. However, this push rendered few returns. To be sure, by the early 1970s, about 70 percent of the annual OCS graduating cohort held a baccalaureate degree. By that time, however, that cohort had been drastically reduced from its peak in 1967. A higher percentage of college graduates came out of OCS but the overall officer outflow from that source had been reduced to a relative trickle. Thus, despite the Army's push to recruit more college graduates into the program, the efforts to fill the OCS with college prospects were only marginally successful. This is evidenced by the fact that by 1970, approximately half of all Army captains did not have a baccalaureate degree. This dearth of college educated junior officers was due in large part to the heavy reliance the Army had placed on its OCS program during the first 3 years of the Vietnam War.[9] Many blamed undereducated OCS graduates such as Captain Earnest Medina and junior college dropout Lieutenant William Calley, Jr. for incidents such as the My Lai Massacre and for many of the Army's disciplinary and morale problems in the late 1960s and early 1970s. Right or wrong, some Army leaders made a direct connection between a low level of general education and illicit and immoral behavior.

There were other troubling aspects of the OCS program in addition to the low level of civilian education. One was the program's rapidly plunging attrition rates. Some insisted that greatly diminished washout rates were evidence of a dilution of OCS commissioning standards. From an attrition rate of about

44 percent in the late 1950s and early 1960s, the rate sank to 30 percent by 1966 and to 20 percent by 1967. Pressed for officers to meet the leadership demands of the Vietnam War, the Army had little choice but to relax its vetting procedures.[10]

West Point was by no means immune from the noxious effects of officer production pressures. Its ability to be selective in admissions also deteriorated as the Vietnam War dragged on and as the Corps of Cadets grew. For several years in the early 1970s, in fact, the Academy had to admit virtually all minimally qualified candidates to make its numbers. The ability of the ROTC program to cull the marginally capable from its ranks also declined, especially during the latter stages of the Vietnam War. Many factors in addition to the vastly expanded demands of the war contributed to this development. Campus unrest, social turmoil, the progressive elimination of compulsory ROTC, and the gradual lessening of draft pressures after 1969, all reduced ROTC enrollment, and consequently, the Army's ability to screen officer aspirants.[11]

RESERVE OFFICERS' TRAINING CORPS (ROTC)

As already noted, the demands of the Vietnam War compelled the Army into lowering commissioning standards. One method by which this was effected in the ROTC was to lower educational requirements for students enrolled in military junior colleges (MJC) such as the New Mexico Military Institute, Marion Military Institute, and Valley Forge Military Academy. In 1966, the Deputy Chief of Staff for Personnel (DCSPER), the Army's chief personnel officer, introduced the Early Commissioning Program (ECP). The ECP permitted MJC graduates, who heretofore had to

wait until they completed their baccalaureate degree to be commissioned, to enter the officer corps immediately upon completion of their junior college studies. Thus, instead of getting 21-year-old candidates with with baccalaureate degrees, the Army commissioned 19-year-olds with associate degrees.[12]

Drastic change in the ROTC host university and college base was another factor that affected officer production. In an attempt to counter the elimination of compulsory programs and to ensure that production capacity kept pace with the officer requirements, the Army expanded ROTC's institutional base by over 17 percent (from 243 to 285 colleges and universities) between 1964 and 1971. During this period, a number of universities, including such prestigious ones as Yale, Harvard, Dartmouth, and Stanford, severed their connections with the Army ROTC. Thus, in addition to the 42 schools required to meet the Army's expansion goals, the schools leaving the program also had to be replaced. Most of the institutional newcomers into the ROTC were not top tier schools but were small or medium-sized state institutions located in the South, the Midwest or the West—schools such as Alabama Agricultural and Mechanical (A&M), University of Tampa, Alcorn A&M (now Alcorn State), and Jackson State.[13] Students in these new additions to the ROTC institutional base were more eager than their Ivy League counterparts had been to enroll in commissioning programs and officials at these new schools were generally more supportive of the ROTC than were their Ivy League counterparts. The Army wanted to be where it was welcome, and these new schools definitely welcomed the Army presence. On the other hand, this shift away from the Ivies toward less selective schools raised concerns about product

quality. Some worried that this institutional change-over would lower the intellectual level of the officer corps. As General Donn Starry later observed, "There is no way to replace a Harvard . . . or Yale except with Harvard or Yale."[14]

The Army used the ROTC institutional expansion to achieve greater ethnic diversity in its new officers. It was pushed in this direction by both the Johnson and Nixon administrations, both of which exerted considerable pressure on the Army and the other services to increase the percentages of minority officers in their ranks. Unlike today, diversity in the late 1960s and early 1970s had a very restricted meaning; it referred primarily to African Americans.[15]

Before World War II, most black reserve officers received their commissions through ROTC programs at Wilberforce University and Howard University. In the immediate post-war period, an additional 12 ROTC units were established at other historically black colleges and universities (HBCU).[16] Despite these additions, African American officer production lagged. By the 1960s, African American representation in the junior officer ranks was in decline—it fell from roughly 3 percent in 1962 to about 1.5 percent in 1969. The Army attempted to redress this shortfall by adding still more units at HBCUs, as a high proportion of serving black Army officers had graduated from these institutions. By the end of the Vietnam War, the number of historically black schools hosting ROTC units had risen to 19 (or slightly less than 7 percent of the ROTC institutional base—that stood at 285 colleges in 1972—and slightly more than 18 percent of all HBCUs in the nation—that numbered 104 in 1972).[17]

The addition of these black colleges to its institutional portfolio brought quick enrollment and

production dividends to the ROTC, in relative if not absolute terms. The percentage of black graduates in the ROTC commissioning class rose from 2.6 percent in 1969 to 3.6 percent in 1973. Over the same period, the African American share of total ROTC enrollment grew from 6.6 percent to 10.8 percent.[18] These numbers seemed to bode well for the Army's diversity efforts.[19] Yet the reliance upon HBCUs had its troubling aspects. While ROTC enrollment rates at black colleges were above average, black student participation in ROTC at predominantly white institutions was well below average. This was a source of concern to defense leaders because, in the late 1960s and early 1970s, black students in increasing numbers and percentages were attending predominantly white colleges. Additionally, ROTC units at HBCUs were much more inefficient officer producers, on average, than were units on other campuses, their ratios of cadets enrolled to cadets commissioned being very low.[20]

One reason for the inefficiency of many HBCU-affiliated units was the difficulty they had in qualifying their cadets for the ROTC advanced course. Many observers attributed this inefficiency to years of unequal educational opportunity in the United States. In 1969, almost 49 percent of the students taking the ROTC qualification test at 7 black institutions failed it, while the national failure rate was about 15 percent. To correct this imbalance, the Army sponsored special remedial academic programs at HBCUs to lower the failure rate. It soon became evident, however, that much more had to be done in this area if the Army hoped to realize its minority procurement goals.[21] Thus, to increase officer accessions, the Army adopted a policy of liberal waivers for scores on the ROTC Qualifying (RQ)-8 and RQ-9 exams—the exams

used to screen entry into the ROTC advanced course. In 1969, the minimum raw score on these RQ exams was 50. Local commanders had the authority to grant waivers for RQ scores between 44 and 49. Continental Army Command (CONARC) headquarters could (and did) approve waivers for scores below 44.[22]

Waivers for the RQ test, along with waivers for medical, behavioral, and physical issues, were liberally dispensed. This helped to increase the number of minority officers attaining commissions as well as helped the Army maintain required levels of overall officer production. Waivers were particularly useful in the early 1970s as draft calls decreased and as the Army began weaning itself away from conscription. On the other hand, the liberal granting of waivers resulted in a general lowering of the level of intellectual attainment among junior officers.[23]

NEW VERSIONS OF THE ROTC QUALIFYING (RQ) EXAMINATION

Two revised versions of the ROTC Qualifying (RQ) Examination (named RQ-8 and RQ-9) were introduced in the spring of 1966 to screen students for admittance into the senior ROTC program. The expansion of officer procurement programs and changes in officer training necessitated these modifications to the Army's officer selection instruments.[24] Given to cadets at the end of their sophomore year, the RQ test measured verbal and mathematical aptitudes that were closely associated with success in both academic and military science (MS) courses. A minimum score was established each year to eliminate the bottom 16 percent of the sophomore or MS II class. About 2.5 times as many cadets as were needed were enrolled into

the ROTC Advanced Course using this method. This allowed for attrition as a result of academic and leadership failures, physical shortcomings, and voluntary resignations.[25]

The original versions of the RQ test (RQ-l and RQ-2) were introduced in 1947. Through substantiation studies, their developers found that the verbal and math subtests were aligned with collegiate academic grades closely enough to justify their employment as vetting instruments for MS III cadets. Later versions of the test were shortened for administrative purposes so that the exam could be offered in one class period. RQ-3 was introduced in 1949, the RQ-4 and RQ-5 in 1956, and the RQ-6 and PQ-7 in 1961. The RQ-8 and RQ-9 versions of the exam were constructed by the Educational Testing Service under contract with the Department of the Army and first employed as selection tools in 1966.[26]

The Army created the new versions of the test to obtain "more reliable part scores (verbal and mathematics)," the thought being that more reliable part scores could be employed for branching purposes (i.e., assigning ROTC graduates to the most appropriate occupational specialty). To achieve greater reliability, researchers made three alterations to the test: (1) they inserted an additional verbal and an additional math section to the test; (2) they replaced five-choice questions with four-choice questions; and (3) they used a larger assortment of math questions.[27]

As in World War I and II, the assignment of officers to certain branches posed problems during the Vietnam War. The field artillery was one such branch. At the start of the war, ROTC graduates had to have completed a course in trigonometry to be assigned to the field artillery. This requirement resulted in an

overemphasis on mathematical ability since many ROTC graduates with good mathematical backgrounds (e.g., individuals who majored in a math, science, or engineering discipline) were automatically placed in the field artillery. The Army did a study to see if the math score on the RQ exam could substitute for the artillery's trigonometry requirement. ROTC graduates enrolled in the Artillery Basic Course took the RQ exam during the first week of classes. Their math scores were subsequently compared to their final course grade. The outcome confirmed the appropriateness of the RQ math test for assignment purposes.[28]

There was some thought given in the mid-1960s to developing a "Basic ROTC Examination" as a screening device for entering freshmen (or the MS I class). Out of the 80,000 to 90,000 students enrolling in the ROTC Basic Course every year, about one-half dropped out during their first and second year in the program. Many observers considered this to be extremely wasteful. To lower the dropout rate, the initial vetting of candidates for academic ability seemed "virtually a necessity." As it was, entry into the Basic Course was being screened principally on local admission standards, which varied greatly from one college to another.[29] The idea was determined to be too restrictive, given the great demand for officers during the Vietnam War, and was never adopted.

OFFICER CANDIDATE SCHOOL (OCS)

The OCS selection system during Vietnam was a successive hurdles system; that is, candidates had to pass initial mental screening exams before they could apply to OCS. Applicants who passed the initial screen were then evaluated using a leadership selection battery, which consisted of an evaluation report, personal inventory, and board interview. These three

instruments provided "a standardized basis for determining the relative leadership potential of OCS applicants." Certain branches had additional requirements. Admission to the Artillery and Missile OCS program, for example, entailed an additional mathematical requirement.[30]

The Army used several initial intellectual vetting tests for OCS applicants. The Armed Forces Qualification Test (AFQT) was one of them. The AFQT was the general ability test to determine mental fitness for military service. A minimum score of 65 was needed to qualify for OCS under the enlistment option. The Army also used the general technical (GT) aptitude area of the AFQT as an initial screening device. The GT score included the results of the verbal and arithmetic reasoning tests. The qualifying score on the GT was 110; this meant that about 35.5 percent of inductees were qualified for further testing. The Army gave the Officer Candidate Test (OCT) to all enlisted people who scored 110 or above on the GT. The OCT contained an assortment of questions gauging arithmetic reasoning, reading comprehension, chart reading, and general information. The minimum score on the OCT was 115; this meant that about one quarter of inductees was qualified to apply for OCS.[31]

The Army also used several instruments for leadership selection in the OCS program. One was the Officer Leadership Qualification Report (OLR-1). In the leadership arena, past performance was considered to be a reliable indicator of future performance. Accordingly, the OLR-1 emphasized performance and was filled out by applicant's non-commissioned officer (NCO) supervisor and endorsed by his superior officer. The Officer Leadership Qualification Inventory (OLI-l) was another form used for leadership selection.

It was administered by an OCS board during the final stages of applicant processing. Included in this inventory were items relating to an assortment of personal factors such as "personal history as well as interests, skills, and attitudes concerning athletic activities and leadership activities."[32]

The Officer Leadership Board Interview (OLB-1) was conducted by an examining board composed of three to five officers. It had two parts. In the first part, the applicant's people skills were gauged in a series of interpersonal scenarios. The candidate was presented with a series of problem situations, to which he was supposed to respond. Judging from the manner in which he discussed each scenario, board members evaluated him on factors such as composure, voice quality, and language organization as well as "his ability to deal with enlisted men and officers." In part two of the interview, the board reviewed the applicant's "entire record" and made a final determination as to his suitability for a commission. A favorable determination was "essential to selection."[33]

Composite scores computed from both parts of the interview were then pooled with scores achieved on the qualification report and the qualification inventory to give a composite gauge of the applicant's suitability for a commission. Regular Army applicants could receive additional credit for length of service (1 bonus point for each 2 months of service up to a maximum of 30). These extra points were given as incentives to stimulate Regular Army applications. The cutoff score was adjusted from time to time to meet officer production demands. Of course, this meant that the greater the demand, the lower the qualifying score; flexibility was the watchword when it came to selection procedures. The final determination on OCS candidates fell

to Army commanders, who would make their decisions after an examination of all records.[34]

The Army spent considerable effort after World War II refining its OCS selection battery. Most of the work leading to the creation of these vetting instruments was accomplished between 1941 and 1956. The first versions of the OCT were introduced in 1945 and instruments of the leadership selection battery in 1946. Validity information obtained on these forms and on later revisions indicated that they were good predictors of performance, particularly of academic grades.[35]

In the revision of OCS selection instruments that occurred in 1956, the board interview and the evaluation report were updated and retitled the OLB and the OLR respectively. The third instrument in the leadership selection battery, a biographical information form, was revised and retitled the OLI. Revisions of the board interview and the OCT were cosmetic in nature. After 1956, the Army felt compelled to improve its screening instruments and to adjust them to changing requirements and operational realities. This need became more acute with the gradual expansion of the Infantry and Artillery OCS programs from FY 1960 to FY 1965 and the activation of the Engineer, Armor, Signal, Quartermaster, Transportation, And Ordnance OCS programs in FY 1966.[36]

Army researchers suspected that the selection instruments had not been adapted to the changing characteristics of American youth and to the unique demands of Army schools, particularly schools that provided specialized training in the Artillery, Missile, Signal, Transportation, and Ordnance specialties. For example, the OLR did not allow for valid assessments of the new inductees who applied for OCS; raters, it was discovered, often had scant contact with applicants. The OLB posed singular difficulties. To

be sure, it was effective when used as directed. However, comments received from people administering the instrument indicated that there was considerable disparity in the conduct of the interview and on the emphasis given to each part of the two-step interview. Adjustments were made to refine the instruments but not before the OCS program was phased down after 1968.[37]

SAT & *g*

Although we have already distinguished among achievement, aptitude, and intelligence tests, we must nevertheless discuss the relationship between the SAT (and American College Testing [ACT]) and intelligence quotient (IQ). Both types of test are norm-referenced; scores are not reported in either raw form or as a simple percentage of answers correct. However, while they share this scoring trait, they differ in terms of what they assess. However, this has not stopped researchers over many years from using the SAT as a proxy for intelligence. The main reason is simple convenience: A great many more individuals have taken the SAT as have taken a standard intelligence test (such as the Raven's Advanced Progressive Matrix [APM] or the Wechsler Intelligence Scale for Children). However, convenience does not necessarily make for good science.

Meredith C. Frey and Douglas K. Detterman sought to examine the relationship between the SAT and psychometric *g*, using the Armed Services Vocational Aptitude Battery (ASVAB) in a first study and the Raven's in a second. Correcting for attenuation and restriction of range, they obtained correlations of .86 and .72, respectively.[38] These are very high correlations for a social science such as psychology and would seem to indicate that they almost entirely measure the same construct. However, by squaring the correlations (and multiplying by 100), one can see how much variance they share. In this case, the squared correlations (multiplied by 100) are 74 percent and 52 percent, respectively. These percentages indicate large amounts of overlap (for social science phenomena), but there is still 26 percent and 48 percent of the variance unique to the individual tests. Thus, it would seem that they do measure different things, and this should give researchers pause for concern when studies use the SAT as a measure of general cognitive ability

Bridgeman critiqued Frey and Detterman's formulas on methodological and empirical grounds, but A. Alexander Beaujean, Michael W. Firmin, Andrew J. Knoop, Jared D. Michonski, Theodore P. Berry, and Ruth E. Lowrie, were able to validate Frey and Detterman's formulas when they used the Reynolds Intellectual Assessment Scales in lieu of the SAT and the Raven's APM.[39] It is likely, however, that use of the SAT for research purposes will continue for reasons of the aforementioned convenience. The ACT exams are administered about as frequently as the SATs are; they too are actually an aptitude rather than an intelligence test. Katherine A. Koenig, Frey, and Detterman correlated ACT scores with those of the ASVAB and with the Raven's APM and obtained correlations of .77 and .61, respectively.[40] Given such results, it is even more likely that aptitude tests will continue to be used as measures of cognitive ability as both the SAT and the ACT correlate strongly with standard intelligence tests.

Finally, Thomas Coyle was able to demonstrate that the SAT and the ACT are **not** intelligence tests, but that they **do** remain valid predictors of undergraduate academic success. In 2008, he and David Pillow statistically removed *g* from the SAT and ACT scores of students and showed that the tests sill remained predictively valid. Earlier, in 2006, he demonstrated how test-retest score changes in the SAT were unrelated to test-retest score changes for college grade point average (GPA), the Wonderlic Personnel Test, and word recall tasks.[41]

WEST POINT

West Point's experience provides unique insights into officer accessions during the Vietnam War. This is because its experience was more fully documented than that of the other commissioning sources. Information regarding Scholastic Aptitude Test (SAT) scores, acceptance rates, screening tests, and other matters relating to the admissions process were more readily available. More information, of course, allows more fidelity and specificity when detailing the changes in officer accessions during a very tumultuous period.

The USMA continued its academic and intellectual decline relative to the nation's elite civilian institutions during the Vietnam War. The average SAT scores of cadets diverged more and more from their contemporaries at distinguished civilian institutions. In a socioeconomic sense, West Point was now was a very different institution than it had been prior to World War II. Before that conflict, its cadets were, socioeconomically and intellectually speaking, generally on a par with students at Ivy League institutions. By the end of the Vietnam War, it was abundantly clear that West Point was no longer an Ivy League equivalent. There was now a distinct social gap between the cadet population at the Academy and the student bodies at elite civilian institutions. The USMA also drew more heavily from rural areas and small towns and from lower status religious denominations than it once did. The percentage of Catholics in the Corps, which had risen from 15 percent in 1943 to approximately 31 percent by 1958, grew to almost 36 percent by 1973. Evangelicals, too, had also recorded substantial gains.[42]

Laurence I. Radway, professor of Government at Dartmouth College and noted authority on military education, provided a socioeconomic comparison of West Point cadets with their counterparts in elite civilian institutions in the late 1960s. According to Radway, civilian elites were more likely to come from urban or suburban upper middle-class families, more likely to attend one of the elite preparatory schools in the East, more likely to have high verbal scores on the SAT, twice as likely to belong to a high status Protestant denomination, twice as likely to be Jewish, and less likely to be Catholic than were West Point cadets.[43]

Academy officials realized that their institution was experiencing a decline relative to elite civilian

institutions. They complained about the increased competition from civilian schools for the cream of the nation's entering freshmen and the decreasing pool of qualified candidates who sought admission to West Point. The Academy's superintendent noted in his 1968 annual report that the number of "fully qualified" students had "declined significantly" since 1965. He was, he stated, "deeply concerned about the decreasing size of the pool of interested, nominated, and qualified young men from which we can select new cadets."[44] The nadir of West Point's Vietnam era woes occurred in the early seventies when it had to accept virtually every qualified candidate in order to make its enrollment quota.

West Point's relative decline was reflected in a widening gap in SAT scores between cadets and their counterparts at the nation's elite colleges. The gap was particularly noticeable in SAT verbal scores. What was a relatively narrow breach in the late 1950s become a significant divide by 1970. West Point's decline was also reflected in the decreasing percentage of cadets who came to West Point with prior college experience. In the interwar period, between 40 and 50 percent of the entering freshman class had matriculated at a 4-year college before entering West Point. In the 1960s, less than 20 percent did.[45]

West Point officials attributed their institution's admissions problems to, inter alia, the increasing availability of scholarships and financial aid at civilian institutions. "The advantage of offering a free collegiate education," one superintendent noted, "is no longer unique to the Military Academy."[46] West Point officials also noted how pressure to select cadets who demonstrated commitment to the "military profession" and who exhibited a high degree of "career

motivation" complicated their search for quality students. The Academy wanted outstanding students who were highly motivated toward a military career before they became cadets.[47] Attracting outstanding scholars who, at the same time, demonstrated a high degree of enthusiasm for a military career was a difficult task indeed. Students with the greatest proclivity for a military career were generally not those with the highest SAT scores or with the highest grades. The social and political turmoil that wracked the nation was another factor cited as contributing to the Academy's decline in selectivity. "The balance between quality and quantity can be a tenuous one," the superintendent noted in his 1971 annual report. It could be especially tenuous when the military institution was under critical public and congressional scrutiny, as it was in the waning stages of the Vietnam War. The prestige of the military was at or near an all-time low and West Point felt the consequences. Finally, USMA officials pointed to the expansion of the Corps of Cadets that had occurred between 1964 and 1971 as a factor in its admissions woes. Essentially doubling the size of the Corps over a 7-year period almost inevitably, it was realized, entailed a certain drop-off in candidate quality.[48]

To be accepted into West Point, students had to meet the Academy's citizenship, character, medical, and educational standards. They also had to perform adequately on a selection battery that included gauges of intellect and academic attainment, physical fitness, and leadership potential.[49] Throughout the Vietnam period, the USMA continued to employ the so-called whole man score to evaluate applicants. This composite measure (introduced in 1958) was calculated by

combining the various scores achieved on the selection battery, employing the following weights:

> Academic measures 60%
> Evaluations of leadership potential 30%
> Measures of physical proficiency 10%[50]

Academic qualification for admission into West Point was established by "a weighted composite of high school rank and scores on the CEEB [College Entrance Examination Board] Verbal and Mathematics subtests of the Scholastic Aptitude Test, English Composition Achievement Test, and Mathematics Achievement Test." Measures of physical fitness were integrated into the Physical Aptitude Examination, which gauged strength, coordination, muscular power, endurance, speed, and agility. Qualification was based on overall performance on physical ability tests such as the broad jump, hurdle run, pull-ups, vertical jump, and rope climb. The School and Personal History form was the principal basis for assessments of Leadership Potential, although admissions officers also took into account school and community activities of an athletic or social nature.[51]

Throughout the Vietnam War, there was understandable concern at the USMA that only the best qualified applicants be selected. Various tests were run to evaluate whether the assessment instruments in use would lead to the more consistent selection of the "better qualified individuals," that is to say "individuals with leadership potential, who were **best motivated for attendance at the Academy and for a subsequent Army career** [emphasis added]." Officials at West Point were concerned, as they had been since the mid-1950s, about what they considered to be the inordinately high resignation rates at the Academy

and the high attrition rates of Academy graduates in the Army. They strove to tweak their tests and selection procedures to keep these rates as low as possible. The problem was that gearing selection procedures to emphasize retention tended to screen out the very high academic achievers among applicants. There was, and still is, a negative correlation between very high scores on the SAT and the likelihood of an officer remaining in the Army for a career.[52]

One of the products developed to identify applicants with the propensity to remain in the service was the Inventory of Cadet Aptitude. This instrument contained:

> two empirical measures: 1. A measure of cadet motivation consisting of items which had been found to be predictive of voluntary resignation in several USMA classes. 2. A measure of leadership potential consisting of items found to be associated with the Aptitude for the Service Rating (a weighted composite rating on military aptitude obtained from cadets and tactical officers).[53]

The inventory encompassed such personal factors as self-confidence in leadership situations, motivation for officer training and service, athletic experience and skill, acceptance of authority and discipline, and facility in interpersonal relations. While the Inventory of Cadet Aptitude was being created, work conducted by the USMA's research staff led to the articulation of a high school personality rating, or, as it was called, the Aptitude for Service Personality Rating. This rating also proved to be a good gauge of cadet motivation and leadership ability. It was based on remarks and ratings provided by high school teachers and administrators on two scales: physical coordination and personal magnetism (ability to get along with others and

to influence others). It was found that the high school personality rating was the best gauge of leadership and cadet retention.[54]

CONCLUSION

The Vietnam era was one of declining standards for officer accessions. The rapid and massive expansion of the Army and its officer corps necessitated, as it had in past wars, a compromise with quality. In each of its three major commissioning programs, the Army had to strike that tenuous balance between quality and quantity that West Point's superintendent had alluded to. In many cases, this meant, in practical terms, buying quantity with quality.

The ROTC program saw its institutional base changed drastically. Elite, private colleges were replaced with less competitive state institutions in the South and the West. The ROTC entrance tests, the RQ-8 and RQ-9, were circumvented with hundreds of waivers. The OCS program admitted thousands of undereducated officer aspirants and, in the process, altered the intellectual and some would argue moral complexion of the officer corps. The Army also lowered the rigor of the OCS course itself, cutting the attrition rate in half to get the production volume it needed. West Point continued its relative decline as an elite academic institution. The changing socioeconomic complexion of its student body, its diminishing appeal among the nation's top students, and the declining prestige of the military profession (particularly evident during the Vietnam War) announced in unmistakable terms that West Point was no longer the institution it had been before World War II. In the next chapter, we will see how the Army's three

commissioning sources reacted to the Vietnam experience and adjusted to the conditions and challenges of an All-Volunteer Force (AVF).

ENDNOTES - CHAPTER 7

1. U.S. Army, Deputy Chief of Staff for Personnel (DCSPER), *Annual Historical Report: FY 1967*, Washington, DC, Office of the Deputy Chief of Staff for Personnel, 1967, p. 27. Hereafter, all DCSPER annual reports referred to as DCSPER, *Annual Historical Report* along with their corresponding year.

2. DCSPER, *Annual Historical Report*, 1968, p. 34; DCSPER, *Annual Historical Report*, FY 1969, p. 12; DCSPER, *Annual Historical Report*, 1970, p. 38.

3. William G. Bell and Karl E. Cocke, *Department of the Army Historical Summary, Fiscal Year 1973*, Washington, DC: U.S. Army Center of Military History, 1977, p. 67.

4. Oral history interview with General James K. Woolnough, March 3, 1971. Others were not so sure. General James K. Woolnough, the outgoing commander of the soon to be extinct Continental Army Command (CONARC), thought that sentiment against Officer Candidate School (OCS) among senior leaders was not totally deserved and believed that the Army had acted too hastily when it cut back OCS production in the late 1960s. He complained that the OCS program was "practically dead" in an interview he did with an Army historian in March 1971 and regretted it was not being maintained at a more robust level.

5. Arthur T. Coumbe and Lee S. Harford, *U.S. Army Cadet Command: The 10 Year History*, Fort Monroe, VA: Office of the Command Historian, U.S. Army Cadet Command, 1996, p. 14.

6. Ibid., p. 18.

7. DCSPER, *Annual Historical Report*, 1969, p. 29. The Reserve Officers' Training Corps (ROTC) Vitalization Act of 1964 also instituted a scholarship program for the Air Force ROTC. The Naval ROTC had had such a program since 1946.

8. DCSPER, *Annual Historical Report*, 1963 through DCSPER, *Annual Historical Report*, 1970.

9. Memorandum, DCSPER, U.S. Department of the Army, "subject: Quality of the Officer Corps; Staff Study," August 19, 1964; Frank W. Norris, *Review of Army Officer Educational System, Vol. I: Summary Report*, Washington, DC: Department of the Army, December 1, 1971, p. 7.

10. Henry Koepcke, *A Successful Infantry OCS Program*, Student Thesis, Carlisle, PA: U.S. Army War College, March 1958, p. 18; DCSPER, *Annual Historical Report*, 1967, p. 37; DCSPER, *Annual Historical Report*, 1968, p. 16. Only after ROTC officer production reached desired levels did OCS attrition rates start rising again.

11. Victor Bruce Hirshauer, "The History of the Army Reserve Officers' Training Corps, 1916-1973," Ph.D. dissertation, Baltimore, MD: Johns Hopkins University, 1975, p. 398. Seventy percent of ROTC units were compulsory in 1959; only 7 percent were by 1973.

12. DCSPER, *Annual Historical Report*, 1966, p. 41. Military junior colleges (MJC) cadets could take the ROTC advanced course during their freshman and sophomore years.

13. Deputy Chief of Staff for Individual Training, *Semiannual Historical Report: 1 January-30 June 1971*, Fort Monroe, VA: Headquarters, U.S. Continental Army Command, 1971, pp. 1-2.

14. Lewis Sorley, ed., *Press On! Selected Works of General Donn A. Starry: Volume I*, Fort Leavenworth, KS: Combat Studies Institute Press, U.S. Army Combined Arms Center, 2009, p. 604.

15. Beth Bailey, *America's Army: Making the All-Volunteer Force*, Cambridge, MA: Belknap Press of Harvard University Press, 2009, p. 186.

16. The 12 new historically black colleges and universities (HBCU)-affiliated units were in operation by 1949.

17. Clarence A. Miller, *Procurement and Retention of Black Officers*, Research Paper, U.S. Army War College, April, 1972, p. 38; Gary S. Tatro, Operational Research Analyst, G-2, Operations

Analysis Division, U.S. Army Cadet Command, email to Arthur Coumbe, subject: "G-2 Master File (as of 10 November 2015)," December 2, 2015.

18. Robert L. Goldich, *The Senior Reserve Officer Training Corps: Recent Trends and Current Status*, Washington, DC: Congressional Research Service, April 19, 1974, p. 31.

19. Miller, p. 39; Goldich, p. 32.

20. Miller, p. 40.

21. Ibid., p. 42.

22. Ibid., p. 50.

23. Deputy Chief of Staff for Individual Training, *Report of the Tenth Annual CONARC ROTC Conference, 13-14 September 1972*, Fort Monroe, VA: Headquarters, U.S. Continental Army Command, 1972, pp. 23, 130.

24. Leo J. Kotula and Helen R. Haggerty, *Research on the Selection of Officer Candidates and Cadets*, Technical Research Report 1146, Washington DC: U.S. Army Personnel Research Office, May 1966, p. ii. The Army relied heavily on selection instruments in use at the U.S. Military Academy (USMA) to fashion its selection instruments for the OCS and ROTC programs, and this included the ROTC Qualifying (RQ)-8 and RQ-9.

25. Ibid., p. 2. Selection requirements established in 1965 for the 2-year ROTC program were identical to those used in the 4-year program.

26. Ibid. As mentioned previously, these forms were patterned after the American Council on Education Psychological Examination for College Freshmen, an instrument widely used at that time as a general ability-screening test in colleges and universities.

27. Ibid., p. 4.

28. Ibid., p. 5.

29. Ibid.

30. As in the other commissioning programs, there were also physical, educational, and moral requirements that were supposed to be met.

31. Kotula and Haggerty, p. 8.

32. Ibid.

33. Ibid., p. 8.

34. Ibid.

35. Ibid., pp. 8-9.

36. Ibid., p. 9.

37. Ibid.

38. Meredith C. Frey and Douglas K. Detterman, "Scholastic Assessment or *g*? The Relationship Between the Scholastic Assessment Test and General Cognitive Ability," *Psychological Science*, Vol. 15, Iss. 6, 2004, pp. 373-378.

39. Brent Bridgeman, "Unbelievable Results when Predicting IQ from SAT Scores: A Comment on Frey and Detterman," *Psychological Science*, Vol. 16, Iss. 9, 2005, pp. 745-746; A. Alexander Beaujean, Michael W. Firmin, Andrew J. Knoop, Jared D. Michonski, Theodore P. Berry, and Ruth E. Lowrie, "Validation of the Frey and Detterman (2004) IQ Prediction Equations Using the Reynolds Intellectual Assessment Scales," *Personality and Individual Differences*, Vol. 41, Iss. 2, 2006, pp. 353-357.

40. Katherine A. Koenig, Meredith C. Frey, and Douglas K. Detterman, "ACT and General Cognitive Ability," *Intelligence*, Vol. 36, Iss. 2, 2008, pp. 153-160.

41. Thomas R. Coyle, "Test–Retest Changes on Scholastic Aptitude Tests are not Related to *g*," *Intelligence*, Vol. 34, Iss. 1, 2006, pp. 15-27; Thomas R. Coyle and David R. Pillow, "SAT and ACT predict college GPA after removing *g*," *Intelligence*, Vol. 36, Iss. 6, 2008, pp. 719-729.

42. Lawrence I. Radway, "Cadet Education in a Liberal Society," in Bryan Rollason, ed., *Centennial Symposium on Military*

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43. Lawrence I. Radway, "Recent Trends at American Service Academies," in M. R. Van Gils, ed., *The Perceived Role of the Military*, Rotterdam: Rotterdam University Press, 1971, pp. 22-23.

44. USMA, *Annual Report of the Superintendent of the United States Military Academy*, Washington, DC: U.S. Government Printing Office, 1968, p. 12. Hereafter, all USMA annual reports referred to as the USMA, *Annual Report of the Superintendent* along with their corresponding year.

45. USMA, *Annual Report of the Superintendent*, 1965, p. 4; USMA, *Annual Report of the Superintendent*, 1966, p. 8; USMA, *Annual Report of the Superintendent*, 1967, p. 11; USMA, *Annual Report of the Superintendent*, 1968, p. 10; USMA, *Annual Report of the Superintendent*, 1971, p. 7.

46. USMA, *Annual Report of the Superintendent*, 1971, p. 9.

47. USMA, *Annual Report of the Superintendent*, 1968, p. 14.

48. USMA, *Annual Report of the Superintendent*, 1969, p. 8.

49. Kotula and Haggerty, p. 10.

50. Ibid., pp. 10-11.

51. Ibid., p. 11.

52. Ibid.

53. Ibid., pp. 11-12.

54. Ibid., p. 12.

CHAPTER 8:
OFFICER TESTING IN THE ERA OF THE ALL-VOLUNTEER FORCE (AVF)

After the Vietnam War, the Reserve Officers' Training Corps (ROTC) reclaimed its position as the Army's largest commissioning source. It accounted for about 75 percent of active Army officer accessions in the 1970s. The U.S. Military Academy (USMA) also assumed an enhanced role relative to the one it had in the decade before Vietnam. After 1973, it produced about 17 percent of the active Army's annual cohort of new officers.[1] As had occurred after other major wars in the 20th century, Officer Candidate School (OCS) was reduced to a caretaker status, just large enough to ensure that it could be reactivated quickly in the event of an emergency. Its post-Vietnam share of the annual commissioning cohort averaged a modest 8 percent.[2]

With the advent of the All-Volunteer Force (AVF), women and minorities assumed a much larger role in the Army's officer accessions plans. Women began to enter commissioning programs in large numbers in the early 1970s. After admitting them on an experimental basis in the fall of 1972, the ROTC was thrown open to women in 1973. By the end of the 1970s, women comprised over 15 percent of the annual ROTC commissioning cohort. West Point admitted its first group of 119 women in 1976, the same year that OCS adopted a gender-integrated approach to officer training.[3] The volume of minority officer accessions also grew substantially during this era. By 1979, African Americans comprised over 10 percent of ROTC officer output and about 7 percent of the USMA's production. Minority production in OCS was even greater, in a relative sense at least.[4]

The early and mid-1970s were years of ambiguity in officer accessions. Due to declining and frequently changing end-strengths, a new and enhanced role for the reserve components (RC), and an indeterminate international situation (the 1st half of the 1970s were years of détente with the Soviet Union), there was a great deal of uncertainty about what officer production levels should be. The Army's Deputy Chief of Staff for Personnel (DCSPER) noted in his annual historical summary for 1973 "the balancing of qualitative new procurement against the reductions in the force presented major problems." In fact, the ROTC operated without a definite mission through the mid-1970s. ROTC administrators were told simply to produce as many lieutenants as they could. This methodology presented no immediate problems. The Army merely took what it needed for active Army requirements and gave the remainder to the RC, which in the immediate aftermath of Vietnam were still brimming with officers. Only in 1976, after U.S.-Soviet relations began to worsen and RC officer strength approached dangerously low levels, did the Army assign a definite production objective to the ROTC.[5]

Concerns about the quality of newly minted lieutenants plagued the Army throughout the 1st decade of the AVF. With the phasing out of conscription after 1970, the Army found that it could not meet minimum active duty commissioning targets without lowering accessions standards. Finding the ROTC Qualifying (RQ) test too restrictive, it began experimenting with other tests that promised easier access into the officer corps. The Cadet Evaluation Battery (CEB) was selected to replace the RQ examination. It came into general use in 1972. The CEB, being an attitude and interest inventory as well as a test of cognitive

ability, was much less rigorous than the RQ test that it replaced.[6]

The new screening tool soon revealed a disturbing trend. Average scores on the CEB steadily declined after 1971. In that year, the average CEB score was 22. By 1975, it had dropped to 17. From a cognitive assessment standpoint, the drop was actually worse than the scores indicated since more than half of the test—about 60 percent—measured non-cognitive characteristics. Moreover, some ROTC instructors claimed that were widespread irregularities in the administration of the new test. Since ROTC cadre members had total control over testing, they could provide close and detailed coaching to their charges. They could also allow candidates to take the test multiple times, until they passed it, in fact. Pressed to make numbers, many cadre members found that they had no choice but to circumvent the test by resorting to unethical expedients. The ROTC's testing record was similar to that of the Recruiting Command, which suffered from a number of recruiting scandals and cases of recruiting malpractice in the 1970s. Some of those scandals involved lying on the administration of the Armed Services Vocational Aptitude Battery (ASVAB).[7]

Several studies conducted during this period added to the Army's concerns about the quality of its officer aspirants. J. J. Card and W. M. Shanner of the Army Research Institute for Behavioral and Social Sciences (ARI) authored a 1976 study indicating that ROTC cadets had lower high school and college grade point averages (GPA), lower verbal aptitudes, and lower academic abilities than their non-ROTC classmates. They also found that career commitment and retention among ROTC cadets was positively related to low academic ability and observed that

"high academic aptitude may not be the most salient determinant of good performance in ROTC or in the Army."[8] In a separate but related report, Card and Shanner, along with two of their colleagues, urged the Army to make a greater effort to recruit and select students of higher academic ability into the ROTC, with the goal of having ROTC students at least on par with the average college student.[9]

The epochal *Review of Education and Training for Officers* (RETO) study (1978), commissioned by the Chief of Staff of the Army, also expressed strong reservations about ROTC's selection methods and the intellectual quality of ROTC cadets. It noted that accessions screening for all ROTC cadets was not being conducted, that the ROTC program's intelligence standards were "inadequate," and that there was no initial measurement of medical status, physical fitness, leadership potential, or even motivation for military service for the vast majority of cadets. In fact, it suggested, little screening and culling was being done at all in the ROTC officer selection process.[10]

Another criticism of the Army's officer vetting system advanced by the RETO study involved the disparate mental aptitude screening methods used by the three pre-commissioning training programs. There were minimal mental aptitude scores required for entry into OCS, in the opinion of the RETO committee. Not only were the qualifying scores inordinately low, they were different for male and female applicants (males had to score 110 on the general technical [GT] test to qualify for OCS, women had to score 115). On the other hand, there were effective screening instruments in place for ROTC 4-year scholarship applicants and West Point applicants. Both had to take the Scholastic Aptitude Test (SAT) or American

College Testing (ACT) tests as part of the admissions process. However, for non-scholarship ROTC applicants (which constituted the vast majority of ROTC cadets during this era), there was no initial mental aptitude standard worthy of the name (the committee dismissed the CEB as essentially worthless as a screening device).[11] The dearth of common standards in the screening of pre-commissioning program aspirants, the committee declared, "underscores a series of double or triple standards which shout for reform." The RETO group emphasized the need for a common standard of officer accessions "unfettered by exception, waiver, and vague terminology." In the opinion of the study group, candidates for all three commissioning sources should be required to take either the SAT or the ACT examination. In addition, OCS candidates should be required to have completed at least 2 years of college.[12]

The RETO study group recommended that the Army use centralized assessment centers to screen applicants to all of the Army's commissioning programs. This was necessary, it asserted, for establishing comparative norms. The USMA and OCS could use Armed Forces Entrance and Examination Stations while special ROTC assessment centers would have to be established to assess all candidates for the ROTC program. The "major factor" that led to this recommendation was the "total lack of initial measurements of [mental] aptitude, motivation, physical fitness and leadership potential of individual[s] desiring to enter the ROTC program." Non-scholarship applicants to the ROTC program, it was noted, had no "scholastic requirements" for admission into the program whatsoever. The lack of initial assessment instruments led

to a predictable flood of "unqualified" candidates into ROTC, which inevitably produced high attrition rates. It also led to a very heterogeneous officer corps. "Upon commissioning," the RETO report noted:

> the only common bond these officers enjoy is their rank as second lieutenants—and that is not enough. Funneled through eligibility gates of various descriptions, and developed through disparate programs of military training, without common gauges of cadet performance, the new officers arrive at their basic officer course as unmeasured products of an uncommon system.[13]

Along a spectrum of screening procedures ranging from stringent to lax, the committee remarked, one would place West Point, OCS, and ROTC, respectively. Under existing regulations, the USMA imposed the most rigorous screening standards on its applicants. OCS was equally as precise, but the variety of waiver devices and the frequency with which they were dispensed lessened the value of the screening accomplished to a level that was "something less than desired." The ROTC, except for its 4-year scholarship students (who constituted at the time about 2 percent of ROTC freshmen), imposed virtually no initial screening over its participants (the use of the CEB notwithstanding).[14]

Attrition in pre-commissioning training programs was a big issue for the RETO study group. It noted that the first year attrition rate at the USMA was 24.9 percent and in ROTC, 54 percent. The OCS attrition rate was 10 percent. Whatever the cause for the attrition, the RETO group observed, "one thing [is] clear: the cost-effectiveness of any program becomes increasingly suspect in the light of high attrition." Program cost would, it was asserted, continue to increase if

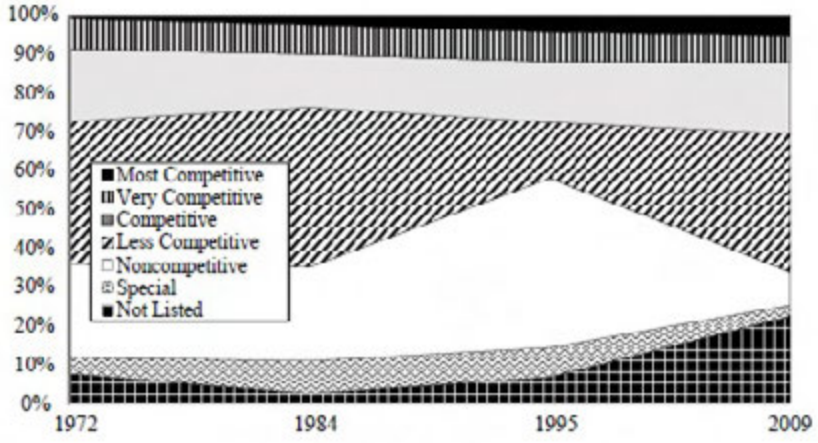
only through the "normal inflationary spiral." Consequently, other means had to be developed and tested to reduce the dropout rate. This involved, inter alia, creating instruments or procedures that would do a better job of identifying applicants who had the ability and motivation to successfully complete officer producing programs. The RETO study group was aware of, but rather naive about, the effect that these instruments would have on officer production. To select candidates that were motivated for military service would necessarily lead to a dilution of standards since extremely high mental aptitude was known to have an inverse relationship with proclivity for military service. However, the RETO group wanted these instruments created and introduced "without lowering standards," a difficult goal to attain.[15]

The study group, as we have seen, insisted that there should be common requirements applied to all applicants, regardless of the pre-commissioning program to which they were applying. "Where uncommunality [sic] reigns," it asseverated, "a decided laxity appears." However, once again the RETO group demonstrated an awareness of, but naivety about, the ramifications of their recommendation. That group wanted to have common standards "without sacrificing the leavening effect the military community enjoys through the annual transfusion of new officers representing all elements of the democracy it serves."[16] Common standards, the RETO group realized, made minority recruiting problematic. Nevertheless, they again attempted to square the circle by pursuing these two divergent objectives simultaneously.

The changing character of the ROTC cadet corps was yet another concern of defense leaders in the 1970s, although this concern was more acute among

civilian officials than it was among senior military officers. In the last chapter it was noted how in the 1960s and 1970s, ROTC units in the nation's most prestigious colleges and universities were replaced with ones at less selective state-supported institutions. It was also noted how the geographical center of the ROTC program shifted to the South and West. Some of this reflected an effort by the Johnson administration to distribute funds more equitably across the nation's university community, and some reflected a desire by the military to position ROTC programs where they would be welcomed and supported and, hopefully, become more productive. The U.S. Army Training and Doctrine Command (TRADOC) was worried about the trend away from the country's most selective colleges and the cultural changes that were altering the nature of the ROTC program but, given the fiscal realities of the late seventies, the intense pressure to meet officer accessions objectives, and the relatively high employment rate that prevailed at the time, could do little to reverse these developments.[17]

In Figure 8-1, we depict a composite ranking of schools with ROTC programs since 1972. We do this in an attempt to better understand the intellectual ability of individuals enrolled in ROTC programs over time. While any college ranking or evaluation system has its strengths and weaknesses, we chose *Barron's Profiles of American Colleges* as our measuring stick because of the availability of the data for a large number of schools and the publication's historical availability (i.e., back to the 1970s). We utilized four different time periods based on ROTC and Baron's data; these periods are roughly decade intervals, though not exactly.



Note: The figure above displays the stacked distribution of ROTC schools by their Barron's selectivity classification. ROTC data was obtained from the annual "Army ROTC Enrollment Report." Selectivity data came from yearly Barron's Profiles of American Colleges.

Figure 8-1. Stacked Distribution of ROTC Schools by Barron's Selectivity Classification.

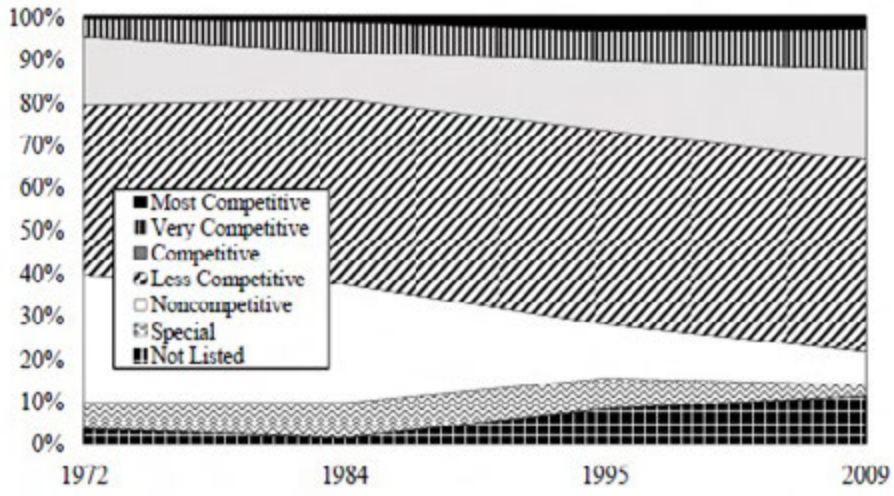
The Baron's system ranks schools based on their selectivity using high school class ranks, high school grades, standardized test scores for admitted students, and the institution's admission rate. The system consists of five categories of schools, and we added a category for schools not included in the ratings. We provide a definition of each category and some example schools for each category to orient the reader to the ratings.

Examples of schools (private and public) by category in decreasing selectivity include: most competitive (Harvard, Lehigh, University of Virginia); very competitive (Boston University, University of

California, Berkeley); competitive (Baylor, Ohio State); less competitive (Saint Louis University, Buffalo State); noncompetitive (Wilmington College, University of Arkansas at Little Rock); special (Albany College of Pharmacy, Allen College of Nursing); not listed (New Mexico Military Institute, University of Guam). Of note, Barron's rates the USMA in the highest category, "Most Competitive."[18]

The data reveal several trends. First, relative to the early dates, there are now more ROTC programs at the most competitive schools (blue section). The share of schools in the very competitive and competitive categories has decreased slightly, reflecting the gain in the highest (most competitive) tier. Grouping together the schools in the bottom four categories (less competitive, noncompetitive, special, and not listed), the fraction of schools in these categories has remained relatively constant at just over 70 percent, though it increased to nearly 80 percent in 1984. This suggests that most ROTC programs are at schools ranked relatively low by Barron's. Also of note, since 1995, the fraction of schools not listed by Barron's has increased, suggesting that ROTC programs are increasingly being located at schools not even covered by the ranking system.[19]

In Figure 8-2, we analyze the trends in ROTC accessions quality by students as opposed to ROTC program schools. The previous analysis weighted ROTC programs equally while this analysis weights each ROTC cadet equally.



Note: The figure above displays the stacked distribution of ROTC students by their Barron's selectivity classification. ROTC data was obtained from the annual "Army ROTC Enrollment Report." Selectivity data came from yearly Barron's "Profiles of American Colleges."

Figure 8-2. Stacked Distribution of ROTC Students by Barron's Selectivity Classification.

This analysis reveals some more encouraging trends. Overall, the fraction of students enrolled at schools in the top three categories (most competitive, very competitive, and competitive) increased by about 10 percentage points (from approximately 20 percent to approximately 30 percent) since 1972. This suggests that more ROTC cadets are enrolled at more-selective universities. Correspondingly, the number of cadets enrolled in the bottom four categories decreased from 80 percent to 70 percent. This is still a very large fraction though and suggests that the vast majority of ROTC cadets are enrolled at schools rated less competitive or lower.

Before concluding, we note that the preceding analyses of ROTC programs (by school and by student) do not necessarily reflect the intellectual ability of ROTC cadets themselves. There is substantial individual variation within any institution, and these measures are institutional in nature. Nonetheless, the analysis we provide offer some insight into the academic environments that ROTC cadets are exposed to, and the environments that ROTC cadets selected into, even if we do not know the academic performance of the cadets themselves relative to other students. The overall picture, while arguably slightly better than in the 1970s, still suggests that these environments are not as high as we might desire for the academic preparation of future Army leaders.[20]

THE EARLY COMMISSIONING PROGRAM (ECP)

The Army's officer production problem became more immediate and severe in 1976 when the Army's chief personnel officer, the DCSPER, determined that, in order to meet mobilization requirements, ROTC had to produce more than 10,000 officers a year by 1980. As it was, the Army was commissioning fewer than 6,000 officers annually. To ramp up ROTC output to the desired level, the Army took a number of extraordinary measures. The most controversial was the extension of the Early Commissioning Program (ECP). Previously, the ECP was available only to graduates of military junior colleges (MJC). Beginning in 1978, however, it was extended throughout the entire ROTC institutional base. Cadets could now earn reserve commissions through the ROTC without completing a baccalaureate degree. By the early 1980s, the ECP accounted for roughly half of all ROTC

commissions. Even more worrisome to Army personnel managers was the fact that there were no minimum academic standards in place to cull unqualified ECP cadets from the ranks. Since graduation was no longer linked to commissioning, students with a GPA below 2.0 could now be commissioned, as hundreds of them were. With the ECP offering an easy road to a lieutenant's bar, many officer aspirants reportedly entered the ROTC program with no intention of finishing their degree.[21]

OFFICER ACCESSIONS IN THE REAGAN ERA

The advent of the Reagan administration signaled an upturn in the fortunes of the Armed Forces. Recruiting, aided by a severe recession, improved as Congress loosened its purse strings, raising military pay, increasing retention incentives, and pouring more funds into pre-commissioning programs. The ROTC program saw its scholarship budget rise steeply. As a result of these programs and others like them, the quality of both enlisted and officer accessions rose. Still, problems persisted on the officer side.[22]

Although the officer accessions picture brightened, the Army still maintained the much-maligned ECP through the 1980s. It had to if it hoped to meet its officer needs. The ECP, therefore, continued to play a huge role in reserve officer production. The program accounted for more than 60 percent of **all** ROTC graduates in some years. In 1984, the California National Guard received 95 percent (74 out of 78) of its ROTC lieutenants from the ECP. The Army Reserve had a similar experience. RC commanders felt that a lieutenant without a degree was better than no lieutenant at all.[23]

Not all senior officers approved of the ECP. The general perception was that RC was being short-changed since they had to settle for a lower caliber of officer. General William Richardson, the TRADOC Commander from 1983 to 1986, clearly felt this way. He told the Army's chief personnel officer in June 1985 that the ECP was:

> fundamentally wrong and contrary to our efforts to upgrade quality. To allow thousands of officers, who are commissioned without a college degree, to serve in reserve units (TPU) [troop program units] lowers our standards and, in effect, establishes a double standard for the AC [active component] and the RC.[24]

The bleakest period for the ROTC program was in the late 1970s and early 1980s. Worries about the lack of ROTC screening and culling mechanisms deepened in this era as increasing numbers of ROTC graduates began to fail their Army branch basic courses. In 1981, General Starry, the TRADOC Commander, observed,

> While we have always been concerned with ROTC graduates who perform poorly at the [Officer Basic Course] OBCs, it has been only in the past few years that this problem has become critical. Whereas in the sixties and early seventies the bottom 5 to 10 percent of ROTC graduates were fully able to complete OBC and meet minimum levels of proficiency, in recent years, this group is often able to accomplish neither.[25]

While a disproportionate number of the lieutenants who failed OBC came from historically black colleges and universities (HBCU), the problem was by no means limited to those institutions. Many lieutenants from ROTC's less selective, predominantly white colleges also could not meet the intellectual demands placed on them in their branch schools.[26]

The commissioning source mix in the 1980s differed little from the previous decade. ROTC's annual contribution declined slightly (from 75 to 72 percent) as did the USMA's (from 17 to about 16 percent) while OCS rose slightly (from 8 to 13 percent). The officer accessions environment in the 1980s, however, was much more propitious than it had been in the previous decade. A high unemployment rate, a resurgence of patriotism, the heating up of the Cold War with the Soviet Union, and the Reagan administration's firm support of the military services helped create this environment. The Reagan administration doubled the number of ROTC's scholarships and greatly expanded the ROTC's institutional base. Simultaneously, West Point became (according to the *U.S. News & World Report* at least) one of America's hottest undergraduate destinations and reportedly attracted thousands of additional applicants.[27]

With high unemployment rates and more scholarships, the number of ROTC cadets enrolled in America's more-selective schools increased. Less selective schools also saw ROTC enrollment gains. Moreover, because ROTC units now attracted more applicants, instructors could be more discriminating in whom they commissioned. The number of waivers granted for medical, moral, and academic issues was cut back and failures at OBC gradually ceased to be a major problem.[28]

The Army took a number of steps to increase the rigor of its officer applicant screening process. The most momentous was the introduction of the ROTC Quality Assurance System, which was designed to raise minimum contracting and commissioning standards. The Quality Assurance System required a minimum GPA of 2.0 for commissioning, and it introduced,

or at least attempted to, the Officer Selection Battery (OSB) as a screening mechanism.[29]

RESERVE OFFICERS' TRAINING CORPS (ROTC) ASSESSMENT SYSTEMS

In 1986, the Army began to screen non-scholarship ROTC cadets with the Pre-commissioning Assessment System (PAS). The PAS, another outgrowth of the RETO study, was used on non-scholarship ROTC cadets typically at the beginning of their junior or military science (MS) III year when they signed a contract with the Army agreeing to enter either the AC or RC following their commissioning. Factors that were taken into consideration by the PAS included: (1) the Army Physical Fitness Test; (2) a structured interview conducted by the professor of MS to assess motivation; (3) GPA; (4) participation in extracurricular activities; (5) ROTC writing assessments, presented in MS courses; and (6) scores on the OSB Forms 3 and 4.[30] These six factors were then evaluated in terms of the "whole person package," instead of "being quantified, weighted, and combined to form a single qualifying score." There were certain minimum scores that candidates were supposed to meet, such as those established for GPA and the OSB. However, these scores were not absolute cut-offs in the traditional sense. As Diane Brown observed, if an applicant fell short in one area, the Army would look for strengths in other areas or for justifications for the observed shortcoming. In fact, some of the screening measures, such as the OSB for example, were used to identify individual shortcomings and shunt students into remedial programs rather than eliminate weak performers, as they were originally intended to do.[31]

The Army Research Institute developed the OSB 3 and 4 referred to above. The battery was built from a job analysis of Army lieutenants "conducted to identify performance dimensions." Those dimensions were initiative, decision-making, administration, communication, interpersonal manner, technical knowledge, and combat performance. The battery was relatively effective in predicting the performance of cadets in the ROTC program and the success of ROTC graduates in Officer Basic Courses.[32] At the same time, the OSB was a good illustration of how far the Army officer corps had fallen since the interwar years when strict, criterion-referenced tests regulated entry into the profession.

The Army ROTC employed the whole person score to select 4-year scholarship winners. The weighted factors that went into that score were: (1) the SAT or Act score (25 percent); (2) high school class standing (25 percent); (3) participation in extracurricular activities and "other factors that demonstrate leadership ability" (40 percent); and (4) the Physical Aptitude Examination (10 percent). Cut-off scores varied from year to year, depending on the number of applicants and on the Army's requirements. However, there were minimum scores for the SAT and ACT that, if not attained, would result in the rejection of a candidate. For the SAT, for example, 4-year scholarship applicants had to score at least 850 to be admitted into the program.[33]

The 3-year ROTC scholarship program (designed for students in their last 3 years of college) combined the whole person package (like the one used in the PAS) with scores on the SAT or ACT to come to a decision on applicants. Again, applicants had to attain a minimum score on the tests (850 for the SAT) to be considered for a scholarship. The 2-year ROTC scholarship program (given to students in their last 2 years of college) did not employ the SAT or ACT to select

award winners. Their selection methodology required that an applicant have at least a 2.0 GPA on a 4.0 scale. If that minimum GPA was not met, the applicant was not considered. If it was, the applicant was evaluated using the whole person package.[34]

PERSISTENT PROBLEMS

Despite the measures taken to raise officer accession standards and the favorable budgetary conditions that positively affected all the Army's commissioning sources, problems remained. A number of Army-sponsored studies written in the late 1970s and early 1980s—the RETO (1977), the *Officer Personnel Management System Study* (1984), Army Pamphlet 360-885 (1984), and the *Professional Development of Officers Study* (PDOS) in (1985)—all sounded the alarm about officer accessions standards, especially in regard to the ROTC program. During the Reagan era, the most influential of these was the PDOS, it noted that the "wide variance in standards . . . across and within [the Army's] commissioning programs" that earlier studies had called attention to were still extant. The authors of the PDOS, like the RETO study group before them, urged the Army to "tighten commissioning standards" to meet Army requirements and develop "common minimum standards" for commissioning that applied to all officer producing sources.[35]

The PDOS compared the relative rigor of the officer screening process in the three sources of commission (SOC). The USMA and the OCS program had the most stringent screening standards, the study observed. On the other hand, the ROTC, except for its scholarship program, imposed "virtually no initial screening requirements [on] its participants."[36]

The generally low officer accessions standards that prevailed in the Army were reflected in the lack of basic academic skills among lieutenants and captains. The Army's junior officers, according to the PDOS, had a problem with reading, writing, and arithmetic. The study urged the Army to conduct basic literacy and numeracy testing in officer producing programs and that reading, writing, and arithmetic be made a part of pre-commissioning and commissioning standards. A special effort, the study continued, should be made to assist MS I and MS II cadets with developing these skills before it was time for them to contract into the ROTC Advanced Course.[37] In addition to screening out unqualified and unsuitable applicants, the testing would help individuals by identifying areas in which they needed remedial training and by guiding their self-development efforts. It would also help the branching process by identifying aptitudes for certain branches and functional areas—such as computer science, languages, etc.[38]

The PDOS lamented the fact that between 20 and 30 percent of all company grade officers were unable to read, write, and perform basic arithmetic calculations at the 12th grade level. The precise percentage was not known because the Army had no uniform testing standard. Diagnostic testing at branch schools—in the OBC and in the Officer Advanced Course (OAC)—since June 1982 supported the conclusion that many officers were deficient in reading, writing, and arithmetic. Of the 12 branch schools reporting, only 9 evaluated 1 or more of the basic educational skills at the OBC level. In these 9 schools, 8 different sets of test instruments were used. The established evaluation standards differed in all but three schools. Evaluation standards ranged from a low of the 11.0 grade to a

high of the 14.0 grade level and, in one case, the standard was self-determined.[39]

THE CADET EVALUATION BATTERY (CEB)

The CEB was the screening test use by the ROTC in the 1970s and early 1980s. It represented the culmination of a program, initiated in the late 1950s, designed to improve "the selection and assignment of personnel in accord with their capabilities to meet differing leadership requirements." The Army Scientific Advisory Panel and the Deputy Chief of Staff for Personnel guided and watched over its development. The CEB was an abbreviated version of the Differential Officer Battery (DOB), which was briefly described in Chapter 6. From 1972 until 1983, it was the principal screening instrument for students coming into the Army ROTC program.[40]

The CEB consisted of two principal sections: the Cadet Evaluation Test (CET) and the Cadet Evaluation Inventory. The former section provided "a measure of the individual's cognitive abilities in the areas of combat leadership, technical-managerial leadership, and career potential."[41] The latter section provided a non-cognitive gauge of the candidate's interests in the same three areas in addition to a measure of his or her career motivation. The subscales on this test battery were evaluated (employing factor analysis) as a unit:

> of the resulting factors, the following were included in the CET because of their predictive validity, as demonstrated by correlations with leadership performance measures at an Officer Evaluation Center.
> 1. Practical skills. . . . practical knowledge of a rural-mechanical nature. Items from the following content categories are prominent in this factor: nature sports, farm facts, and mechanical information.

2. Technology operations. . . . mechanical and physical science knowledge. Dominant content categories are mechanical information, physics, and chemistry.
3. Math and physical science. . . . knowledge in physics, chemistry, and mathematics.
4. History, politics, and culture. . . . knowledge in humanities and the social sciences. Major content categories are art, literature, and politics.
5. Tactics. Unlike the others, this scale was composed of residual content items and was not identified in the factor analysis. It tests knowledge in military tactics.[42]

Further analysis of the DOB showed that:

> combat cognitive and non-cognitive scales incorporated into the CEB were predictive of combat leadership performance, and that technical-managerial cognitive and noncognitive CEB scales were predictive of leadership performance in technical and managerial roles. The career potential and career intent scales are used to predict whether the cadet will pursue an Army officer career.[43]

As already alluded to, through a comparison of CEB scores from 1971 and 1975, ARI researchers noticed a deterioration of the cognitive abilities of ROTC cadets.[44] They attributed this deterioration principally to the:

> change in composition of the ROTC MS II population between 1971 and 1975. In 1971 the draft, by removing the nonmilitary job options of many college students, [shunted many students into the ROTC] . . . who might not otherwise have considered it. The competition for the limited number of ROTC spaces, may well have produced a higher level of academic quality than in 1975, when the draft was no longer a factor.[45]

Michael Rumsey and Sue Mohr of the Army Research Institute observed:

> comparisons . . . on the noncognitive scales revealed a trend markedly different from that found in comparisons of the cognitive scales. On each non-cognitive scale except career potential, scores indicated that the 1975 group tended to have more of the interests found to correlate with successful on-the-job performance [as a junior officer] than the 1971 group. These findings are again consistent with an explanation based on the changing composition of the ROTC population between 1971 and 1975. A likely impact of the draft was to produce an ROTC population with relatively heterogeneous interests in 1971, which paralleled the interests of active military officers to a somewhat limited degree. With the draft eliminated by 1975, students with traditional military interests were more prevalent in the ROTC population. This explanation is consistent with the finding that the 1975 group demonstrated more motivation for a military career than the 1971 group on the career intent scale.[46]

The lack of basic academic skills did not affect completion rates at TRADOC schools. Although more than 29 percent of the officers failed to meet the desired literacy and numeracy standards, only about 2 percent failed to graduate from OBC. This percentage was slightly less than the 3 percent failure rate at the Infantry School, which did no diagnostic testing. The low failure rate coupled with the low levels of reading, writing, and math skills among junior officers led many to question the rigor of the TRADOC system of officer education and training. The disappointing results of the diagnostic testing of reading, writing, and arithmetic, after all, did not appear to have any correlation to the ability of the officer to complete the OBC or OAC successfully.[47]

The extreme heterogeneity of mental standards and testing for officers was alarming. For example, only 8 of the 12 branch OACs (consisting primarily

of captains) evaluated 1 or more of the basic education skills. In the eight schools that did assess at least one basic education skill, six different test instruments were used. Evaluation standards varied from the 11.0 grade level to the 15.5 grade level. The Ordnance and Infantry Schools determined their own evaluation standards while the Armor School chose the 50th percentile level as its evaluation standard.[48]

TRADOC deplored the lack of uniformity in diagnostic testing programs within the OBC and OAC branch schools and in October 1984 established both a common testing instrument—the OSB—and a uniform standard. At the same time, it placed a requirement on the branch schools to establish a remedial education program for all who do not meet established literacy and numeracy marks.[49]

THE DEVELOPMENT OF THE OFFICER SELECTION BATTERY (OSB)

The RETO study had found that commanders in the field were concerned about the quality and trainability of lieutenants from ROTC. It denounced the absence of a common gauge to measure the academic performance and leadership ability of cadets entering the Army ROTC program. To remedy what it perceived as a dire situation, the RETO study group recommended the development of a standard written test to measure the officer potential of ROTC applicants. The Army Research Institute, responding to RETO concerns, developed and fielded the OSB. The OSB was field tested in School Year 1981-82 and again in School Year 1982-83. Data was gathered and evaluated by ARI and test scores reported to TRADOC in the summer of 1983. The OSB was scheduled for implementation in February 1984. However, before that could happen, questions were raised about the

OSB's validity, the predictive value of mental testing, and the OSB's likely impact on minority recruiting. It was consequently not used as a screening device in ROTC, albeit it was employed for other purposes.[50] Some found the Army's handling and use of the OSB anomalous. Developed to screen for entry into the ROTC Advanced Course, the test was never used for this end. This prompted some observers to ask, "If the Army does nothing with test results, why test?"[51]

The Army experienced difficulty establishing valid test standards with instruments that measured cognitive ability. As already noted, prior to February 1984, ROTC used the CEB as a mental screening test for MS III applicants who did not have SAT/ACT scores. It was originally believed that a score of 80 on the CEB equated to an 850 (out of a possible 1600) on the SAT; however, it was eventually determined by researchers employed by the Army that a CEB score of 80 correlated to an SAT score of 650 (out of a possible 1600) and, according to other sources, to an SAT score of only 530. With this low bar, it is not surprising that virtually all applicants taking the CEB were able to score 80 or higher and qualified for entry into MS III/ contract status despite the fact that many did not have an SAT/ACT score, or had a SAT score below 850. The Army did better with the OSB. Testing determined that an OSB score of 97 correlated to an 850 on the SAT and the Army initially planned to use this score (i.e., 97) as its pre-commissioning standard. The use of the OSB as an intellectual screening test for all pre-commissioning programs, the PDOS study group plaintively commented, would have resulted in a uniform mental qualification standard to regulate entry into ROTC, OCS, and the USMA.[52]

FLYNN EFFECT

The Flynn Effect, named after the American expatriate political science professor at the University of Otago in New Zealand, is the demonstrable trend of intelligence quotient (IQ) test score gains in countries all over the world for the past few decades.[53] Most surprisingly, these IQ test score gains are greatest on those IQ tests which are the most heavily *g*-loaded and have coincided with measureable declines in standardized test scores (such as the SAT). Such findings call into serious question the validity of IQ tests as actual assessments of intelligence. Critics of IQ testing latched onto this as proof of the invalidity of the concept of intelligence and of the invalidity of intelligence testing. They reference improvements in education, better test taking skills, the growing complexity of environments over time, and improved nutrition as possible causal agents.[54] None of these explanations can be dismissed out of hand as there are lines of data and evidence in support of the positions.

Nevertheless, other researchers do in fact question the validity of the Flynn Effect (and not IQ testing). Jan te Nijenhuis and Henk van der Flier, in a meta-analysis, provide evidence that the factors which influence black/white group differences are quite different from those which influence the Flynn Effect, thus casting doubt that the Flynn Effect actually references a true increase in psychometric *g* worldwide over the past few decades.[55] Joseph Rodgers as well as Thomas Teasdale and David Owen offer helpful critiques (helpful in the sense of recommending research strategies and designs that can help clarify the nature of the Flynn Effect as well as its causes.[56] Rodgers reanalyzed some of Flynn's original dataset and concludes that the data "are as consistent with a changing IQ variance as with a changing mean."[57] Teasdale and Owen, meanwhile, present evidence that IQ and standardized test scores are beginning to decline, thus perhaps signaling an end to the Flynn Effect.[58]

While a fascinating topic for psychometrists and researchers studying human intelligence, the Flynn Effect does present a concern for the U.S. Army. To the degree that tests might not actually measure what we believe they measure (i.e., be invalid), they lose their ability to tell us why someone might or might not serve well in a particular MOS or branch. It is possible that an invalid test might correlate strongly with a desired outcome, and hence be predictively useful, but that is a different matter from being able to explain why there is such a relationship in the first place. Additionally, without this kind of understanding, it becomes almost impossible to make informed adjustments to the test in the future or to offer coherent explanations for why certain people were or were not selected for various positions. The Flynn Effect, although if great theoretical interest, necessitates a practical resolution.

Worries about the lack of mental screening mechanisms arose, in part, from what Army leaders perceived as a performance gap between the capabilities of the Army's systems and the capabilities of its Soldiers. Technological advances, in other words, had outrun the Army's human talent. This gap had to be closed if the United States was to sustain a high level of military readiness. The Army's decision not to use the OSB, or some similar test, as an entry-screening device left ROTC without a standard mental qualification test. Because the SAT/ACT was not part of the admissions process at many colleges and universities, the use of these tests could not be applied equitably and uniformly throughout the entire ROTC institutional base.[59] The Army began the development of another cognitive test—the Achievement Test Program—that was designed to measure reading ability, English expression and mathematical skills and be used as a screening device for admission into the ROTC Advanced Course. This initiative, however, was never implemented. It floundered for the same reasons that had led to the rejection of the OSB as a vetting tool.[60]

While the OSB was never used as a screening device, it was employed to identify cadets in need of additional training in basic academic skills. Although failure rates at branch Officer Basic Courses declined after 1980, the loss of even a few officers at that point represented a waste of time, money, and energy. Moreover, the Army remained troubled about the disproportionately large number of OBC failures among students commissioned through certain ROTC programs. Since many of the students came from economically disadvantaged backgrounds, it seemed likely that that their latent academic abilities had not been

fully developed. Accordingly, TRADOC's ROTC chief asked the Army Research Institute to come up with a program to train certain academic skills in the ROTC program. The program selected was named Instrumental Enrichment—later to become the Enhanced Skills Training Program. A pilot test of this program was conducted in 12 ROTC units during the 1982-83 academic year.[61] The Enhanced Skills Training Program was later expanded throughout the ROTC program. The ROTC assigned cadets to this program who had been identified as having problems with basic literacy or numeracy skills as demonstrated by a substandard performance on the OSB.

OFFICER CANDIDATE SCHOOL (OCS)

Since the Korean War, the evolution of testing in OCS had followed a path similar to that followed in the ROTC and at the USMA in that non-cognitive instruments assumed an increasing salience over time. One such non-cognitive instrument was the Officer Leadership Qualification Inventory (OLI), which was adopted by the Army in 1956. This instrument, a self-description questionnaire, borrowed items from several other questionnaires and surveys that were adjudged to have proven their predictive reliability in the past. The OLI proved reliable in forecasting attrition rates in OCS and leadership performance as an officer. Additional study eventually resulted in the development of a new pre-commissioning vetting instrument, the CEB, which was first used in 1975. (It had the same name but was different from the screening test used in the ROTC.) The Army learned that OCS applicants with "longer enlistment service

performed better than expected on many measures such as Combat Leadership and Career Intent."[62]

When the RETO group published its report in 1978, OCS admissions standards were as follows: (1) candidates had to have completed 2 years of college or have received a 2 year college equivalency evaluation by the Department of the Army; (2) they had to score at least 110 on the GT test; women had to score at least 115; (3) they had to score at least 115 on the Officer Candidate Test (OCT); and (4) they had to attain "a minimum composite score of 200 on the OCT and the Officer Qualification Inventory (OQI)."[63]

In 1979, the CEB's validity was confirmed. At the same time, the test was officially authorized for use in OCS and renamed the OSB. (Although both had the same name and both were developed by ARI, the OSB for OCS [OSB 1 and 2] was not the same one adopted by the ROTC [OSB 3 and 4] several years later.) The OCS program transitioned to the OSB in the early 1980s.[64]

The elements used in the OCS selection process included the Army Physical Fitness Test (on which applicants had to attain a passing score), college GPA (if applicable), letters of recommendation from former teachers, professors, or supervisors, college major (if applicable), and an interview by a board (usually at the battalion level). The aptitude measures used in the OCS selection process were the OSB 1 and 2 and the GT composite from the ASVAB, on which applicants had to attain a score of 110 or above. As in the PAS in ROTC, these various elements were not weighted but all were "reviewed in a whole person evaluation."[65]

The version of the OSB used in OCS was made of seven subtests, three of which were cognitive and four of which were non-cognitive. The following formed the cognitive portion of the battery:

- Combat Leadership (military tactics, practical skills in areas such as outdoor activities and mechanical applications);
- Technical-Managerial Leadership (history, politics, culture, math, physical science); and,
- Career Potential (technical knowledge related to military requirements).

The following formed the non-cognitive portion:

- Combat Leadership (combat leader qualities, job interests, sports interest, outdoor interests);
- Technical-Managerial Leadership (interest in math and science, urban versus rural background, decisive leader qualities);
- Career Potential (Clerical-admin interest versus white collar interest, combat interest); and,
- Career Intent (intention of making the Army a career).

Only the Technical-Managerial Leadership from the cognitive subtest was employed as an entry screen.[66]

The first step in the selection process was to ascertain which candidates attained passing scores on the GT test (110) and the Technical-Managerial Leadership (Cognitive) subtest of the OSB. Candidates failing that hurdle were eliminated. The applications of candidates who passed the tests were sent to a selection board, which would rate each applicant. These ratings would be expressed in the form of a numerical value and the highest rated individuals would be selected. The number of individuals selected would vary according to the Army's needs at the time.[67]

This OCS selection process was abbreviated in the late 1980s when the OCS-version of the OSB was eliminated. After its elimination, no other selection tool was developed to replace it. From then on, the OCS

operated without a dedicated screening instrument.[68] As we shall see, the OSB for the ROTC would follow suit in the mid-1990s.

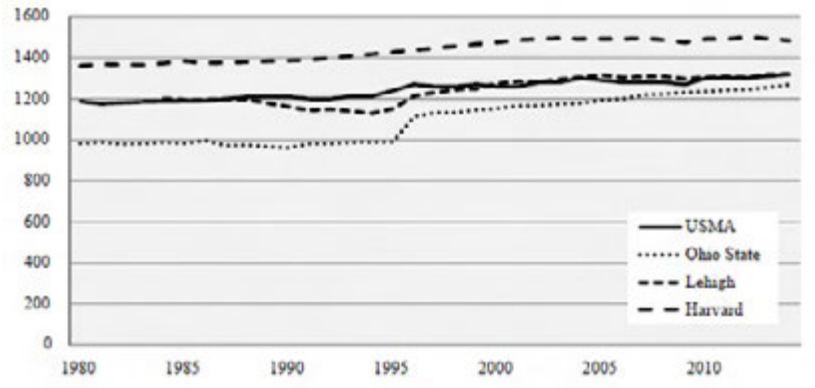
After the early 1980s, researchers dedicated little effort to the selection of candidates into OCS. This contrasted sharply with the substantial work done on OCS in the 4 decades or so before that year. According to Michael Rumsey, the Army placed "the greatest emphasis on OCS selection research . . . between 1941 . . . and 1957." Rumsey notes how, over the course of this period, the emphasis went from measuring the "cognitively oriented aspects of officer candidates, such as general cognitive aptitude, data interpretation, arithmetic reasoning, and reading comprehension" to assessments that employed "alternative approaches (e.g., biographic self-reports and structured interviews) to predict leadership performance" as a junior officer as well as career motivation.[69]

Thus, the development of testing in the OCS program generally mirrored that done in the ROTC. The rigor of cognitive testing was diluted while more emphasis was placed on non-cognitive testing in an attempt to promote better performance as junior officers and better retention in the Army after commissioning.

WEST POINT

Between the advent of the AVF in 1973 and the end of the Cold War in the early 1990s, West Point continued its qualitative decline relative to America's most competitive schools. By the mid-1980s, West Point stood between Harvard and Penn State on the qualitative index of competitive colleges (see Figure 8-3). This was admittedly still a respectable position but it represented a decided step down from the halcyon days of the Academy prior to World War II.

In Figure 8-3, we provide more recent average SAT scores for students at West Point and a list of comparison schools (Harvard, Ohio State, and Lehigh). These civilian schools represent public and private peer or near-peer institutions for West Point. As the data shows, since the 1980s, the average scores at West Point have increased at approximately the same rate as those at Harvard and Lehigh (with a small dip in Lehigh's scores during the early 1990s). However, West Point's relative scores have not increased at the same rate as Ohio State's. In fact, the average scores of the USMA and Ohio State have nearly converged as of the mid-2010s.



Note: The figure above displays the average SAT by school by year. USMA data from 1995-2014 was obtained from internal USMA database and displays median SAT scores (or estimated SAT scores using ACT scores). Harvard data for 2001-14 is estimated as the midpoint of the 25th and 75th percentiles using Integrated Postsecondary Education System (IPEDS). Harvard data from 1987-90 and 1992-2000 and USMA data for 1982 and 1984-85 are linear estimates from surrounding years. All other data is provided by respective college archivists. Data for Lehigh prior to 1984 was unavailable.

Figure 8-3. Average Total SAT Scores by School.

West Point made several changes to its admissions testing program just as the Army converted to an AVF in the early 1970s—changes that generally reflected a deteriorating admissions standard. In 1972, the USMA began accepting ACT program test scores in lieu of College Entrance Examination Board (CEEB) examination.[70] In 1973, an even more momentous adjustment was made to the admissions process—namely, the elimination of the use of achievement tests. On January 18, 1973, the Academy's Academic Board approved the Admissions Committee's proposal that West Point candidates no longer be required to take the College Board Achievement Tests (a requirement that had been in place since 1954). From then on, candidates for admission would only be required to take the College Board SAT or the ACT to determine their academic qualification.[71]

The Academy's official explanation for its decision to eliminate the achievement tests as an admissions requirement was that these tests had only limited usefulness in predicting success as a cadet, that they were too expensive, and that they added too much complexity to and unnecessarily slowed down the admissions process.[72] These considerations certainly played a part in the decision but minority recruitment was undoubtedly also a factor. West Point in the era of the AVF was very concerned with boosting minority (and especially African American) admissions. African Americans as a group did not attain high scores on these tests. Thus, eliminating the achievement tests as an admissions screen would facilitate the acceptance of minority candidates into the Academy.[73]

The selection process at West Point was regulated by the whole candidate score (WCS). This score was calculated from the following factors: (1) academic

aptitude—60 percent; (2) leadership potential[74]—30 percent; and (3) physical aptitude[75]—10 percent. The evolution of the WCS was obscure since, as Brown observed, documentation about its development, to include the importance attached to each component, was lacking. The WCS underwent a major revision in 1973, coincident with the adoption of the AVF, although the idea of the whole man score, as we have seen, dated back to 1958.[76]

The academic aptitude portion of the WCS is the portion of the process most pertinent to this study. The score on this component was calculated by combining a candidate's SAT score with his high school rank or by combining a candidate's ACT score with his high school rank. In the former case, it was called a CEER score while in the latter, it was called an ACEER score. If a candidate took both exams, the test that gave the highest score was the one used.[77] West Point had no firm cut-off score for the SAT or the ACT; the Academy may have specified a minimum score, but it did not strictly enforce it. Standards for these standardized tests varied according to the number and quality of applicants.[78]

The files of the candidates who had been determined to be qualified (provided that they received a nomination, of course) were sent to the admissions committee for a final decision. The committee at this time was comprised of a number of junior and senior officers who were on the staff or faculty of the USMA. The admissions decision itself, although constrained by the number of openings in the entering class, was largely subjective. Committee members evaluated the files of candidates and selected the ones that they felt were most qualified.[79]

THE PURSUIT OF QUALITY

During the 1970s and 1980s, as West Point struggled to attract the nation's most academically talented high school students, it steadily increased the money it spent on advertising while its recruiting and marketing efforts became "increasingly extensive and complex."[80] It could no longer rely on its sterling reputation and fame to attract candidates into its ranks as it once did. Now, it had to compete with institutions that had more to offer, in a material and prestige sense at least. The Academy continued to lag behind the nation's most selective civilian institutions and consequently felt a need to be more aggressive in attempting to get its share of intellectual talent. More commercial agencies and firms were contracted to produce publications advertising West Point, run marketing efforts, and conduct research into the best ways to entice the nation's best and brightest into the Academy.[81]

West Point was particularly aggressive in pursuing minority candidates. Two of the most ambitious and widely known of the Academy's minority recruiting initiatives were the Cadet Summer Enrichment Program and Project Outreach. Under the latter program, minority officers traveled to all parts of the country to promote greater appreciation of the "opportunities provided for minority members at USMA."[82] The Summer Enrichment Program, a joint venture of West Point and the National Urban League, also put cadets in touch with African-American youth in America's inner cities in an attempt to inform them about and induce them to apply to the USMA.[83]

During the 2 decades separating the end of the Vietnam War and the fall of the Soviet Union, the Army continued to emphasize retention at West Point

and, once commissioned, retention in the Army in its candidate admissions process. It was pushed into doing so by a cost-conscious Congress and Board of Visitors, which generally reflected Congressional concerns and opinion. Indeed, many members of congress were on that board. Accordingly, major thrusts of the Academy's research efforts centered on identifying the causes of cadet attrition (which stood at 33 percent in the mid-1980s), measuring the career motivation of cadets and applicants, and developing more accurate instruments to predict leadership ability and, in this way, improve the performance of graduates after entering the Army. It adopted the Strong Vocational Interest Blank as a tool to identify applicants who were very likely or very unlikely to graduate. The Strong Vocational Interest Blank had proved its utility at the Naval Academy, the Air Force Academy, and the Coast Guard Academy, and West Point was certain it could help it achieve its admissions goals. The Academy also developed a retention index as an admissions criterion using the Strong-Campbell Interest Inventory. The purpose of this effort was to identify cadets with high career motivation, that is to say, students likely to stay in the Army for a career.[84]

To organize its admissions efforts with a view toward maximizing retention at the Academy and in the Army, the Academy developed a tri-partite admissions scheme. That scheme, which operated within the parameters of the WCS, consisted of three categories—scholars, leaders, and athletes. Scholars were selected principally on the basis of their SAT scores and their high school GPAs; leaders, for their activities in high school and in the community; and athletes for their prowess in sports. Leaders and athletes had a higher likelihood of staying the course at the Academy and

remaining in the Army for a career than scholars, who had more opportunities at other civilian institutions while cadets and more opportunities in the job market once in the Army.[85]

West Point's efforts to boost cadet retention at the Academy and graduate retention in the Army apparently resulted in a drop-off in intellectual standards. Lieutenant General Willard Scott noted in his 1981 annual report that he wanted to ensure that "candidates selected for admission gave evidence of superior academic potentialities." He did this to ensure that West Point produced officers with cognitive abilities that would permit them to succeed in graduate school. At the time, the Army was emphasizing graduate education for officers. The military profession and the world were becoming increasingly complex and officers allegedly needed a greater degree of intellectual preparation to operate successfully in this environment.[86]

However, there was some doubt that the Academy was fostering high levels of intellect and developing "superior academic potentialities" in cadets. Officials noted that the attention given to academics by many cadets was "insufficient to achieve the desired degree of excellence." Cadets reportedly relied on the "supportive academic environment," with its unlimited additional instruction and its lenient grading standards to get them through the Academy and did not "devote the individual attention that academics warrant."[87] Academy officials also believed that West Point had set its standards for performance on standardized tests too low. They stressed the importance of meeting admissions goals in the scholar category and of reducing the large number of high-risk candidates being admitted—both of which could be addressed by

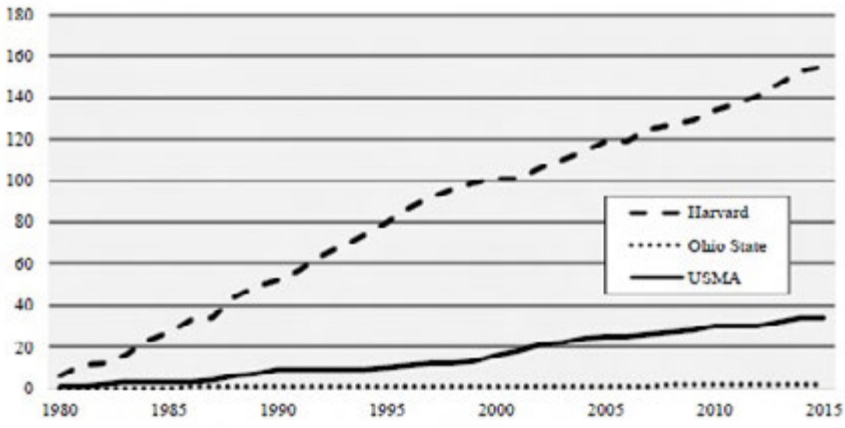
raising minimum scores on the SAT and ACT.[88] They explored a proposal to adopt some form of averaging when candidates submitted multiple SAT scores instead of using the applicant's highest score on the SAT or ACT in their evaluation of cadet candidacies. They also considered establishing firm cutoff scores on both of those standardized tests.[89] West Point actually did raise the cutoff or minimum qualifying score on the verbal portion of the ACT. It raised that score from 19 to 20 in 1984. An ACT score of 20 corresponded to a SAT score of 480. It did not alter the minimum math score, however. That mark remained at 23 for the ACT and 510 for the SAT.[90]

USMA officials believed that their quest to create a more intellectually capable Corps of Cadets was limited by two principal factors. First, there were troubling demographic trends that were reducing the number candidates available. Since the late 1970s, the college-age cohort had been shrinking and would continue to do so, demographers projected, until the late 1990s.[91] Second, West Point was facing competition from other colleges, which was reducing the pool of candidates available. The USMA's strongest competition came from the other service academies. The Air Force, Navy, Coast Guard, and Merchant Marine Academies attracted the same basic type of candidate as West Point but were generally more attractive to high school applicants than the USMA.[92] West Point, Academy officials concluded, had to secure more resources to support "an energetic admission's effort," an effort that was seen as being increasingly crucial in a very competitive admissions environment and in the face of a demographically declining pool of applicants.[93]

Although West Point showed some concern with intelligence standards in era of the AVF, that concern was overshadowed by other concerns that proved to be far more powerful and salient. Retention at the Academy, retention in the Army, minority recruitment, the recruitment of women, and graduate performance in the Army (as reflected in such metrics as promotion rates) were all issues that had much more immediacy than standardized test scores. Attrition at West Point, attrition in the Army, and poor performance as a cadet or an officer all resulted in a waste of tax dollars. Failure to make minority and women representation goals also had negative consequences. The Congress and the nation expected the USMA to be representative of the people it served. The problem was that pursuing all of these aims simultaneously placed mental admissions standards and the pursuit of academic excellence on the back burner since there was an inverse relationship between very high standardized test scores, on the one hand, and retention in the Army and minority and female recruiting, on the other. The leadership potential of cadets seemed to be of more import in determining success as a junior officer than intellectual ability. That is why, perhaps, the Academy spent greater effort attempting to create "improved measures of leadership potential" than it did trying to raise the SAT average of the Corps of Cadets. The Academy was intent on selecting "the most appropriate candidates for the officer corps," not necessarily the most intelligent applicants.[94]

There is some evidence to suggest that the USMA enjoyed at least a measure of success in attracting students with abundant leadership ability as well as academic prowess into its Corps of Cadets. One indication of this was the relative success enjoyed by West Point

in the competition for Rhodes Scholarships. In Figure 8-4, we depict data on the number of Rhodes Scholarship winners at West Point relative to the same group of peer or near-peer institutions. The data show that since 1980, West Point has outpaced Ohio State and Lehigh in this competition, but has fallen behind Harvard. This suggests that the most gifted scholar-leaders (approximated by these scholarships) at West Point are doing well relative to some very competitive institutions but falling behind the nation's most elite universities like Harvard.



Note: The figure above displays the cumulative number of Rhodes Scholarships from 1980-2015 awarded to students at Harvard, Ohio State, and USMA. Lehigh is excluded from this graph because no Lehigh student has won the scholarship since 1980.

Figure 8-4. Cumulative Count of Rhodes Scholarship Winners by School Since 1980.[95]

CONCLUSION

All three of the Army's main commissioning sources experienced a similar evolution in the post-Vietnam era, at least as far as testing was concerned. West Point, ROTC, and OCS all witnessed a dilution of mental standards and an increased emphasis on non-cognitive measures of career motivation and success. ROTC adopted a less rigorous test of mental ability in 1972, and then essentially abandoned cognitive testing for screening purposes in the 1980s. The OCS program adopted a less rigorous test in 1979, and then abandoned that test in the late 1980s, leaving a GT score of 110 (which was waiverable by the way) as its only mental screen. West Point eliminated the College Board math and English achievement tests as an admissions requirement in 1973. At the same time, all three sources increased the emphasis they placed on retention in the Army and performance as a junior officer in their selection methods. They introduced non-cognitive interest inventories and biographical surveys to accomplish this end.

ENDNOTES - CHAPTER 8

1. Arthur T. Coumbe, Lee S. Harford, Jr., and Paul N. Kotakis, *The U.S. Army Cadet Command: The 10 Year History*, Stillwater OK; New Forums Press, 2009, p. 22. West Point accounted for 3 to 4 percent of officer accessions into the active Army in the years before Vietnam.

2. Arthur T. Coumbe, *A History of the U.S. Army Officer Corps, 1900-1990*, Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2014, p. 45.

3. Coumbe, Harford, and Kotakis, p. 28.

4. Ibid.; U.S. Military Academy (USMA), *Annual Report of the Superintendent of the United States Military Academy*, Washington, DC: U.S. Government Printing Office, 1979, p. 34. Hereafter, all USMA annual reports referred to as the USMA, *Annual Report of the Superintendent* along with their corresponding year.

5. Donald Lloyd Cummings, "Army ROTC: A Study of the Army's Primary Officer Procurement Program, 1862-1977," Ph.D. dissertation, University of California, Santa Barbara, 1982, p. 118.

6. Michael G. Rumsey and E. Sue Mohr, *Male and Female Factors on the Cadet Evaluation Battery*, Technical Paper 331, Alexandria, Virginia: U.S. Army Research Institute for the Behavioral and Social Sciences, September 1978, p. 1.

7. Lewis Sorley, ed., *Press On! Selected Works of General Donn A. Starry: Volume I*, Fort Leavenworth, KS: Combat Studies Institute Press, U.S. Army Combined Arms Center, 2009, p. 604-605; Beth Bailey, *America's Army: Making the All-Volunteer Force*, Cambridge, MA: Belknap Press of Harvard University Press, 2009, pp. 184-188.

8. J. J. Card and W. M. Shanner, *Development of a ROTC/Army Career Commitment Model: Management Summary Report*, Palo Alto, CA: American Institutes for Research, March 1976, pp. 28-29, 36, 39.

9. J. J. Card, B. E. Goodstadt, D. E. Gross, and W. M. Shanner, *Development of a ROTC/Army Career Commitment Model, Final Report: Volume I*, Palo Alto, CA: American Institutes for Research, 1975, p. 266.

10. Office of the Chief of Staff, *A Review of Education and Training for Officers (RETO): Volume I*, Washington, DC: Headquarters, Department of the Army, May 1978, pp. I-2; III-2; V-2. Hereafter cited as RETO Report, and its corresponding volume. See also RETO Report, Vol. 2, p. C-1-7.

11. RETO Report, Vol. 2, p. C-1-6.

12. Ibid., p. C-1-7.

13. Ibid., pp. C-1, C-1-1. "With three out of four students entering college as freshmen eventually graduating, and with less than three of every ten ROTC [Reserve Officers' Training Corps] students completing the ROTC program," the study group observed, "addition qualitative standards were necessary."

14. Ibid., p. C-1-5.

15. Ibid.

16. Ibid.

17. Coumbe, p. 24.

18. For more information on the Barron's rankings, see *Barron's Profiles of American Colleges*, 28th Ed., Hauppauge, NY: Barron's Educational Series, Incorporated, 2008, pp. 247-258.

19. These examples use 2009 data from "Ranking Colleges by Selectivity," *The New York Times*, April 4, 2013, available from *www.nytimes.com/interactive/2013/04/04/business/economy/economix-selectivity-table.html*, accessed October 6, 2017; and date from the website of Center for Public Education, available from *www.centerforpubliceducation.org/*, accessed October 6, 2017.

20. Some ROTC leaders have suggested that the ROTC program draws disproportionately from the bottom portions of the distribution at many colleges.

21. Arthur T. Coumbe and Lee S. Harford, *U.S. Army Cadet Command: The 10 Year History*, Fort Monroe, VA: Office of the Command Historian, U.S. Army Cadet Command, 1996, p. 37.

22. Charles W. Bagnal, dir., *Professional Development of Officers Study, IV: Development Periods*, Washington, DC: Office of the Chief of Staff of the Army, 1985, p. AA-1. Hereafter referred to as PDOS.

23. Coumbe and Harford, pp. 150-151.

24. Ibid., p. 151.

25. Ibid., p. 47.

26. Wilson Barnes, dir., *Reserve Officers' Training Corps (ROTC) Study Group Report, Volume I - Main Report*, Washington, DC: Office of the Chief of Staff of the Army, May 1986, p. 10-14.

27. Coumbe and Harford, p. 58; USMA, *Annual Report of the Superintendent*, 1982, p. 63.

28. Coumbe, p 43.

29. Barnes, p. 1-5.

30. Diane C. Brown, "Officer Aptitude Selection Measures," in Martin F. Wiskoff and Glenn M. Rampton, eds., *Military Personnel Measurement*, New York: Praeger, 1989, pp. 103-104.

31. Ibid., p. 104.

32. Ibid.

33. Ibid., pp. 104-105.

34. Ibid., p. 105.

35. Barnes, p. 1-5.

36. PDOS, p. AA-1-1.

37. Ibid., p. AA-1-2.

38. Ibid.

39. Ibid., pp. AA-1–A-1.

40. The following several pages contain quotes from studies written by Michael Rumsey and Sue Mohr, who were both social scientists employed by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI). See Rumsey and Mohr, *Male and Female Factors on the Cadet Evaluation Battery*, pp. Foreword, 1; E. Sue Mohr and Michael G. Rumsey, *Cadet Evaluation Battery: A Comparison of 1975 Male and Female Scores with one Another and with 1971 Male Scores*, Technical Paper 330, Alexandria, Virginia: U.S. Army Research Institute for the Behavioral and Social Sciences, September 1978, p. 1.

41. Rumsey and Mohr, *Male and Female Factors on the Cadet Evaluation Battery*, p. 1.

42. Ibid., pp. 1-2.

43. Mohr and Rumsey, *Cadet Evaluation Battery*, p. 1.

44. Ibid., p. 5.

45. Ibid., p. 7. The 1975 sample, it should be pointed out, encompassed students in the 2-year ROTC program as well as other cadets enrolled in military science (MS) II. An acquaintance with ROTC training might be expected to improve scores on the combat cognitive scale, which has a number of items on military tactics. However, such exposure should have had no effect on the technical/managerial cognitive scale, which was made up of history/politics/culture and math/physical sciences subtests. Because the cognitive technical/managerial scores decreased to an even greater extent than the cognitive combat scores between 1971 and 1975, it does not appear that the inclusion of 2-year applicants was primarily responsible for the overall cognitive score deterioration.

46. Ibid., p. 7.

47. PDOS, p. AA-1-2.

48. Ibid.

49. Ibid.

50. Ibid., pp. AA-1–A-2.

51. Ibid.

52. Ibid.

53. James R. Flynn, "The Mean IQ of Americans: Massive Gains 1932 to 1978," *Psychological Bulletin*, Vol. 95, No. 1, 1984, pp. 29-51; James R. Flynn, "Massive IQ Gains in 14 Nations: What IQ Tests Really Measure," *Psychological Bulletin*, Vol. 101, No. 2, 1987, pp. 171-191.

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71. USMA, *Annual Report of the Superintendent*, 1973, pp. 6-7. Although the USMA initiated this proposal to change the examination requirements, the Naval, Air Force, Coast Guard, and Merchant Marine Academies also adopted this change.

72. Ibid., p. 7.

73. Ibid., p. 5.

74. Leadership potential was gauged by the quality of a candidate's involvement in extracurricular and community activities.

75. Physical aptitude was measured by the Army's Physical Aptitude Examination.

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91. USMA, *Annual Report of the Superintendent*, 1988, p. 1.

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94. USMA, *Annual Report of the Superintendent*, 1984, pp. 65-66.

95. All data sourced from the Rhodes Scholarship website, an archived version of the complete list of Rhodes

Scholars from 1902-2015 is available from *https://web.archive.org/web/20160727040756/http://files.www.rhodesscholarshiptrust.com:80/about/rhodes-scholars/rhodes-scholars-complete-list/NEW_Version_current_November_2015_for_website.csv*.

CHAPTER 9:
OFFICER TESTING IN THE POST-COLD WAR ERA

OFFICER ACCESSIONS IN THE 1990s

The Army initially heralded the post-Cold War demobilization as a boon to officer accessions. Army leaders assumed that a smaller force would lead to a higher quality of lieutenant. This rise in selectivity, however, did not occur, save for a short-lived uptick immediately after the dissolution of the Soviet Union. By the mid-1990s, in fact, the Army was struggling to produce enough officers to meet its needs through its collegiate-based commissioning programs. Not once did the Reserve Officers' Training Corps (ROTC), the Army's largest source of officers, make its officer accessions mission between 1993 and 2003.[1] In such an environment, the Army could not afford to be too concerned with quality—and it was not.

Three principal factors combined to produce this situation. First, the economy improved and the unemployment rate decreased. That rate fell by 4 percent—from 7.8 to 3.8 percent—between June 1992 and April 2000. Anytime the unemployment rate dips below 6 percent, the services have recruiting problems.[2] Second, in an effort to realize a peace dividend, the Congress cut defense spending along with the ROTC scholarship budget. This negatively affected the ability of Cadet Command and, to a lesser extent, the other commissioning sources, to attract high-quality talent into their ranks. Third, the Army reduced officer accessions too much—to a point, in fact, where the

Army's officer needs were not being met. This was due to both economic considerations and equity issues.[3]

As the drawdown began, Army leaders remembered what happened after the Vietnam War when many combat experienced officers were summarily released from the Army by a reduction in force (RIF)—to accommodate Department of Defense demobilization goals. To some, the Army's heartless actions represented a betrayal of trust. In the early 1990s, Congress feared a reprise of the demobilization imbroglio after Vietnam. It became concerned that the men and women who had just defeated Saddam Hussein and his army would be cast aside and left to fend for themselves in a labor market in which many of them were unprepared to compete. Wanting to prevent another betrayal of trust for the nation's service members, Congress inserted into the fiscal year (FY) 1991 National Defense Authorization Act a provision directing the Army to reduce officer strength by lowering new accessions, not by cutting experienced officers.[4] This not only hurt officer production in the short run but also clouded the long-term officer recruiting outlook by sending the message that the Army wasn't hiring anymore.[5]

Changes in Cadet Command's scholarship management system exacerbated the ROTC's production problems, especially in a qualitative sense. Before 1998, 4-year scholarship applicants were selected by a centralized board, which met at Cadet Command Headquarters in Fort Monroe, Virginia. Under this system, winners could use their scholarships to attend the school of their choice. In 1998, Cadet Command converted to the Campus Based Scholarship Program. This new scheme required candidates to apply directly to individual ROTC units. This change was intended

to cut expenses by holding the number of scholarship positions at each school constant and thus better controlling costs. It also gave Professors of Military Science (MS) more control over scholarship management at their institution.[6]

An unintended consequence of the new Campus Based Scholarship Program was a severe constriction of the candidate's options. A student winning a scholarship at Ohio State but who was accepted at Vanderbilt without an ROTC scholarship faced a dilemma. Compelling a student to choose between an unfunded education at their school of choice, versus an ROTC scholarship at the second or third choice substantially reduced the allure of ROTC scholarships. Students who compared Army scholarships with the scholarships of the other services, which continued to use a centralized selection system, found the former wanting. The Army ROTC consequently lost out on attracting many top students into the program.[7]

With its officer accessions capabilities thus constrained in its two collegiate-based commissioning sources, the Army turned to Officer Candidate School (OCS) to make up the officer deficits. The shift toward OCS began in 1998 as a response to the difficult officer accessions environment that prevailed at the end of the century. The Army's reliance on the OCS grew thereafter. The OCS share in officer accessions increased from 9 percent in 1997 to nearly 40 percent by 2008. Several factors accelerated this development.[8] The two most important, perhaps, were (1) the troop strength increases resulting from the global war on terrorism and (2) the Army's adoption of modularity, an organizational scheme designed to reduce stress on the operational force.[9]

At the beginning of the OCS expansion in 1998, the Army relied primarily on the OCS in-service program, which obtains its candidates from the enlisted ranks. When OCS in-service reached its maximum commissioning capacity mid-way through the 1st decade of the 21st century, the Army increased its use of the OCS Enlisted Option program, which brings college educated civilians into the officer corps. After 2006, OCS Enlisted Option accounted for about 60 percent of all officers produced through OCS.[10]

OFFICER ACCESSIONS IN A NEW CENTURY

The officer accessions situation improved significantly after the turn of the century. The ROTC finally made its mission in 2003, the first time it had done so in over a decade. A number of measures worked together to improve the officer accessions picture. For one thing, a series of military pay raises brightened ROTC's recruiting prospects. In the late 1990s, defense analysts and congressional leaders had warned about the deleterious effects that the civilian-military pay gap was having on recruiting, retention, and the quality of the force. Congress enacted legislation to reduce or eliminate this gap. Even more importantly, the nation's unemployment rate shot up sharply in 2001. That rate peaked in 2003. Moreover, as already noted, a high unemployment rate provides a great boost to recruiting. Additionally, after the events of September 11, 2001, the national mood was more supportive of the military's accessions efforts. The bombing of the Twin Towers set off a wave of patriotic enthusiasm that increased the propensity to serve.[11]

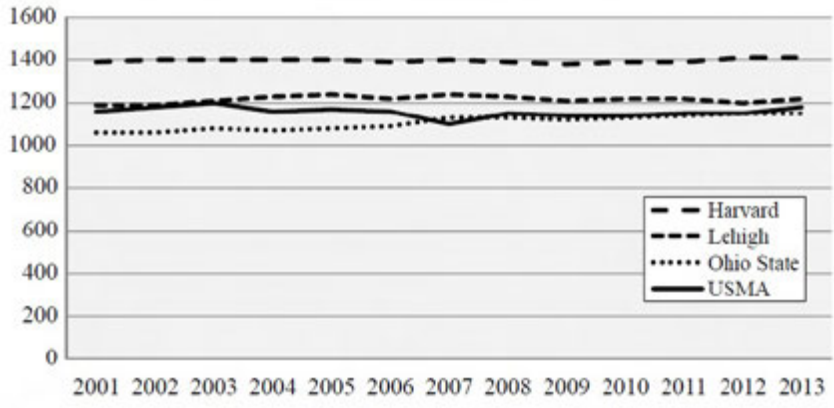
Internally, the Army took a number of measures to raise officer production. For example, Cadet

Command adopted recruiting as its top priority. Recruiting soon overshadowed all other aspects of the ROTC program. ROTC cadre were made to understand that making mission, not training for Advanced Camp, was their principal focus. The Department of the Army helped the ROTC recruiting campaign by increasing the number and value of incentives available to Cadet Command. The value of the ROTC monthly stipend, for example, more than doubled between 1997 and 2002.[12] In addition, the command benefited from a generous injection of scholarship dollars. Between 1998 and 2002, the ROTC scholarship budget increased by 45 percent (from $64.7 million to $94.3 million).[13]

The Army's lowering of accessions standards and the erosion of quality markers also helped raise officer production. During this period, the number of waivers issued by the commissioning sources shot up sharply while scores on standardized tests like the SAT (formerly known as the Scholastic Aptitude Test) and the Armed Services Vocational Aptitude Battery (ASVAB) declined. At the U.S. Military Academy (USMA), the slide away from elite status continued. With the re-norming of the SAT in 1995, SAT scores at institutions such as Ohio State shot up sharply. The average score at the USMA, on the other hand, remained almost flat. This was tantamount to a decline in test scores. The de facto decline in scores allowed schools like Ohio State, which in the 1980s was substantially below the USMA in terms of the selectivity of undergraduate admissions, to rise up to West Point's level of undergraduate selectivity.

In Figure 9-1, we elaborate on West Point's continuing fall from elite status by providing data on the intellectual ability of the lower quartile of students at

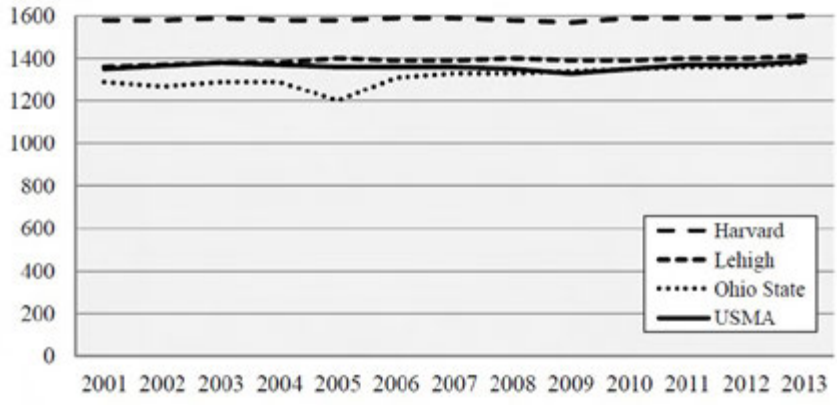
West Point and select institutions since 2001 (based on data availability from the Integrated Postsecondary Education System [IPEDS]). We explore these trends to identify if the trends in the average measures discussed above (see Figure 8-3 in Chapter 8) are hiding changes in the variance of the data. The data show that since 2001, the 25th percentile score at West Point declined slightly and then increased to initial levels in absolute terms. In addition, it has fallen relative to Lehigh and Ohio State, both of which increased their 25th percentile scores over time. The changes are small but suggest that even if West Point cadets are keeping pace on average, they are also falling behind in the lower quartile of the distribution.



Note: The figure above displays the 25th percentile of total SAT scores by school and by year. All data was obtained through IPEDS.

Figure 9-1. 25th Percentile of Total SAT Score by School.

In Figure 9-2, we provide another set of data on the intellectual ability of students at West Point and other institutions, this time using the upper quartile of students. The data show that since 2001, the 75th percentile score at West Point has been relatively stable in absolute terms. However, it has fallen relative to Ohio State. When we combine these SAT score analyzes (mean, 25th, and 75th percentiles), the data suggests that since 2001, the distribution of West Point's SAT scores has been relatively stable relative to Harvard and Lehigh. It has declined slightly relative to Ohio State.



Note: The figure above displays the 75th percentile of total SAT scores by school and by year. All data was obtained through IPEDS.

Figure 9-2. 75th Percentile of Total SAT Score by School.

West Point's move toward lower admissions selectivity occurred while a new leader development model for cadets was being introduced. The new

program was labeled the "developmental" model and was often contrasted with the previous system, which was dubbed the "attrition" model.[14] The word attrition has a very bad connotation in the U.S. Army. It is often used to describe the U.S. strategy in Vietnam, which allegedly relied on massive firepower while discounting more subtle methods of counter-insurgency. Attrition was considered an unimaginative and intellectually bankrupt strategy.[15] The developmental model, which replaced the attrition model, focused on keeping cadets at West Point rather than separating the weak or unsuited. It sounded enlightened and progressive. With the developmental model, not only did West Point eliminate some of the harassment of plebe year, it made an effort to keep students at the Academy who were struggling in the academic and physical arenas. This entailed more instruction and mentoring as well as a greater emphasis on retention. This inevitably led, according to some observers, to a lowering of standards.

It is noteworthy that the attrition rate at West Point has fallen drastically since 1900. That rate in 1900 was 50 percent, with the great majority of eliminations due to academic failure. The washout rate stood at between 30 and 35 percent in the 1960s and 1970s, with the reasons for elimination more or less evenly split between academic failure, on the one hand, and medical, physical, and motivational reasons, on the other. In the 21st century, with the "developmental model" in the ascendance, the attrition rate averages about 20 percent, with the majority of separations being due to non-academic factors. This short historical sketch of attrition rates at West Point suggests that the Academy is not nearly as academically rigorous as it once was.

Major General John T. D. "Rusty" Casey, the commander of Cadet Command from 2000 to 2003, imported a version of West Point's "developmental" model into the ROTC. This meant that Cadet Command would no longer focus on weeding out weak performers; instead, it would concentrate on recruiting the right cadets into the program and developing them to their full potential. Those right cadets that Casey alluded to were the so-called scholars, athletes, leaders—that is, students who possessed the intelligence, physical stamina, and leadership ability to meet the demands of what the Army referred to as the Contemporary Operation Environment. As at West Point, it all sounded rational and progressive. As it turned out, however, the scholar, athlete, leader concept proved to be more important as an ideal than as a reality. While the quantity of officer production increased under Cadet Command's version of the development model, the quality of production trended in the opposite direction. The number of waivers for medical and physical reasons shot up sharply while test scores, especially the test scores of cadets on the lower edge of the quality distribution, sank.[16]

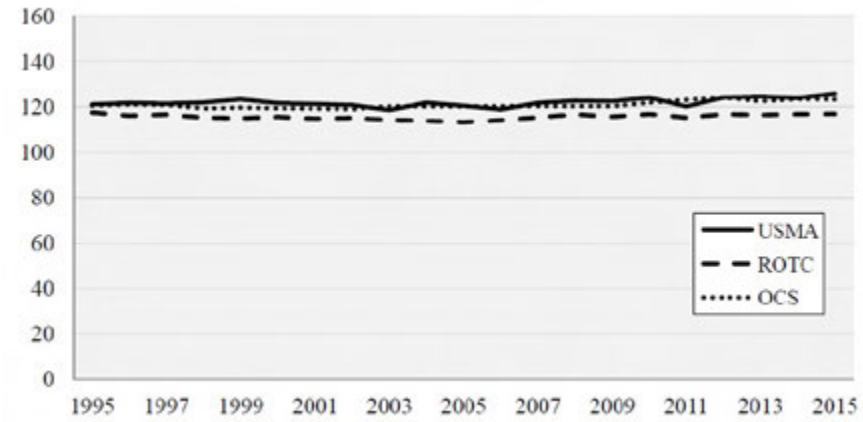
In addition to granting more waivers for medical, physical, and legal reasons, Cadet Command under Casey lowered testing standards to raise officer output. This can be illustrated by considering the results attained from the ASVAB in the early 2000s. Of all the ROTC cadets who took that test during those years, and there were roughly about 1,500 contracted cadets who fell into this category at any one time, between 20 and 30 percent scored lower than 110 (the minimum qualification score for OCS). The percentage peaked in 2005 when slightly over 30 percent of the ROTC cadets who took the ASVAB fell below the OCS

minimum score. To be fair to the ROTC, it must be mentioned that West Point, too, allowed prior-service cadets and others who took the ASVAB to enter their hallowed ranks with scores that fell below 110. The worst year for the Academy in this regard was 2006, when about 25 percent of its ASVAB test takers fell below the minimum OCS mark. Indeed, Cadet Command and West Point both at this time accepted officer aspirants who scored in the Category IV range on the ASVAB—which in enlisted recruiting is the lowest allowable qualifying score.[17]

In OCS, likewise, many waivers were granted for low ASVAB scores. Approximately 2 to 3 percent of its OCS candidates during the most intense period of the Iraq insurgency were classified as Category IVs (the lowest category of recruit eligible for enlistment). In terms of the overall percentage of candidates needing test waivers to enter OCS, the peak year was 2001 when about 8 percent received them. By 2006, that percentage in OCS fell down to the 3 to 4 percent range, although, in absolute terms, the number of waivers was higher than it had been earlier in the decade. The Department of the Army became so concerned with the dropping quality of officer aspirants that it even considered converting the USMA from a 4-year to a 3-year institution. The last time that occurred had been during World War II. Nothing came from this proposal to abbreviate the curriculum at the Academy, but it did illustrate how serious senior Army leaders perceived the officer accessions problem to be.[18]

In Figure 9-3, we depict the average general technical (GT) scores from the ASVAB by the source of commission (SOC). The GT score reflects a combination of an individual's score on three subcomponents of the ASVAB: word knowledge, paragraph

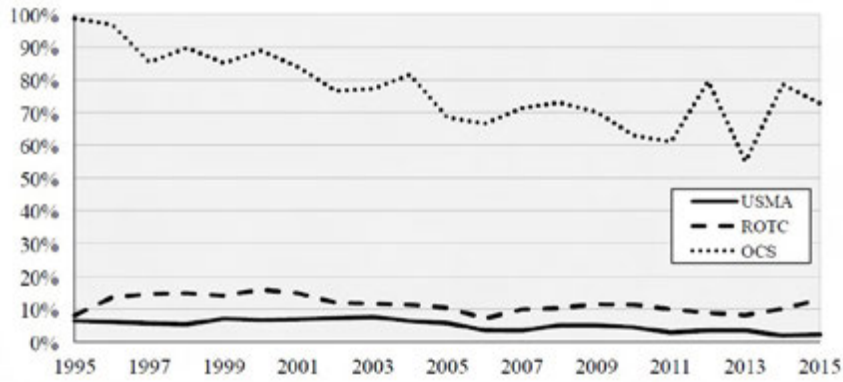
comprehension, and arithmetic reasoning. GT scores are commonly used as a measure of intellectual aptitude. The data reveal that average scores for OCS and West Point cadets have increased slightly over time, and at approximately the same rates. Average scores for the ROTC program have remained relatively constant over time and are lower than those of OCS and the USMA. By way of comparison, a score of 120 on the GT roughly corresponds to a score of 1030 on the SAT. It is important to note that by definition these average scores reflect only the ability of the test-takers. Since the fraction of individuals in each SOC who take the test varies, the test-taking rates are an important complementary source of data. We provide more data on the test-taking rates by SOC below.



Note: The figure above displays the mean GT score by the SOC and by year. All data used in this graph comes from the Officer Master File and includes Active Duty commissions only.

Figure 9-3. Average GT Score by SOC.

In Figure 9-4, we depict the percentage of each SOC with a GT score by year. As expected, OCS has the largest fraction of its officers with GT scores, though that fraction declined by about 30 percentage points between 1995 and 2015. Given that the typical reason for having a GT score is prior service as an enlisted service-member, these individuals will, on average, have lower GT scores than officers who are non-prior service enlistees. The fraction of ROTC officers with GT scores has increased slightly over time (from about 8 percent to about 10 percent). The fraction of USMA officers with GT scores has decreased during this time (about 7 percent to about 2 percent). Combined with the average GT scores analysis provided above, these data suggest that from 1995 to 2015, the estimated average GT scores for individuals in OCS and the USMA have increased, while the average scores for people in ROTC have decreased.



Note: The figure above displays the percent of each SOC with a GT score by year. All data used in this graph comes from the Officer Master File and includes Active Duty commissions only.

Figure 9-4. Percent of SOC with GT Score.

A policy change that lowered mental standards for students in the ROTC program was made in 2006 when the Army reduced the minimum grade point average (GPA) requirement for scholarship cadets from 2.5 to 2.0. The 2.5 GPA requirement for scholarship recipients had been in place for decades. After 2005, scholarship cadets could keep their scholarships and be commissioned if they maintained a 2.0 average.[19] The lowering of the GPA requirement was more harmful than it appeared on the surface because of grade inflation, a phenomenon that has been afflicting the nation's collegiate community for years. While a 2.0 GPA was a sign of academic competence in an earlier era, this was arguably no longer the case by the beginning of the 21st century. It was now commonplace throughout the nation's college community to find A grades being given to over 50 percent of a class "with grades below B verging on extinction."[20] All types of schools have suffered from this malady although inflation has been more pronounced in private than in public colleges.[21] Grade inflation has been the source of much hand-wringing because observers like David Bassinger tell us:

> Students not only possess on average no greater capacity than they did in the past, they actually demonstrate less mastery of basic educational skills—less ability to read, write, think, and calculate—than did their counterparts a generation ago.[22]

Significantly, the 2.5 GPA mark was never reestablished. At the time of this writing, the minimum GPA requirement for scholarship cadets remains a 2.0. Reducing the minimum GPA to the 2.0 level resulted in Cadet Command commissioning 1,553 more officers between 2006 and 2015 (155+ per year) than it

otherwise would have. See Table 9-1. The 1,553 figure is not a large number but neither is it insignificant, since it represents a little over 3 percent of total ROTC production over a 10-year time frame.[23]

Graduating Class	Scholarship Cadets with GPA between 2.0 and 2.49	Total Commissions	Percent of Commissions
2006	141	4050	3%
2007	127	4088	3%
2008	148	4300	3%
2009	163	4592	4%
2010	199	4994	4%
2011	219	5451	4%
2012	201	5880	3%
2013	151	5600	3%
2014	115	5536	2%
2015	89	5581	2%
Total	**1,553**	**50,072**	**3.10%**

Table 9-1. Scholarship Cadets with GPAs between 2.0 and 2.5.[24]

After 2007, the officer accessions environment improved significantly. A high unemployment rate helped matters. Between April 2007 and October 2009, that rate rose from 4.5 percent to 10 percent. It began to drop in 2011 but stayed above the 6 percent mark until the fall of 2014.[25] The gradual withdrawal of the United States from Iraq and Afghanistan also helped officer recruiting. In 2011, the last American troops left Iraq, and then-President Barrack Obama outlined his plan for reducing the nation's commitment in Afghanistan. By 2015, the U.S. presence in the latter nation

was a fraction (about 8 percent) of what it had been 3 years previously.[26]

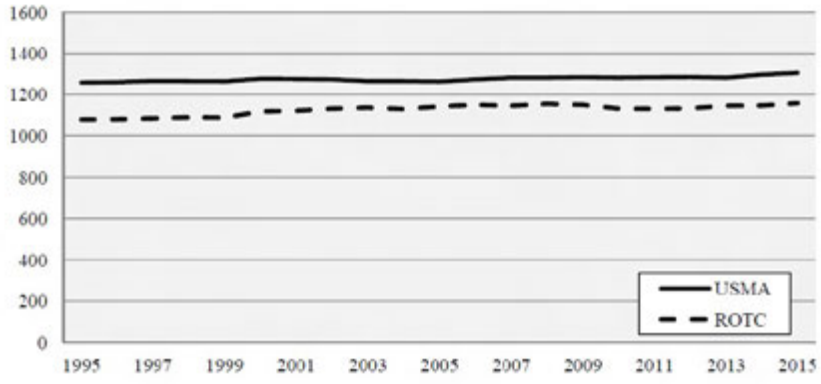
Officer recruiting gradually became more difficult after 2012 as the unemployment rate sank, the defense budget declined, the Army's end strength fell, the impressive body of incentives that had bolstered officer recruiting after 2004 dissipated, and the supply of officer candidates that had built up in the extended officer accessions pipeline eroded. By 2016, the Army was definitely feeling the pinch.[27]

WEST POINT

In the post-Cold War era, the USMA has followed the general trajectory that it had been on since the advent of the All-Volunteer Force (AVF) in 1973 in the realm of candidate testing. Over this period, it accentuated non-cognitive factors while subtly deemphasizing cognitive ones. The whole person score remained its principal selection instrument, and within that whole person score, the SAT remained its primary intellectual vetting tool. In an attempt to raise the retention level of its graduates once in the Army, West Point adjusted the whole person score to place more weight on non-cognitive factors. In this adjustment, the weight accorded measures of mental ability or achievement (such as SAT scores and high school GPA) dropped from 60 to 55 percent while the weight attached to physical measures rose from 10 to 15 percent. It was a relatively small but very significant change.

Despite its increasing focus on non-cognitive measures in its admissions policies, West Point remained the SOC with the highest SAT average. In Figure 9-5, we depict the average total SAT scores over time by

SOC; unfortunately, data for OCS was unavailable. As with GT scores, SAT scores provide one measure of academic ability. The data reveals that while the average score of cadets at the USMA has remained higher than the average ROTC SAT score through the post-Cold War era, the gap between the two SOCs has narrowed. In 1995, West Point had a 200-point advantage over ROTC; by 2015, that advantage had decreased to 120. Figure 9-5 also reveals that the average scores for ROTC and West Point cadets have increased slightly over time. As with the GT scores, these average scores reflect only the ability of the test-takers. We provide more data on the SAT-taking rates by SOC below. We must keep in mind, however, (1) that (as will be shown presently) the ROTC line depicted on the chart represents only a portion of the ROTC production base; a substantial percentage of ROTC cadets (about 40 percent) do not have SAT scores in their records; and (2) the SAT is a norm-based test that has been gradually declining in rigor over the last 2 decades. It is difficult to tell how meaningful the slight uptick in scores referred to above really is.



Note: The figure above displays the mean SAT score by the SOC by year. All data used in this graph comes from the Officer Master File and includes Active Duty commissions only. SAT data was not available for OCS.

Figure 9-5. Average Total SAT Score by SOC.

In the post-Cold War era, West Point continued its pursuit of new research initiatives to add and refine non-cognitive, self-report measures. This research eventually led to the adoption of the BioABLE instrument. This instrument concentrated on items that were "historical, external, objective, first-person, and primarily verifiable, at least in principle."[28] Researchers found that it was fairly effective in forecasting performance ratings.[29]

In the mid-1990s, the USMA and the Army Research Institute for the Behavioral and Social Sciences (ARI) worked together on a project exploring how a number of individual measurements gathered at West Point correlated with demonstrated leadership ability. The name of the project was the Baseline Officer Longitudinal Data Set (BOLDS). Like the Officer

Prediction Project, the BOLDS effort covered an extensive collection of individual attributes. Analysis of the BOLDS data revealed that standardized test scores, a social judgment measure, and a measure of hardiness were all useful predictors of cadet performance.[30]

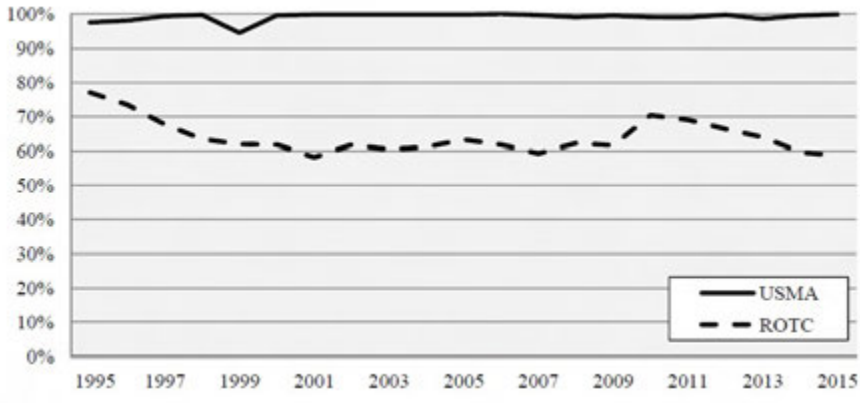
RESERVE OFFICERS' TRAINING CORPS (ROTC)

The ROTC entered the post-Cold War period still using the Officer Selection Battery (OSB), albeit not as a screen for admission into the Advanced Course.[31] Analysts from ARI had discovered that OSB scores were positively correlated with the faculty ratings and grades of ROTC graduates in the Officer Basic Course (OBC). These findings led TRADOC to incorporate the OSB into the Pre-commissioning Assessment System in 1986. Despite the correlation of OSB test scores and performance in OBC, the OSB was discontinued in 1996. Nothing replaced it. The battery represented, as Michael Rumsey notes, "the last major effort undertaken to develop an academically-oriented ROTC selection measure."[32]

Interestingly enough, Michael Rumsey states that the OSB was discontinued "[w]hen the administration of the SAT or the ACT [American College Testing] to all applicants was determined to be a feasible approach."[33] This contention has since been refuted by Lenny Wong and Stephen Gerras of the U.S. Army War College (USAWC), who point out that approximately 40 percent of ROTC graduates do not have SAT or ACT scores in their records.[34] Nevertheless, the idea that the Army uses the SAT/ACT to screen all of its officer applicants remains strong.

To provide additional insight into this matter, we depict the percentage of ROTC and USMA cadets

commissioned each year from 1995 to 2015 with a SAT score. See Figure 9-6. For West Point, SAT scores are available for virtually all officers (save 1999, which might be a data problem). The Army, therefore, has a clear picture of the academic abilities of USMA cadets. For ROTC the picture is less encouraging. The fraction of officers with scores is much lower overall. Moreover, that fraction has declined steadily over the period under consideration, falling from about 77 percent in 1995 to approximately 59 percent in 2015. This suggests that the Army lacks any standardized measure of academic or intellectual ability on a large fraction of the officers in its largest commissioning source. While many people assume that officers from ROTC have completed the SAT and have been vetted or screened prior to commissioning, this is only a partial truth at best. This also suggests something about the academic rigor of the institutions that ROTC cadets are attending, since, for a large minority of cadets (nearly 40 percent), their school does not require a SAT score. Missing score data in Army records might explain some of this, but the lower overall percentages of test-takers and the downward trend remain concerning.



Note: The figure above displays the percent of each SOC with a SAT score by year. For cadets at USMA who took the ACT, we use the estimated SAT data provided by USMA. All data used in this graph comes from the Officer Master File and includes Active Duty commissions only. SAT data was not available for OCS.

Figure 9-6. Percent of SOC with SAT Score.

The consequences of eliminating the OSB were highlighted after the outbreak of the second Gulf war. When young men and women failed to attain the minimum qualifying score of 110 on the GT test and were consequently rejected for admission into the National Guard OCS program, they sometimes turned to the ROTC, where a standardized test was not part of the selection procedure. They were subsequently able to enroll in ROTC and earn their commissions, thus circumventing the ASVAB screening requirement of National Guard OCS.[35]

Since the final demise of the OSB in 1996, research into ROTC officer selection has focused on non-cognitive factors. The focus has been upon the development

of construct-based measures of motivation and interests. These construct-based measures have drawn upon instruments used by the Army in other venues. The Rational Biodata Inventory and the Test of Adaptable Personality are two of these instruments. The tools derived from research associated with these instruments have proven effective as predictors of attrition and performance in 4-year ROTC scholarship recipients and are now used in the ROTC selection process.[36]

RECENT ATTEMPTS TO USE COGNITIVE TESTING AS AN ROTC SCREENING INSTRUMENT

A recent commander of Cadet Command, Major General Peggy Combs, attempted to reintroduce cognitive testing in the ROTC candidate selection process. Combs found support for this move in the Army Human Dimension Strategy, which accentuates "precision talent management" and "comprehensive assessments of personal aptitude and potential."[37] She initiated a search for a standardized test to serve as a screening device for the Advanced Course soon after she assumed command of the ROTC in the spring of 2014. It seemed irregular to her that OCS and West Point required universal mental testing and ROTC did not. In the ROTC world, standardized tests are seen as serving multiple purposes—for building self-awareness, for identifying talent, for talent management, for assessing the efficacy of the ROTC curriculum, and, more problematically, for screening entry into the Advanced Course. This last purpose—as a screening device for the ROTC Advanced Course—has been, and remains the most controversial application.[38]

Combs and members of her staff initially proposed that only cadets who scored above a certain minimum on the SAT should be allowed entry into the Advanced Course. If the Army really wanted mentally agile, critical thinkers as officers, they reasoned, then candidates should be required to evidence a certain level of intelligence or academic attainment. However, many rejected the SAT as a screening tool because it was generally regarded as undemocratic, an impediment to minority recruiting, and of marginal value as a measure of military aptitude or career commitment. Before 2015, the aversion to the SAT had been so widespread that Cadet Command did not even collect SAT data on all cadets—only on certain types of scholarship cadets (who had to submit a SAT score as part of the scholarship application process). That only changed in 2015, when Combs directed that SAT scores be systematically collected and archived.[39] Cadet Command eventually rejected the SAT as a screening instrument because it was unable to come up with a score everyone could agree on.

Cadet Command next turned its attention to the ASVAB. All OCS candidates have to take this test. Combs wanted to use the ASVAB as the baseline accessions test in ROTC to establish consistency within the ROTC cohort. In any given year, from 35 to 40 percent of ROTC class has prior military service and has taken the ASVAB. Cadet Command, however, did not require a test of this type for progression cadets—i.e., those cadets who enter the program as college freshmen and take 4 consecutive years of ROTC.[40]

The ASVAB option, however, proved to be unworkable. Authorities in the Department of Defense told Cadet Command that ROTC units could not administer the test because of the danger of compromise. To

make the ASVAB practicable as a screening instrument, all ROTC cadets would have been required to take the test at a Military Entrance Processing Station site, a requirement that could not reasonably be met. In addition, the Office of the Assistant Secretary of the Army (Manpower and Reserve Affairs) did not believe the ROTC needed a test. That office thought that the type and quality of lieutenant then being produced was just fine and asked Cadet Command, "What's broken?"[41]

At the time of this writing, Cadet Command still does not have an entrance test for the ROTC program, at least for many of its cadets. The Air Force Officer Qualification Test (AFOQT) is currently administered during ROTC summer training, but is used as a leader development instrument, not as a screening instrument. It is employed to promote self-awareness in cadets and help them identify their strong and weak points.[42] While there is an awareness of the desirability of mental screening for officers, it remains a very controversial proposition.[43]

OFFICER CANDIDATE SCHOOL (OCS)

As in ROTC and at West Point, post-Cold War selection research in OCS has centered on non-cognitive factors in an effort to ensure that the candidates have the motivation to pursue a career in the Army. The biodata approach that had proven useful in the ROTC program was also employed in OCS. Such an approach had been found to be a fairly accurate predictor of career retention as well as performance in pre-commissioning training.[44] In the latter stages of the Iraq War, the Army became interested in determining whether biodata measurements might be helpful in

allowing it to go "beyond [its] existing selection tools" and create a "predictor composite" for choosing OCS candidates.[45] It took this tack because, inter alia, biodata measurements have a less detrimental effect on retention than do certain other types of selection measures based on mental ability.

Recognizing the lack of recent research into the OCS selection process and the potential value additional assessment methods could have on helping OCS meet its mission, the ARI initiated a research program in 2008 called Measures for Selecting Soldiers for the Officer Candidate School (referred to as SelectOCS). The primary goal of SelectOCS was to identify a test battery likely to select applicants who had strong leadership potential and possessed a high propensity to remain in the service after commissioning.[46] The project began with the development of the Officer Background and Experiences Form, a battery of measures designed to assess aspects of applicant personality, values, and judgment. In accordance with its purpose, the form contained mostly non-cognitive domains.[47]

Insights into the development of the SelectOCS can be found in an ARI report published in 2014 about OCS selection methods. In this report, ARI researchers underlined the importance of the Officer Background and Experiences Form's ability to measure certain non-cognitive aspects of a candidate not measured by the ASVAB. While the ASVAB can predict performance, they point out that has been shown to be unrelated to turnover. This statement is true enough but rather misleading.[48] The relationship between retention and mental ability is not linear but curvilinear. Candidates at both the top and bottom ends of the mental ability spectrum tend to have lower retention rates—the top end because they have better

opportunities in the civilian labor market and the bottom end because their performance is weak and they are not retained in the Army (thus indicating an inverted U relationship). This reinforces what the Army has known for decades—namely, that individuals with superior intelligence tend to leave the Army at high rates. Asserting that ASVAB scores are unrelated to turnover is thus rather disingenuous.

Still, it is true that measures of cognitive ability like the ASVAB have proven to be less predictive of the non-technical aspects of an officer's performance—aspects such as commitment, leadership, and personal discipline—than they are of technical proficiency. That is why the Army has chosen to rely primarily on "on qualitative and descriptive materials such as interviews, documentation of educational requirements, recommendations from superiors, and essays" for OCS candidate selection. Army researchers have found these non-cognitive instruments to be well suited to assess whether individuals applying to OCS have the character to be effective leaders. On the other hand, there has been little standardization in how the Army administers and scores these instruments. In identifying candidates for OCS, a lot depends on the subjective judgments of the selection board. Some boards are relatively lenient while others are quite severe.[49]

Developing screening instruments for OCS has become a more intricate process than it had been formerly because, in the post-Cold War era, there emerged two wide avenues for gaining entry into the OCS program. One avenue was known as the in-service option, and the other was known as the enlistment option. Before the year 2000, most OCS candidates were former enlisted Soldiers (typically non-commissioned officers [NCOs]) and came into

OCS through the in-service program. Accordingly, most research concentrated on this element of the OCS population. More recently, as a result of the Army's junior officer retention problems and a depleted NCO leadership base, the Army has relied more heavily on enlistment-option candidates, which targets graduates of civilian colleges and universities; it has shifted its research focus to reflect this new emphasis. The Army refers to these candidates as enlistment option because they are technically enlisted Soldiers for a short period of time before entering OCS.[50]

Between 1998 and 2008, OCS expanded significantly. The program reached a post-Vietnam high point in the years 2006 to 2008, when it produced between 35 percent and 40 percent of new Army officer accessions; historically, only 10 to 15 percent of the Army's annual cohort of new officers came from OCS.[51] The Army achieved the expansion of OCS through a greater reliance on the enlistment option. By 2009, this option accounted for about half of all OCS commissions.[52]

After 2012, when combat operations had ended for Operation IRAQI FREEDOM and were drawing down for Operation ENDURING FREEDOM, the Army began reducing the size of its force and the number of officers it accessed annually. The trend in a greatly reduced OCS program was for the Army to favor enlistment option candidates over in-service candidates. This was due in part to new selection requirements established in October 2010 that (a) required all candidates to have a 4-year degree from an accredited college prior to entering OCS and (b) suspended waivers for time-in-service, age, medical, and moral reasons.[53]

The application experience of an in-service candidate varies significantly from that of an enlistment-option candidate. For example, Human Resources Command manages the in-service program while U.S. Army Recruiting Command manages enlistment-option candidates. The latter type of applicant must submit an application packet that contains college transcripts, letters of reference, and several personal information forms. Next, they must be screened by a three-member board convened by a Recruiting Battalion Commander. The board rates each candidate in areas such as demeanor, oral communications, and appearance. If the board renders a favorable decision, the candidate is shipped to basic training; after graduation, the candidate reports to OCS.[54]

During Operation IRAQI FREEDOM, the academic attainment standards were higher for the enlistment-option candidates than they were for the in-service applicants. In-service applicants only had to have 90 undergraduate credit hours to be eligible for a commission; enlistment-option candidates had to have a bachelor's degree. The assumption was a large portion of in-service applicants received credits from post or online programs, while enlistment-option candidates were more likely to receive degrees from traditional 4-year colleges.[55]

Two ARI researchers, Teresa Russell and Trueman Tremble, found that "in-service and enlistment-option candidates differ[ed] in many ways."[56] As might be expected, most in-service candidates had prior military service, and many had seen service overseas, while most enlistment-option candidates had not served in the military and had not deployed overseas. In the sample used by ARI to develop selection instruments, in-service applicants were, on average, 33

years old, and a solid majority had at least one child. On the other hand, enlistment-option candidates were younger (the median age was 27) and most did not have children. Enlistment-service applicants were more likely to be white, had higher levels of civilian education, and attained higher marks on the Armed Forces Qualification Test (AFQT) than their in-service colleagues.[57]

There were also significant differences, Russel and Tremble note, between in-service and enlistment option candidates in terms of performance in OCS and career motivation. In terms of performance, differences were notable on the final Army Physical Fitness Test score, leadership performance, and the total OCS score. These differences were large and significant, with in-service candidates scoring higher than enlistment-option candidates on all measures. In-service applicants were far more likely to indicate that they intended to stay in the Army for a career. [58]

On the other hand, the two types of candidates were similar in some areas. They were "similar in terms of their temperament, identity, affectivity, values, leadership judgment and reasons for applying to OCS." Their academic performance at OCS and their retention rates in the OCS program were likewise very similar.[59]

CONCLUSION

Officer testing in all three of the Army principal commissioning programs has followed a similar trajectory during the post-Cold War period. In the screening programs of the three principal SOCs, cognitive measures continued to be eclipsed by non-cognitive measures of aptitude and performance. The latter tended

to be better predictors of retention in pre-commissioning programs and in the Army than the former. Very high cognitive scores on standardized tests, in fact, were found to have a negative correlation with career commitment. Certainly, budgetary pressures (attrition is costly) and military effectiveness issues (readiness is negatively impacted by high officer turnover) combined to push defense and congressional leaders to demand economy and efficiency in pre-commissioning training, and this meant placing a premium on non-cognitive measures while deemphasizing cognitive ones. The Army, the Defense Department, and the nation, as it seemed to the many observers, could not afford to do otherwise.

ENDNOTES - CHAPTER 9

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CHAPTER 10:
CONCLUSION AND RECOMMENDATIONS

WHY HAS OFFICER TESTING BECOME LESS RIGOROUS?

The progressive decline of rigor in officer testing is not derived from a single cause, as some observers have suggested, but has resulted from the confluence of a number of policy decisions and long-term structural trends. It is our intent in this chapter to list and briefly discuss these factors. Unfortunately, the restrictions of time and space mean that only the weightiest of these factors can be discussed here. This means our analysis is confined mainly to the strategic level, and then only to the most salient factors. We believe that these factors, or at least most of them, are irreversible but some of their negative effects can be mitigated through policy.

GROWTH OF THE OFFICER CORPS RELATIVE TO THE U.S. POPULATION

Probably the most obvious and easily demonstrable of these factors is the size of the office corps relative to the size of the population. Over the last century or so, the growth in officers has outpaced the growth in people. This development has made the competition for each officer slot less intense, entry into the officer corps correspondingly easier, and the task of officer recruiting more complicated.

Between 1900 and 2016, the population of the United States increased threefold, while the size of the officer corps increased almost twenty-fivefold. Officer strength reached its peak during World War II when

the size of the Army and the Armed Forces reached record levels. At that time, the Armed Forces exceeded 12 million men while the Army alone numbered over 8 million. To be sure, the Army shrank drastically in size after the war. However, even when the demobilization was complete in 1947, the Army remained a huge force by historic peacetime standards. In fact, the Army that emerged from the post-World War II drawdown period was more than seven times larger than the interwar Army had been. The Army gradually contracted in the decades after the Korean War but never again approached interwar manpower levels. The upshot of all this is that since the turn of the last century, the officer to population ratio has risen dramatically—by more than eightfold.[1] With such a trend line, a dilution of testing and accessions standards was inevitable. See Figure 2-1 in Chapter 2.

DECLINING PRESTIGE AND ATTRACTIVENESS OF A MILITARY CAREER

Since the beginning of the 20th century and particularly since the end of World War II, the prestige and attractiveness of a military career has gradually but steadily declined. This development is closely connected with, among other things, the nation's shift from an Agricultural Age to an Industrial Age to an Information Age economy. The status and attractiveness of an officer's career changed as the economy, the organization used to control and regulate industry, and the personnel practices of business enterprises evolved over time. The general trend has been for the officer corps of the military services to lose their relevance as engines of industrial and economic innovation and with that loss of relevance their attractiveness

as a career choice for the nation's best and the brightest young people.

In the early 19th century, when the nation stood on the cusp between an Agricultural Age and Industrial Age economy, the officer corps was on the cutting edge of technology and industrial organization. From 1820 until the Civil War, West Point—the Army's most prolific source of officers—was the leading engineering and technical school in the nation. Its graduates built the transportation systems (roads, railroads, and canals) and infrastructure that facilitated industrial growth and westward expansion, wrote the engineering texts for the nation's technical schools, and headed engineering departments in many of the nation's most prestigious colleges. In this early stage of industrialization, military development generally led civilian development in both the technological and organizational arenas. The government assigned Army officers to the railway companies to plan and oversee the westward progress of rail lines. A number of Army officers left the service and became the presidents of railroads. Because it was a leading source of technological and industrial innovation, the officer corps attracted men of relatively high social standing and intellectual accomplishment. While it did not draw the financial elite of the nation into its ranks in large numbers (Henry A. Du Pont being one of the most notable exceptions), it did have sufficient social appeal to induce sons of presidents, secretaries of state, senators, and representatives to join its ranks. At one point in the 1840s, four sons of former presidents were matriculating at West Point.[2]

In the 9 decades between the end of the Civil War and the beginning of World War II, the prestige of the officer corps remained high. The Army's officer corps

continued to be relevant to economic and industrial development. Although it was no longer on the cutting edge of engineering and technological progress, there was a substantial cognitive overlap between the duties of a field grade officer and those of a captain of industry. The predominant industrial model still followed the military management model. In terms of the scale and scope of their responsibilities, the hierarchical structure of their organizations, their personnel management practices, their competitive ethos, the goal-driven nature of their enterprises, and the manner in which they controlled and managed their budget, their realms were very similar.[3]

Industry, in fact, continued to borrow its organization and staffing model from the military. Indeed, the nerve center of a large civilian firm closely resembled the organization of a division or corps headquarters. The Army's officer education and development system was adept at producing the kind of well-educated generalist that both industry and the military highly valued. There was, in short, a great deal of what psychologists call near-transferability between their domains.

Domain Transfer and *g*

Virtually everyone agrees that the main function of education is not merely the development of knowledge within the student but the transfer of that knowledge by the student for use outside the classroom.[4] After all, if English-speaking students learning Spanish could never speak or understand a single Spanish word when not in the classroom, the propriety of foreign language education would be called into question. The details of how best to accomplish this transfer are the concern of teachers and researchers, but the fact of its status as the major goal of all education and training is undisputed.

Knowledge does, indeed, transfer.[5] Transfer has been a topic of psychological research efforts since the dawn of the science through to the present (e.g., C. Spearman, Fowler Brooks, George Ferguson, Joseph Campione, Ann Brown, Susanne M. Jaeggi, Martin Buschkuehl, Priti Shah, and John Jonides). These researchers do not necessarily agree on the strength of the effect of general intelligence (or, *g*) on transfer, but they are agreed that it does influence it.[6]

Mary Gick and Keith Holyoak, in some of the most cited research in cognitive psychology, examined whether and how students would transfer the logic learned from one situation to another analogous situation. A scenario was first presented which dealt with a general wishing to attack and capture a fortress from which many roads radiated. The details of the scenario led to the reasonable conclusion that only by dividing up his army along the many roads could he capture the fortress. Students were then presented a problem dealing with how best to use radiation to destroy a tumor. Although the details of the two situations differed, the skeletal structure was identical; to wit, reduce the size of the attack force (soldiers or photons) and position them along many paths simultaneously.[7]

Some students quickly and efficiently see the relations between different situations or phenomena and are likely to transfer what they have learned in one domain into the other; Spearman referred to this as the education of relations and correlates.[8] So what influences transfer? Erika Dahlin, Anna Stigsdotter Neely, Anne Larsson, Lars Bäckman, and Lars Nyberg's findings indicate that, "transfer can occur if the criterion and transfer tasks engage specific overlapping processing components and brain regions."[9] This is where *g* has its influence. Generally speaking, high *g* individuals require less specific overlap in processing components and, by virtue of their greater neuronal density, can more efficiently process and transfer information.[10]

Educators continue to strive to improve student transfer efforts. A general finding related to such efforts is that, for the majority of students (who would necessarily be described as possessing average levels of *g*), transfer occurs in limited fashion, between near

domains, and often requires overt cues.[11] For high *g* individuals, transfer is easier, more efficient, occurs between more distal domains, and frequently occurs spontaneously.[12]

Applying what is learned in the classroom to the field is transfer. Army officers are educated in America's colleges and universities with the understanding that they will take what they have learned at college and apply it to their jobs. This certainly occurs—think foreign language majors—but efforts at assisting transfer to dissimilar domains, in spontaneous fashion, and while juggling competing demands, places a great premium on *g*. To the degree the Army does not test for *g*, it cannot know whether it has this element in hand or to what degree.

The continued economic and industrial relevance of the military profession was reflected in the social composition of the Army's officer corps. To be sure, sons of presidents no longer attended the U.S. Military Academy (USMA). Nevertheless, the officer corps still appealed to the children of well-heeled professionals and managers through the interwar period. The pay and benefits given officers permitted them to lead an upper middle-class lifestyle, while the social perquisites afforded them a respected place in genteel society.

Things began to change after World War II as the Industrial Age gradually gave way to the Information Age. The secondary sector (manufacturing)—the driver of economic growth in the Industrial Age—lost prominence while the tertiary (service), quaternary (knowledge-based, information management), and quinary (top-level decision-making) sectors gained prominence.

Responding to these economic shifts, the business model slowly changed. That model drifted away from the rigid, top-down, hierarchical model pioneered by the military and toward a more flat, open,

and egalitarian collegial model that was more adept at responding to the competition and changes in the environment. No longer was the cognitive operational overlap between the military and business domains as substantial as it once was.

Over the long transition period between the Industrial and Information Ages, (which according to some observers began in 1947 and is still ongoing today), the military gradually lost ground to civilian industry as an engine of innovation, technological advancement, and industrial organization. By the 21st century, the change was nearly complete, with the military now looking to borrow from civilian business ideas on how to shape not only its technology and organization, but the way it managed its personnel. Agile leaders, talent management, total quality management, and other management paradigms that the Army has adopted over the last 3 or 4 decades were imports from the business world. Moreover, some modern corporations began to look for leaders who were vastly different from those who had led the business world a half century before. Depth of talent in an individual now trumped breadth of talent on the new corporate list of leadership attributes. Thus, generalists lost relevance while managers possessing a depth of knowledge gained it.

It is emblematic of this trend, perhaps, that when the Department of Defense began to shape a strategy and build a force to combat emerging threats in the cyber realm, it turned to the civilian world and not to its internal resources to do so.[13] It was clear that the military no longer had the talent or motivation to undertake such a complex task.[14] The military's hierarchical organization for management seemed increasingly dysfunctional. Its outdated personnel

management policies were, it was alleged, driving the most talented officers out of the Army. Its multi-layered command structure was an albatross around its neck, preventing it from responding to threats and developments with the necessary rapidity. The adaptability pressure increased along with the need for the quick acquisition of information.[15] There were many calls for the Army to become more like civilian businesses and adopt a more flat, open, and democratic management structure. With his Force of the Future initiative, Secretary of Defense Ash Carter was a leading advocate of such change. To date, the Army has been unable and unwilling, for a variety of reasons, to embrace this transition wholeheartedly and extend it to encompass its core functions.

These changes in the business model were accompanied by an erosion of officer compensation. The officer corps grew in size as the attractiveness of an officer's compensation package declined. A colonel in 1954 received substantially the same compensation as a captain in the 1930s. The officer corps also lost some of its financial and social perquisites. Medical and dental care, post exchange and commissary privileges, and insurance benefits were all downgraded or eliminated. Moreover, a new spirit of egalitarianism infused the officer corps—helped along by the Doolittle Board and similar study groups—and the privileges and prestige formerly accorded officers declined. Morris Janowitz characterized this decline as an inevitable consequence of modern society.[16]

In the post-World War II era, the socio-economic profile of the officer corps changed dramatically. For example, the changing socio-economic profile of entering West Point cadets. In the post-World War II era, the number of cadets hailing from working class

families grew larger while the number of cadets from the professional and managerial classes decreased.

The religious affiliation of cadets also changed dramatically, which was a reflection of the larger socio-economic changes mentioned previously. Once a bastion of mainline Protestantism—especially Episcopalianism—the Academy was now increasingly filled with students from Catholic or low-prestige Protestant denominational backgrounds.[17]

Also, consider the declining academic level of the officer corps. It was not until the 1960s that the officer corps once again had a clear majority of officers with baccalaureate degrees. Moreover, by the time the officer corps attained this mark, the baccalaureate degree had been considerably devalued. A bachelor's degree in the age of the All-Volunteer Force (AVF) was roughly equivalent to a high school diploma in the interwar period.

We are not arguing that the social, religious, and demographic changes discussed above are negative or that the social status quo should have been preserved. We are highlighting the dramatic changes that shook the officer corps in the wake of World War II—changes that negatively affected the attractiveness and prestige of the military profession, and nudged the Army toward both widening the field from which it recruited officers and making its officer screening mechanisms less stringent.

EXPANSION OF COLLEGE FINANCIAL AID AND FUNDING

The tremendous growth in college scholarships and other assistance packages also worked against officer recruiting and commissioning standards. The

amount of financial aid available to students exploded after World War II and has generally been on the rise ever since. This explosion of financial aid was fueled by critical pieces of legislation, such as the a very generous Servicemen's Readjustment Act of 1944—known as the GI bill—for veterans, the National Defense Education Act of 1958, the Higher Education Act of 1965, and the Middle Income Student Assistance Act of 1978, to name just a few.[18] Student financial aid not only expanded but also became more variegated in the decades after World War II. Federal financial grants, federal work-study funds, federally backed loans, state grants, institutional assistance, and financial aid from corporations, foundations and other private organizations all became integral parts of the financial assistance landscape.

The growth of student financial aid resulted in a fundamental change in the admissions process at most of the nation's leading civilian universities. Before World War II, these institutions had screened their annual intake of students largely by the metrics of wealth. With the increased availability of financial aid, they now screened primarily by cognitive ability.[19] This growth of student aid was generally bad news for the service academies and other officer commissioning programs. The Army's once generous financial incentives were now far less attractive than before the war. Inevitably, this erased an important advantage for West Point and the Reserve Officers' Training Corps (ROTC) in their quest to attract the nation's brightest undergraduates.

"UNBALANCED" GROWTH IN COLLEGE ATTENDANCE

Between 1910 and 2010, the number of young people enrolled in college shot up by more than 1000 percent.[20] The percentage of this population enrolled in college increased as well. In 1910, 5 percent of that population was enrolled in college; by 2015, nearly 70 percent was. The rise in college attendance has been particularly dramatic since 1980. In the 3 decades between 1980 and 2010, the number of young people enrolled in college rose by 50 percent. This post-1980 expansion has been enabled by students who fell on the left side of the collegiate intelligence distribution—i.e., they were generally less intelligent than the average student entering college in 1980 and before. This implies that the average college graduate in 1980 was more intelligent that the average college graduate of 2016.

Some government and business organizations have recognized this decline in the intellectual attainment level of bachelor's degree holders and compensated for it by requiring a master's degree as a condition of employment. The military, however, has not made this adjustment. It has dealt with this decline by ignoring it and by lowering or ignoring standards. Although the pool of potential officer candidates has grown over the last 4 decades, it has not grown in a way that would promote a more intellectually capable officer corps.[21]

As Matthew Cancian points out, the drop in intelligence levels shows up not only in the middle of the distribution, but also at the top. Cancian notes how in the Marine Corps not only the average General Classification Test (GCT) score of officers has declined, but also the number of officers who are achieving the

highest scores. In 1980, 14 Marine officer candidates attained a score above 155 on the GCT—a test with a maximum score of 160. By 2005, there were only two officer candidates who had a score above 155. In 2014, the number was zero.[22] The general technical (GT) scores of Officer Candidate School (OCS) candidates in the Army have seen a similar decline.[23]

GROWTH OF MILITARY COMPETITION

The growth of the Navy and the Air Force after World War II presented recruiting challenges to the Army and its officer accessioning programs. Between 1935 and 1955, the size of the Navy grew almost sevenfold, while the Marine Corps experienced a twelvefold expansion.

The Air Force represented a new element of competition after World War II. In the interwar period, Air Corps personnel strength had been included under the Army personnel account. After the war, the Air Force became an independent organization whose officer needs nearly equaled those of the Army. In 1955, its end strength was 87 percent that of its parent service. At the same time that competition was intensifying, the Army itself was getting larger. Between 1935 and 1955, the Army grew by a factor of eight. Considered as one entity, the defense establishment increased nearly twelvefold between 1935 and 1955. With the growth of competition, accessions and testing standards were inevitably affected.

Even more damaging to the Army was the fact that its two largest military competitors were more attractive service options for young people and consequently drew off the best talent—leaving the Army with less to choose from. Evidence of this can be seen

in the Armed Forces Qualification Test (AFQT) scores necessary for induction, since services that are the least attractive have the most lenient accessions standards. The Army has the least restrictive entrance requirements, requiring a 31 on the Armed Services Vocational Aptitude Battery (ASVAB), with waivers possible down to 26, depending on recruiting needs. The Air Force has the most restrictive entrance requirements. It requires a 36 on the ASVAB if candidates have a high school diploma and a 65 if they have a general educational development (GED) certificate. Waivers are possible down to 31 if recruits have special skills like speaking a foreign language. The Navy falls in the middle. It requires a score of 31 with a high school diploma and a score of 50 with a GED.[24] The Army, it is important to note, does not have a different standard for GED holders. This is because it generally does not have the option of being as selective and discriminating as the Navy and Air Force in its entry requirements.

It is difficult if not impossible to find comparative data about officer accessions. The SAT (formerly known as the Scholastic Aptitude Test and the Scholastic Assessment Test) is a requirement for only a fraction of the cadets in the Army ROTC program so any comparison with the ROTC programs of the other services would be suspect. However, the SAT scores of incoming classes at the services academies, while not definitive, are informative and very suggestive. The Naval Academy has the highest SAT standard. The average SAT score of entering freshmen is 1341. The Air Force Academy comes next with an average entering freshman score of 1314. West Point is last; its average score is 1283.

Again, it is our contention that ASVAB and SAT scores reflect the relative attractiveness of the services and the most attractive services get the most talented work force. Attractiveness is a function of many factors—image, lifestyle, work environment, compensation, training, and skill acquisition being among the most important. The Air Force is perceived as high tech, modern, progressive, egalitarian, clean, civilized, and relaxed. Skills acquired in the Air Force tend to be easily transferable to civilian life, and the lifestyle and work environment in that service are generally pleasant. Deployment and field duty have less of a negative connotation in the Air Force than they do in the ground forces. It is the service that most closely parallels civilian life.

The Navy is also perceived as high tech and modern. Skills acquired in the Navy are also easily transferable to civilian life. The lifestyle and work environment are clean and relatively pleasant. Service in the Navy is generally not gritty or dirty, but does often involve long cruises and periods away from home. Conditions on ships are clean, but often cramped. The Navy is not quite as relaxed as the Air Force. It is more bound by tradition and discipline is harsher. It also tends to be more hierarchical and aristocratic. Still, it is usually seen by prospective officer aspirants as a better career alternative than the Army.

The Army and Marine Corps are not perceived as being as modern and high tech as the Navy and Air Force. Soldiers and Marines are perceived as "grunts" and less cerebral than airmen and sailors. They deploy frequently and spend long stretches in the field. The lifestyle and work environments are often seen as harsh and physically demanding. Both the Marine Corps and the Army are seen as bound by tradition

and regulated by harsh discipline. The Marine Corps has the advantage of being perceived as elite by large segments of the youth population. All this must be considered in the context of the general decline in military propensity among youth over the last half-century or so. Competition from the other services thus detracts significantly from the Army's ability to impose strict testing and high accessions standards.

INCREASING EMPHASIS ON NON-COGNITIVE FACTORS AND RETENTION

The Army began to place increasing emphasis on retention as a factor in officer selection beginning immediately after World War II. This inevitably entailed greater stress on non-cognitive factors in officer testing instruments. By the late 1950s, non-cognitive factors counted for almost as much as mental ability for entrance into officer producing programs. Later, these factors largely displaced measures of intellectual attainment.[25]

Officer procurement was a larger concern for the Army after World War II than it had been in the interwar era. A far greater annual supply of newly minted officers was needed to lead the force. Unfortunately, the officer recruiting environment in the post-war era was far less favorable than it had been in the 1930s. Unemployment was low, the economy was booming, Army compensation was eroding, and the Army lifestyle was deteriorating. A cost conscious Congress severely cut commissary and post-exchange benefits, eliminated life insurance for officers, and reduced medical and dental benefits. Officers no longer lived an upper middle-class existence. Consequently, the Army struggled with officer recruiting and retention.

In the post-war period, the service lost many of its best and brightest junior officers after the expiration of their initial service obligation. Images of undergraduates at the nation's leading private universities flocking into ROTC programs in the 1950s are, at best, overblown.[26] True, conscription (or more accurately selective service) ensured that the Army would always have enough second lieutenants and tended to channel students into ROTC to escape the draft.[27] However, it did not ensure that the Army would have enough captains or senior first lieutenants to meet its needs. That was because lieutenants, especially the best and brightest ones, tended to leave the service as soon as their military service obligation expired, which in most cases was after 2 years. Indeed, the Army suffered from a huge junior officer deficit in the 1950s—a deficit that only grew worse in the early 1960s when the Army and its officer corps expanded to meet the needs of Kennedy's so-called Flexible Response strategy and the Berlin Crisis. The raising of the minimum service obligation of West Point graduates from 4 years to 5 years in the early 1960s is a testament to the concern of Congress about junior officer retention problems.

During this era, West Point became concerned about not only the retention of cadets through the Academy experience, but of its graduates in the Army after graduation. As a result, West Point adjusted its admissions policies and standards to boost retention. It began in 1947 when the USMA introduced a personality survey to assess a candidate's potential to navigate through West Point successfully and the likelihood of his remaining in service for a career. This new tact was also evident in West Point's adoption of the "whole man score" in 1958.[28] The whole man score was devised to select not necessarily the smartest or

most intellectually talented candidates, but those who were, in the words of one of the Army's social scientists, "best motivated for attendance at the Academy **and for a subsequent Army career** [emphasis added]." The score was a composite of various academic measures, measures of physical proficiency, and evaluations of leadership potential.[29] It differed from earlier admissions procedures in the weight accorded non-academic factors in the selection process.

By the late 1950s and early 1960s, it was becoming apparent, and would become even more apparent in later decades, that abundant intelligence and retention in the Army were not positively correlated. Consequently, rigorous, criterion-referenced tests of academic aptitude and attainment, which in decades past had regulated entrance into the USMA, were abandoned in favor of norm-referenced achievement and aptitude tests and psychometric survey instruments that identified candidates most motivated toward staying in the Army. This process, which began in the years after World War II and gained momentum in the decade thereafter, accelerated West Point's slide out of the ranks of elite undergraduate institutions.

The same trend was evident in the ROTC program, which became the Army's largest commissioning source for active duty accessions after World War II. However, the slide from away from rigor to retention was much more radical and dramatic in ROTC than at West Point. The ROTC Qualifying (RQ) Test gave way to the Cadet Evaluation Battery (CEB) in the early 1970s, which in turn gave way to the OSB in the early 1980s. Entrance testing in ROTC as a general requirement was abolished completely in 1996. Officer screening was further diluted after 2003 under the strain put on the officer corps and officer accessions

by the war on terror. The disregard for measurements of academic ability and intellectual attainment by the Army is reflected by the fact that Cadet Command did not start keeping records of SAT scores on a systematic basis until 2015, when certain Army leaders, like the Cadet Command commander, Major General Peggy Combs, and some observers, such as Lenny Wong, Stephen Gerras, and Matthew Cancian, began to question mental standards in military commissioning programs.

Complacency or wishful thinking (or perhaps both) on the part of the Army was partly responsible for this retreat from cognitive tests for officers. The Army assumed after World War II that acceptance into college and the attainment of a baccalaureate degree would be sufficient to ensure the requisite degree of intellectual attainment in the officer corps. As the baccalaureate degree lost much of its value over the years, the Army did not adjust its assumptions or methods to take this into account. Indeed, it actually increased its reliance on the bachelor's degree as a screening device. It continued to consider, and in fact still does today, the baccalaureate degree as a credential certifying the necessary level of intellectual attainment and mental aptitude. Only recently has this begun to change.

Moreover, the requirement for officers from ROTC and the USMA to have a bachelor's degree led the social scientists who developed the non-cognitive tests for officers to assume that most officers took the SAT or the American College Testing (ACT) exam. This, to our dismay, is simply not true. In fact, between 40 and 60 percent of the Army officers on active duty in recent years have no evidence in their records that they took such a standardized test. In any case, even if they did, this score was not used to screen their entry into their commissioning program.[30]

In the late 1960s and early 1970s as the Army was transitioning to an AVF and coming to grips with its officer accessions challenge, a fundamental change in the Army's accessions philosophy occurred—a change that still impacts officer accessions today.

Since, generally speaking, abundant intelligence was negatively correlated with remaining in the Army, it had to be sacrificed to increase career commitment and raise retention rates in the officer corps. This realization began to inform all officer accessions policies. To paraphrase one observer, the Army gave up on "motivating the educated" (they simply would not stay in the Army past their initial service obligation in anything near the numbers required) and embraced the concept of "educating the motivated." It might not have described the situation accurately, but it did get the point across clearly. Motivation replaced intelligence as the most important consideration in officer selection.

Various private and government-affiliated research entities led, or at least provided justification for, this "race to the bottom." Numerous studies on officer motivation and career success typically led to prescriptions that involved substituting less rigorous tests of mental ability for more rigorous ones. They also involved adding factors measuring various non-cognitive qualities into the mix, and in the process made intellect less important in the selection process. West Point's whole man score is an excellent example.

At West Point, the race to the bottom began immediately after the war when inventories attempting to measure personality and background became more prominent parts of the admissions process and the rigor in admissions tests was reduced. Officer selection tests turned from tests of academic attainment

to tests of "tactics" and "practical skills" because, Army researchers found, they were good predictors of "combat leadership performance."

Many studies focused on the short term and immediate—who would be retained in the ROTC program or at the Academy, who could succeed in jobs required of lieutenants. Instead of asking cadets to trace the history of the Greco-Persians Wars (as West Point applicants had to do in the 1930s), they were assessed on how competently they inspected a vehicle and how well they directed the evacuation of an office in the event of an emergency. The social scientists who studied these matters attempted to apply the techniques they used on the enlisted force, where jobs and career paths were well defined, to the officer corps, where jobs were more open-ended and ill-defined. To be sure, several analytical organizations did attempt to come up with job descriptions so the Army could—as it did for the enlisted ranks—link specific positions and career specialties to specific skills, attributes, and knowledge.[31] Nevertheless, officer positions resisted specific classification and categorization; they presented more performance measurement problems and involved more complexity than enlisted positions and were simply too nebulous and broadly configured to be precisely defined.[32]

In addition, past efforts to construct officer job descriptions largely ignored the fact that the Army was selecting colonels and generals at the same time it was selecting lieutenants. There is, after all, no lateral entry for line officers.[33] Some observers have called for the Army to use broad measures of intellectual ability in selecting tomorrow's strategic thinkers.[34] Only in this way, they argue, can the Army produce the type of mentally agile, adaptable, and innovative leaders

we are told are necessary to deal with the myriad challenges of the 21st century. To date, the Army has not been able to overcome these challenges and has exerted limited effort to focus on quality over quantity. As a result, it has never established meaningful intelligence standards for lieutenants or any other officer rank.[35] To the extent that it has incorporated more testing, it has generally prioritized standardization over rigor.

ACHIEVING DIVERSITY GOALS

The Army's attempt to achieve diversity goals has also contributed to the dilution of its intellectual screening procedures. This is true for two principal reasons. First, a smaller proportion of the nation's African-Americans and Hispanics than whites attend and graduate from college. Thus, the base from which the Army can draw is relatively small for certain minorities. Second, the nation's most selective colleges and the commissioning programs of the other services are generally more attractive to minority applicants than are the Army's commissioning programs. Consequently, West Point and the Army ROTC are compelled to accept many minority applicants who are not accepted by highly competitive colleges or by the service academies or ROTC programs of the other services. The Army, Navy, Air Force, and Marines are pursuing many of the same candidates and, in this competition, the Army usually loses out. Thus, the Army has had to lower its accessions standards to achieve what it considers to be a desirable demographic distribution in its pre-commissioning programs.

SUMMARY

This book has suggested that, contrary to popular opinion and scholarly assertion, the rigor of the Army's intellectual selection instruments has deteriorated over the course of the last century. In all three of the Army's principal commissioning sources—the USMA, ROTC, and OCS program—the trend has been toward declining standards and declining (relative) scores. The size of the Army, changing economic paradigms, declining prestige of an Army career, expansion of college aid, "unbalanced" college growth, competition from the other services, increasing emphasis placed on officer retention, and diversity considerations all help explain this trend.

This trend of deteriorating mental standards, strangely enough, has generally escaped the notice of social scientists and historians, who in their studies depict the history of officer testing as one of uninterrupted progress. Even the fact that the Army's largest commissioning program (ROTC) has operated without a nominal intellectual screening instrument since 1996—and in a practical sense since the early 1980s—is not widely recognized. To be sure, screening tests have become more standardized and broad-based since World War II; they now include psychometric measures that were not a part of the officer selection process before World War II. However, they also have become less intellectually rigorous because of the factors we have just discussed.

RECOMMENDATIONS

We offer a few preliminary recommendations that we feel would restore a degree of rigor and selectivity to the officer screening process. Given what the Army

expects of its officers, we believe this is an urgent matter. At the very least, we hope our recommendations will focus attention on this issue and stimulate further discussion about improving officer selection.

First and most importantly, we believe that there should be required testing for officer candidates in all commissioning sources. We echo the calls of observers such as David Lyle, Lenny Wong, Michael Colarusso, Matthew Cancian, Tim Kane, David Barno, and Nora Benashel, who have already made similar recommendations in scientific journals, professional military journals, and public media outlets. Moreover, as urged by Lyle and Colarusso, we believe that the scores achieved on these tests should be recorded in personnel files and used by the Army for officer assignments and career management decisions.[36] The tests employed could be the ASVAB, the Air Force Officer Qualification Test (AFOQT), the SAT, or the ACT and could even vary by source of commission (e.g., the ASVAB for OCS, the SAT for the USMA and the AFOQT for ROTC). The important thing is that some test should be adopted and some standard enforced.

In addition, there should be explicit accession standards attached to these tests, both in terms of a minimum and an average. The Army should establish minimum scores for program entry (an ASVAB score of 110 and an SAT score of 900 seem reasonable, but these numbers could be fine-tuned with input from the Army Research Institute for the Behavioral and Social Sciences (ARI) and other stakeholders). Equally important, there should be standards for each source of commission related to the distribution of scores. So perhaps West Point should be required to access cadets with an average SAT score of 1200 and ROTC with an average of 1050. Alternatively, the Army could

establish quality categories (e.g., Category I through IV) using standardized test scores for its officer recruits in the same way that it does in its enlisted recruiting efforts. Either method would ensure not only a minimum intellectual ability level, but also a higher level of aggregate intellect in the officer corps. In this way, the Army's officer corps would improve its collective cognitive capability over time and its readiness to respond to America's strategic challenges.[37]

The Army might also consider gearing these standards to appropriate comparison institutions to account for the changing demographics and abilities of the distribution of American students pursuing higher education. An appropriate initial guess might be to tie the average for West Point to the nation's top-tier public flagship institutions (e.g., the University of California, Berkeley; the University of California, Los Angeles; the University of Michigan; and the University of Virginia). In the mid-1980s, West Point's superintendent, Lieutenant General Dave Palmer, liked to show a graph that depicted West Point's degree of selectivity as falling between Harvard and Penn State. Perhaps that would be a worthy standard to readopt. True, Penn State is more selective now than it was in the mid-1980s on a relative basis, but given the huge size of the entering class at Penn State and other flagship state institutions, it is a standard that should be within the USMA's reach. Similar benchmarks could be adopted for ROTC programs.

In support of improved officer accession standards, we note that the Army could do more to identify and access officers from its large and diverse pool of enlisted Soldiers. By coupling reviews of current military performance with administrative data on standardized test scores (both the ASVAB and the

SAT/ACT), the sources of commission (SOC) could significantly improve recruiting and selection processes. Existing research demonstrates the potential to recruit a large number of intellectually capable (e.g., SAT scores above 1200) candidates to become officers, many of whom also support SOC diversity goals.[38] The Army could conduct an annual review of its most capable enlisted personnel and work with them to secure admission to West Point or to an appropriate university with an ROTC scholarship.

What the Army does not need is more studies suggesting that high mental ability has not been found to be positively correlated with retention in the Army. This has been stated by numerous studies in a variety of ways. The Army's interests could be better served by focusing on what programs or incentives could keep highly intelligent people in the officer corps. To meet the challenges of the future, the Army needs to retain people with many outside employment options, not those with limited outside employment options.

It is necessary to emphasize that testing must continue throughout an officer's career, and be part of the broader officer assessment system. A system of institutionally mandated and comprehensive testing of mental ability and achievement is an integral part of the Army's Talent Management plan—a plan elaborated in Lyle and Colarusso's book, *Senior Officer Talent Management*. In that book, Lyle and Colarusso call for collecting and keeping standardized test results such as the Test of Adult Basic Education, the Defense Language Aptitude Battery, the Graduate Record Examination (GRE) and the SAT.[39] Recent efforts at West Point in support of the Talent-Based Branching system demonstrate the feasibility of such testing and data collection.

In the near term, the Army must maximize the capabilities of its current stock of human capital. This means that even though mental testing standards and the intellectual capability of the force have declined, the Army has an obligation to develop and employ its force to the best of its ability. Accordingly, it should do everything in its power to train and educate officers to maximize their domain expertise—namely, their expertise within their particular career fields and assigned jobs. In order to do this, the Army must increase the rigor of its professional military education programs (from pre-commissioning training through the War College), make students accountable for their academic performance, and grade accordingly.[40] A 100 percent graduation rate at a professional military education school is not necessarily a good thing. The Army may never get the critical thinkers it says it wants, but it must ensure that it does its part to develop leaders highly skilled in operational and enterprise military functions. For the time being, this is all that can reasonably be accomplished.

This will also require, at a minimum, extended tenure, more effective matching of officer talents and positions, and, probably most importantly, a deliberate commitment to rigorous, formal assessment programs throughout an officer's career. For more details on policies the Army should develop in support of this workforce optimization, see Colarusso and Lyle's *Senior Officer Talent Management: Fostering Institutional Adaptability*.

Finally, we acknowledge that if current compensation remains fixed and the Army raises its accession and promotions standards relative to cognitive testing, there would likely be shortfalls in officer production and staffing. Conversely, if current compensation

remains fixed and the Army wants to staff the force, it will need to maintain its low mental standards. However, there is no reason that compensation must remain fixed. The solution requires a balance between all three elements: manning requirements, cognitive standards, and compensation. Given our calls for higher expectations in terms of cognitive ability, a corresponding increase in compensation also seems in order. Highly capable individuals have options, and inducing them to join and stay in the Army as officers requires appropriate compensation. An AVF is an effective but expensive system; such a force staffed with more cognitively capable leaders will naturally require additional investment.

ENDNOTES - CHAPTER 10

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28. The term whole man score was changed to the whole person score after the admission of women into the USMA in 1976. Today, it is called the whole candidate score (WCS).

29. Initially, academic measures included high school rank, College Entrance Examination Board (CEEB) scores, verbal and mathematical subtests of the SAT (formerly known as the Scholastic Aptitude Test or the Scholastic Assessment Test), the English Composition Achievement Test, and the Mathematics Achievement Test.

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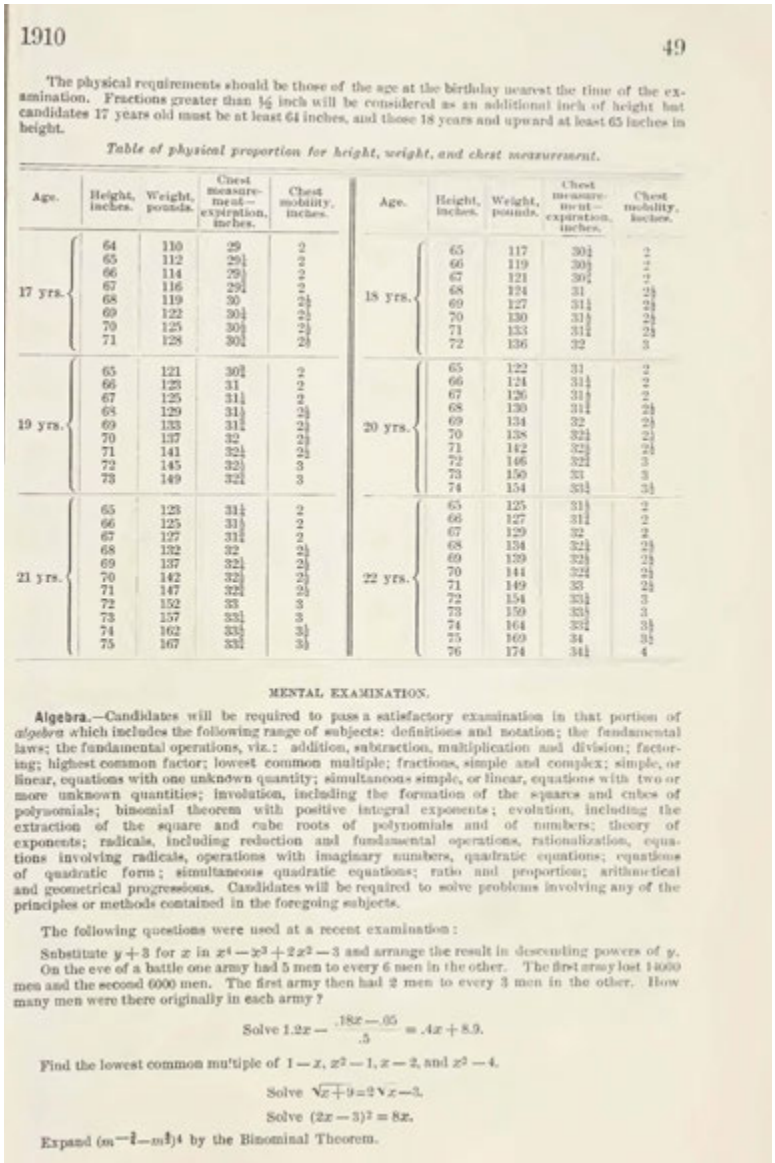
APPENDIX A



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The physical requirements should be those of the age at the birthday nearest the time of the examination. Fractions greater than ½ inch will be considered as an additional inch of height but candidates 17 years old must be at least 64 inches, and those 18 years and upward at least 65 inches in height.

Table of physical proportion for height, weight, and chest measurement.

Age.	Height, inches.	Weight, pounds.	Chest measurement—expiration, inches.	Chest mobility, inches.
17 yrs.	64	110	29	2
	65	112	29½	2
	66	114	29½	2
	67	116	29½	2
	68	119	30	2½
	69	122	30½	2½
	70	125	30½	2½
	71	128	30½	2½
19 yrs.	65	121	30½	2
	66	123	31	2
	67	125	31½	2
	68	129	31½	2½
	69	133	31½	2½
	70	137	32	2½
	71	141	32½	2½
	72	145	32½	3
	73	149	32½	3
21 yrs.	65	123	31½	2
	66	125	31½	2
	67	127	31½	2
	68	132	32	2½
	69	137	32½	2½
	70	142	32½	2½
	71	147	32½	2½
	72	152	33	3
	73	157	33½	3
	74	162	33½	3½
	75	167	33½	3½
18 yrs.	65	117	30½	2
	66	119	30½	2
	67	121	30½	2
	68	124	31	2½
	69	127	31½	2½
	70	130	31½	2½
	71	133	31½	2½
	72	136	32	3
20 yrs.	65	122	31	2
	66	124	31½	2
	67	126	31½	2
	68	130	31½	2½
	69	134	32	2½
	70	138	32½	2½
	71	142	32½	2½
	72	146	32½	3
	73	150	33	3
	74	154	33½	3½
22 yrs.	65	125	31½	2
	66	127	31½	2
	67	129	32	2
	68	134	32½	2½
	69	139	32½	2½
	70	144	32½	2½
	71	149	33	2½
	72	154	33½	3
	73	159	33½	3
	74	164	33½	3½
	75	169	34	3½
	76	174	34½	4

MENTAL EXAMINATION.

Algebra.—Candidates will be required to pass a satisfactory examination in that portion of *algebra* which includes the following range of subjects: definitions and notation; the fundamental laws; the fundamental operations, viz.: addition, subtraction, multiplication and division; factoring; highest common factor; lowest common multiple; fractions, simple and complex; simple, or linear, equations with one unknown quantity; simultaneous simple, or linear, equations with two or more unknown quantities; involution, including the formation of the squares and cubes of polynomials; binomial theorem with positive integral exponents; evolution, including the extraction of the square and cube roots of polynomials and of numbers; theory of exponents; radicals, including reduction and fundamental operations, rationalization, equations involving radicals, operations with imaginary numbers, quadratic equations; equations of quadratic form; simultaneous quadratic equations; ratio and proportion; arithmetical and geometrical progressions. Candidates will be required to solve problems involving any of the principles or methods contained in the foregoing subjects.

The following questions were used at a recent examination:

Substitute $y+3$ for x in $x^4-x^3+2x^2-3$ and arrange the result in descending powers of y.

On the eve of a battle one army had 5 men to every 6 men in the other. The first army lost 14000 men and the second 6000 men. The first army then had 2 men to every 3 men in the other. How many men were there originally in each army?

$$\text{Solve } 1.2x-\frac{.18x-.05}{.5}=.4x+8.9.$$

Find the lowest common multiple of $1-x$, x^2-1, $x-2$, and x^3-4.

$$\text{Solve } \sqrt{x+9}=2\sqrt{x-3}.$$

$$\text{Solve } (2x-3)^2=8x.$$

Expand $(m^{-\frac{1}{2}}-m^{\frac{1}{2}})^4$ by the Binominal Theorem.

Figure A-1. Excerpt from the *Official Register of the Officers and Cadets of the United States Military Academy*, 1910.[1]

Find all the values of a for which the roots of $ax^2 + 2(a+3)x + 16 = 0$ are equal.

Solve $\frac{x+y}{2} - \frac{x-y}{3} = 8$ and $\frac{x+y}{3} + \frac{x-y}{4} = 11$.

Solve $x^2 - 4y^2 = 9$, $xy + 2y^2 = 3$.

A certain article of consumption is subject to a duty of $1.50 per cwt. In consequence of a reduction in duty the consumption increases one half, but the revenue falls off one third. Find the duty per cwt. after the reduction.

A and B run a mile. First A gives B a start of 44 yards and beats him by 51 seconds; at the second heat A gives B a start of 1 minute and 15 seconds and is beaten by 88 yards. Find the time in which A and B can run a mile separately.

Sum to infinity the progression $3 + 2 + \frac{4}{3} \ldots\ldots$

A servant agrees for certain wages the first month, on the understanding that they are to be raised a dollar every subsequent month until they reach $60 a month. At the end of the first of the months for which he receives $60 he finds that his wages during his time of service have averaged $48 per month. How long has he served?

Plane Geometry.—Candidates will be required to give accurate definitions of the terms used in *plane geometry*, to demonstrate any proposition of plane geometry as given in the ordinary text-books and to solve simple geometrical problems either by a construction or by an application of algebra.

The following questions were used at a recent examination:

Define the following:

1°. Rhombus. 2°. A mean proportional. 3°. Similar triangles. 4°. A segment of a circle. 5°. The apothem of a regular polygon.

Theorem: The perpendicular is the shortest line between a point and a straight line.

Theorem: In the same circle or equal circles, the less of two chords is at the greater distance from the centre; conversely, the chord at the greater distance from the centre is the less.

Construction: Divide a given straight line internally in extreme and mean ratio.

Theorem: The areas of two triangles which have an angle of one equal to the angle of the other are to each other as the products of the sides including those angles.

Problem: Given a circle of unit diameter and the side of a regular inscribed polygon, find the side of a regular inscribed polygon of double the number of sides.

Theorem: The four bisectors of the four angles of a quadrilateral form a second quadrilateral, the opposite angles of which are supplementary.

Theorem: If on the diameter of a circle two points be taken equally distant from the centre, the sum of the squares of the distances of any point of the circumference from these two points is constant.

Problem: Find the locus of the point of intersection of the three altitudes of a triangle, given a fixed base, and constant angle at the vertex.

English Grammar.—Candidates must have a good knowledge of *English grammar;* they must be able to define the terms used therein; to define the parts of speech; to give inflections, including declension, conjugation and comparison; to give the corresponding masculine and feminine gender nouns; to give and apply the ordinary rules of syntax.

They must be able to parse correctly any ordinary sentence; giving the subject of each verb, the governing word of each objective case, the word for which each pronoun stands or to which it refers, the words between which each preposition shows the relation, precisely what each conjunction and each relative pronoun connects, what each adjective and adverb qualifies or limits, the construction of each infinitive, and generally to show a good knowledge of the function of each word in the sentence.

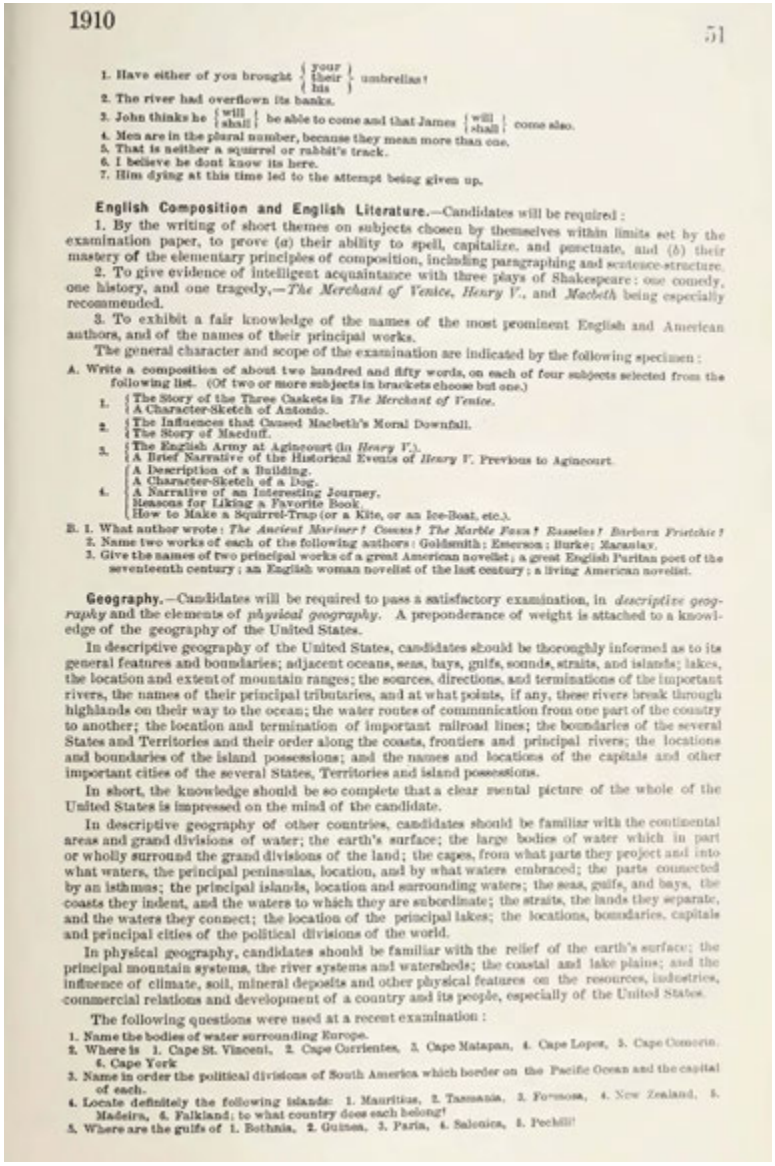
They must be able to correct in sentences or extracts any ordinary grammatical errors.

It is not required that any particular text-book shall be followed; but the definitions, parsing, and corrections must be in accordance with good usage and common sense.

The examination may include questions similar to the following:

1. Define and give example of: *a.* infinitive; *b.* indirect object; *c.* simple sentence.
2. Give the principal parts of: *a.* choose; *b.* crow; *c.* freeze; *d.* fly; *e.* burst.
3. (i). Give the plurals of: *a.* motto; *b.* fairy; *c.* money; *d.* belief; *e.* axis. (ii). Indicate which of the following words are singular, which are plural, and which may be either: *a.* cherubim; *b* mathematics; *c.* species; *d.* basis; *e.* news.
4. (i). Give the feminine of: *a.* hero; *b.* gander; *c.* duke; *d.* priest; *e.* Englishman. (ii). Indicate the gender of; *a.* songster; *b.* spinster; *c.* goose; *d.* mouse; *e.* book.
5. (i). Give the possessive case singular of: *a.* it; *b.* princes; *c.* Kings of Italy; *d.* Henry the Fourth; *e.* man-of-war. (ii). Give the possessive case plural of: *a.* brother-in-law; *b.* Jones; *c.* I; *d.* who; *e.* Mussulman.
6. Give the comparison of: *a.* mournful; *b.* little; *c.* great; *d.* old; *e.* angry.
7. Parse the *italicized* words in the following sentence: Other *things being equal, it* is *obvious that* the writer who has most words *to choose from* is *most likely* to find in *his* assortment *just* the word *which* he needs *at* a given moment.
8. Correct all errors in the following sentences. Of words in brackets { } draw a line through the incorrect word or words:

Figure A-1. Excerpt from the *Official Register of the Officers and Cadets of the United States Military Academy,* 1910. (cont.)



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1. Have either of you brought { your / their / his } umbrellas?
2. The river had overflown its banks.
3. John thinks he { will / shall } be able to come and that James { will / shall } come also.
4. Men are in the plural number, because they mean more than one.
5. That is neither a squirrel or rabbit's track.
6. I believe he dont know its here.
7. Him dying at this time led to the attempt being given up.

English Composition and English Literature.—Candidates will be required:

1. By the writing of short themes on subjects chosen by themselves within limits set by the examination paper, to prove (*a*) their ability to spell, capitalize, and punctuate, and (*b*) their mastery of the elementary principles of composition, including paragraphing and sentence-structure.

2. To give evidence of intelligent acquaintance with three plays of Shakespeare: one comedy, one history, and one tragedy,—*The Merchant of Venice*, *Henry V.*, and *Macbeth* being especially recommended.

3. To exhibit a fair knowledge of the names of the most prominent English and American authors, and of the names of their principal works.

The general character and scope of the examination are indicated by the following specimen:

A. Write a composition of about two hundred and fifty words, on each of four subjects selected from the following list. (Of two or more subjects in brackets choose but one.)

1. { The Story of the Three Caskets in *The Merchant of Venice*. / A Character-Sketch of Antonio.
2. { The Influences that Caused Macbeth's Moral Downfall. / The Story of Macduff.
3. { The English Army at Agincourt (in *Henry V.*). / A Brief Narrative of the Historical Events of *Henry V.* Previous to Agincourt.
4. { A Description of a Building. / A Character-Sketch of a Dog. / A Narrative of an Interesting Journey. / Reasons for Liking a Favorite Book. / How to Make a Squirrel-Trap (or a Kite, or an Ice-Boat, etc.).

B. 1. What author wrote: *The Ancient Mariner*? *Comus*? *The Marble Faun*? *Rasselas*? *Barbara Frietchie*?
2. Name two works of each of the following authors: Goldsmith; Emerson; Burke; Macaulay.
3. Give the names of two principal works of a great American novelist; a great English Puritan poet of the seventeenth century; an English woman novelist of the last century; a living American novelist.

Geography.—Candidates will be required to pass a satisfactory examination, in *descriptive geography* and the elements of *physical geography*. A preponderance of weight is attached to a knowledge of the geography of the United States.

In descriptive geography of the United States, candidates should be thoroughly informed as to its general features and boundaries; adjacent oceans, seas, bays, gulfs, sounds, straits, and islands; lakes, the location and extent of mountain ranges; the sources, directions, and terminations of the important rivers, the names of their principal tributaries, and at what points, if any, these rivers break through highlands on their way to the ocean; the water routes of communication from one part of the country to another; the location and termination of important railroad lines; the boundaries of the several States and Territories and their order along the coasts, frontiers and principal rivers; the locations and boundaries of the island possessions; and the names and locations of the capitals and other important cities of the several States, Territories and island possessions.

In short, the knowledge should be so complete that a clear mental picture of the whole of the United States is impressed on the mind of the candidate.

In descriptive geography of other countries, candidates should be familiar with the continental areas and grand divisions of water; the earth's surface; the large bodies of water which in part or wholly surround the grand divisions of the land; the capes, from what parts they project and into what waters, the principal peninsulas, location, and by what waters embraced; the parts connected by an isthmus; the principal islands, location and surrounding waters; the seas, gulfs, and bays, the coasts they indent, and the waters to which they are subordinate; the straits, the lands they separate, and the waters they connect; the location of the principal lakes; the locations, boundaries, capitals and principal cities of the political divisions of the world.

In physical geography, candidates should be familiar with the relief of the earth's surface; the principal mountain systems, the river systems and watersheds; the coastal and lake plains; and the influence of climate, soil, mineral deposits and other physical features on the resources, industries, commercial relations and development of a country and its people, especially of the United States.

The following questions were used at a recent examination:

1. Name the bodies of water surrounding Europe.
2. Where is 1. Cape St. Vincent, 2. Cape Corrientes, 3. Cape Matapan, 4. Cape Lopez, 5. Cape Comorin, 6. Cape York
3. Name in order the political divisions of South America which border on the Pacific Ocean and the capital of each.
4. Locate definitely the following islands: 1. Mauritius, 2. Tasmania, 3. Formosa, 4. New Zealand, 5. Madeira, 6. Falkland; to what country does each belong?
5. Where are the gulfs of 1. Bothnia, 2. Guinea, 3. Paria, 4. Salonica, 5. Pechili?

Figure A-1. Excerpt from the *Official Register of the Officers and Cadets of the United States Military Academy*, 1910. (cont.)

6. What lands are separated and what waters connected by 1. Torres Strait, 2. Hudson Strait, 3. Strait of Malacca?
7. Bound Italy; name its capital, largest river and principal mountain range.
8. Locate definitely the following cities: 1. Vienna, 2. Nankin, 3. Cork, 4. Tunis, 5. Montevideo, 6. Batavia, 7. Suez, 8. Pretoria.
9. Name in order the waters traversed in sailing from Liverpool, England, to Hong Kong, China.
10. A considerable portion of the boundary line of the United States is along what parallel?
11. Locate definitely the following: 1. Flathead Lake, 2. Sabine Pass, 3. Black Hills, 4. Sebago Lake, 5. Cape Lookout, 6. Montauk Point, 7. Wichita Mountains, 8. Lingayen Bay.
12. The meridian of Minneapolis passes through what states?
13. Name the principal rivers that drain Pennsylvania: where do they rise, at what points do they leave the state and at what points, if any, do they break through highlands?
14. Name all the waters traversed in going by the two commercial water routes from Duluth to the Atlantic Ocean.
15. Name the principal ranges of mountains crossed in going by rail from New York to San Francisco; state the rail route assumed to be traveled.
16. Bound precisely the following States and Territories: 1. Montana, 2. Arizona, 3. Arkansas, 4. Wisconsin, 5. Pennsylvania, 6. Georgia. (In bounding, all contiguous states must be mentioned as well as rivers, mountain ranges, etc.)
17. Name the states west of the Mississippi River, drained wholly or in part by it or its tributaries, and give the capital of each.
18. Locate accurately the following cities: 1. Austin, 2. Pensacola, 3. Asheville, 4. Winchester, 5. Allegheny, 6. Hollo, 7. Oswego, 8. Pasadena, 9. Guthrie, 10. Detroit.
19. Going by water from New Orleans, La., to Pittsburgh, Pa., what States would you pass on the left?
20. How many large islands are there in the Hawaiian group? Which is the largest? Which is the most important?
21. Going westward on the 35th parallel of north latitude, from near Newberne, N. C., what States and large rivers would be crossed?
22. Describe the chief mountain system of the eastern hemisphere, and state what island chains of Asia abound in volcanoes.
23. What are the great river systems of South America? Where are the principal coastal plains?
24. What are the qualifications of a good harbor? Name three of the best harbors on the Atlantic coast; one on the Pacific coast.
25. What has made the Middle Atlantic States the principal commercial section of the United States?

History.—Candidates must be thoroughly familiar with so much of the History of the United States, and of Ancient Greece and Rome as is contained in good high-school text-books on these subjects, and must have a good knowledge of the important facts in General Ancient History and in the History of Medieval Europe to the end of the fifteenth century.

In History of the United States, the examination will include questions concerning early discoveries and settlements; the forms of government in the colonies; the causes, leading events, and results of wars; important events in the political and economic history of the nation since its foundation; and the elementary principles of civil government with special reference to the federal congress, executive, and judiciary.

In Ancient History, the examination will include questions on important persons and events in the legendary and authentic history of Greece and Rome, and on general important facts in the history of other ancient peoples, taking some account also of Greek art, of Greek and Roman literature, and especially of Roman government.

In History of Medieval Europe, the greater emphasis will be laid on the period from Charlemagne to the end of the Middle Ages, particularly on events connected with the political and social development of England.

Questions similar to the following in character and scope are likely to be asked:

1. What explorations or discoveries did each of the following named persons make? Give the date in each case. *a.* Narvaez. *b.* Coronado. *c.* Marquette. *d.* La Salle
2. Name three colonies that were founded for religious reasons and give the sect or denomination by which each was colonized.
3. Who were the Pilgrims? Explain the difference between "Pilgrim" and "Puritan."
4. When, and under what circumstances was Delaware separated from Pennsylvania?
5. Give an account of Bacon's Rebellion.
6. When and where did each of the following events occur? *a.* Meeting of the first Colonial Congress *b.* Burgoyne's surrender. *c.* Arnold's treason.
7. Name some important results of each of the following battles of the Revolutionary War: *a.* Long Island. *b.* Trenton. *c.* Brandywine.
8. Name four additions to the Territory of the United States since the Revolutionary War, and give the way each has been acquired.
9. Bound the Territory of the United States at the close of the Revolutionary War.
10. What was the "Massacre of Wyoming"?
11. When, where, and for what purpose, did the Constitutional Convention meet? What resulted from its deliberations?
12. What was the "Whiskey Insurrection"?
13. What were the "Alien and Sedition" laws? What was their effect?
14. When and where was the last battle of the War of 1812 fought? Name the commanders on each side.
15. What were the two principal political parties in 1860? Their candidates for the Presidency? Their leading doctrines on the slavery question? Parties. Candidates. Principles
16. With what foreign nations had the United States unfriendly relations during and at the close of the Civil War? Give the cause in each case.
17. Name, with date, three important military events of 1865.

Figure A-1. Excerpt from the *Official Register of the Officers and Cadets of the United States Military Academy*, 1910. (cont.)

18. What Vice-Presidents have become President? Name the predecessor in each case.
19. Give an account of the "Virginius affair."
20. In what war were the following battles fought? What were the opposing forces? Which side won?
    a. Ticonderoga. *b.* Monterey. *c.* Saratoga. *d.* Stony Point. *e.* Spottsylvania. *f.* Lundy's Lane.
21. By what authority could Lincoln proclaim the emancipation of the slaves? What states were immediately affected by the Emancipation Proclamation? How was emancipation legally completed later?
22. How may the Constitution of the United States be amended? Name two important constitutional amendments.
23. Name three offices in the cabinet of the President of the United States, and state the chief duties that belong to each.
24. Explain as briefly as possible how a minority of actual votes might defeat a majority at a presidential election.
25. Define Electoral College; Spoils System; Primary; Supreme Court.

1. Into what general periods is the history of Egypt divided? What did Egypt contribute to Greek civilization?
2. Name one of the great kings of Assyria. Mention two important facts concerning the city of Nineveh.
3. Mention the principal events of the reign of Darius I., and the most noteworthy feature of his government. Of what nation was he ruler?
4. Mention three important facts in connection with the Phœnicians as traders and colonizers in the West.
5. Who were: Agamemnon? Achilles? Hercules? Homer?
6. Mention two ways in which the physical geography of Greece influenced the national life and character.
7. What was the nature of the government of Athens after the expulsion of the Tyrants?
8. Name four great battles of the Græco-Persian War, and give the date of any two of them.
9. What States were the leaders in the great war between the States of Greece? What caused the war? What were its chief results?
10. Outline the career of conquest of Alexander the Great. About when did he die? How would his undertaking have been more difficult if he had turned west instead of east?
11. In Greek History what is the significance of the following names and phrases: Aristides? The Olympian Games? Solon? The Confederacy of Delos? Delphi? Sophocles? Praxiteles?
12. Give the main points in the Greek colonial system. How did the Roman colonial system differ most conspicuously from the Greek?
13. Give the titles of the principal officers of the Roman Republic and describe their functions.
14. What were the Punic Wars? How many in number? Name two great generals on each side.
15. Mention four causes that led to the fall of the Roman Republic. Discuss briefly the operation of two of them toward this result.
16. Why did the Emperors persecute the Christians? State the attitude of Diocletian and Constantine respectively toward the Christians.
17. For what is each of the following emperors most famous: Marcus Aurelius? Justinian? Nero?
18. In Roman History what is the significance of: The Gracchi? Horace? The Comitia Curiata? Verres? The Battle of Chalons? A Pyrrhian Victory? Æneas? Alaric?
19. What do the following dates mean to you: 800? 1066? 1215? 1453?
20. What do you know of Joan of Arc?
21. How did the Feudal System originate? Define Suzerain, Vassal, Serf.
22. What was The Renaissance? By what inventions and discoveries was it quickened? Through what channel was ancient science transmitted to modern times?
23. Who was Simon de Montfort?
24. What changes took place in the condition of the English peasantry in the fourteenth century? Due to what causes?
25. Toward the close of the fifteenth century in England was the power of Parliament becoming greater or less than it had been previously? By what right was Henry IV. King of England? What was the earliest form of parliamentary assembly in English History?

ACADEMIC DUTIES.

The academic duties of new cadets commence on the 11th day of March. The academic duties and exercises of the other cadets commence on the 1st day of September and continue until about the 5th of June. Examinations of the several classes are held in December and June. At the December examination cadets, who are found to be proficient in their studies, are arranged according to merit in each subject. At the June examination they are similarly arranged and they are also assigned general standing in the class as determined by their standings in the various subjects. When a subject of study is completed during a term an examination concluding the work in that subject is sometimes held. Cadets deficient in studies at any examination are discharged from the Academy unless for special reasons the Academic Board recommends otherwise. Cadets exceeding at any time the maximum number of demerits allowed for six months are immediately reported to the Academic Board as deficient in conduct and are discharged.

PHYSICAL EXAMINATION.

All cadets are examined physically in June of each year, and those found physically disqualified to continue with the course or, in case of the first class, for commission in the Army, are discharged.

VACATIONS AND LEAVES OF ABSENCE.

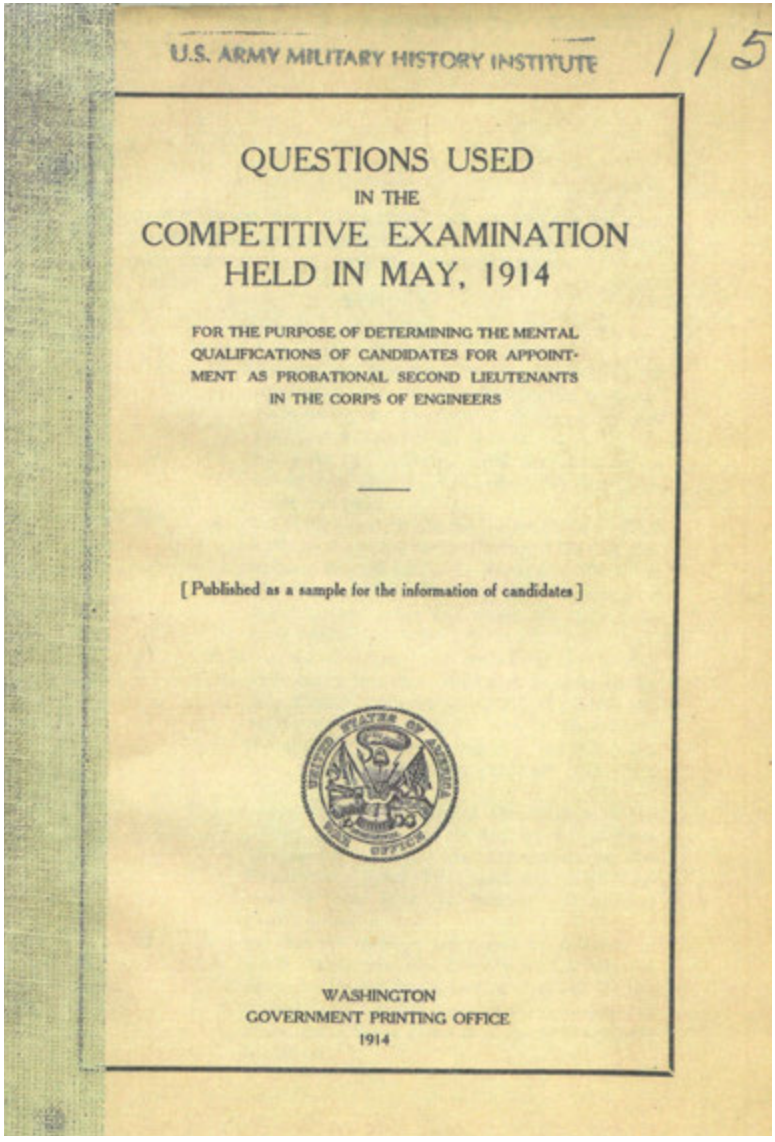
Academic duties are suspended from the completion of the June examinations until the end of August. During this period cadets live in camp and are engaged in military duties and exercises and in receiving practical instruction in military and other subjects. Academic duties are also suspended from the close of the semi-annual examination, about December 22rd, until January 2nd, and on the

Figure A-1. Excerpt from the *Official Register of the Officers and Cadets of the United States Military Academy*, 1910. (cont.)

ENDNOTES – APPENDIX A

1. U.S. Military Academy (USMA), *Official Register of the Officers and Cadets of the United States Military Academy*, West Point, NY: United States Military Academy Printing Office, 1910, pp. 49-53, available from *https://archive.org/details/officialregister1910west*, accessed September 29, 2017.

APPENDIX B


U.S. ARMY MILITARY HISTORY INSTITUTE

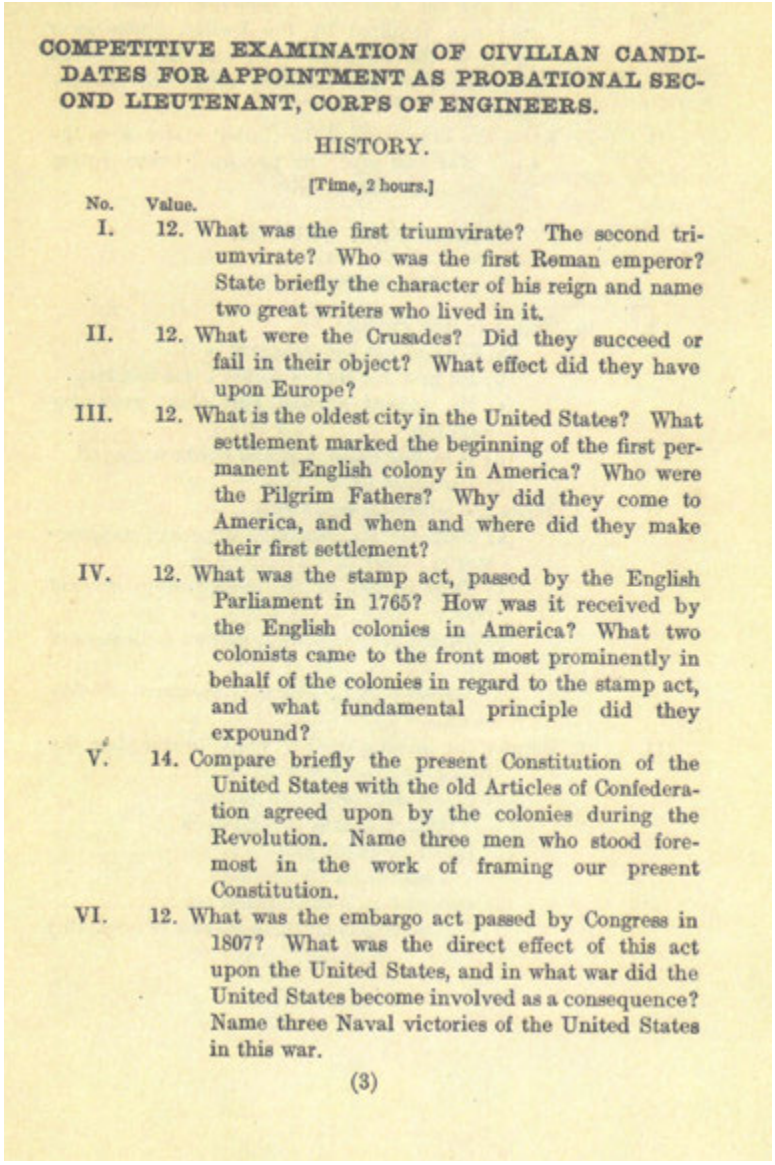
QUESTIONS USED
IN THE
COMPETITIVE EXAMINATION
HELD IN MAY, 1914

FOR THE PURPOSE OF DETERMINING THE MENTAL QUALIFICATIONS OF CANDIDATES FOR APPOINTMENT AS PROBATIONAL SECOND LIEUTENANTS IN THE CORPS OF ENGINEERS

[Published as a sample for the information of candidates]

WASHINGTON
GOVERNMENT PRINTING OFFICE
1914

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.*[1]



COMPETITIVE EXAMINATION OF CIVILIAN CANDIDATES FOR APPOINTMENT AS PROBATIONAL SECOND LIEUTENANT, CORPS OF ENGINEERS.

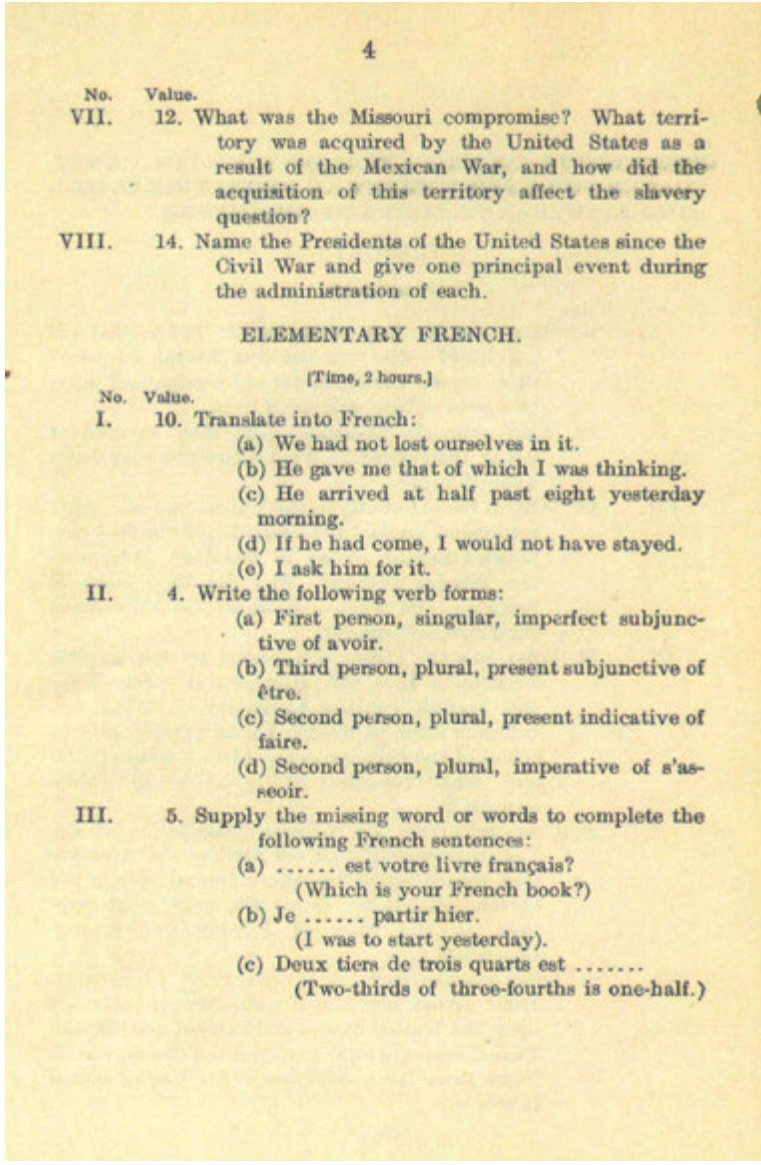
HISTORY.

[Time, 2 hours.]

No.	Value.	
I.	12.	What was the first triumvirate? The second triumvirate? Who was the first Roman emperor? State briefly the character of his reign and name two great writers who lived in it.
II.	12.	What were the Crusades? Did they succeed or fail in their object? What effect did they have upon Europe?
III.	12.	What is the oldest city in the United States? What settlement marked the beginning of the first permanent English colony in America? Who were the Pilgrim Fathers? Why did they come to America, and when and where did they make their first settlement?
IV.	12.	What was the stamp act, passed by the English Parliament in 1765? How was it received by the English colonies in America? What two colonists came to the front most prominently in behalf of the colonies in regard to the stamp act, and what fundamental principle did they expound?
V.	14.	Compare briefly the present Constitution of the United States with the old Articles of Confederation agreed upon by the colonies during the Revolution. Name three men who stood foremost in the work of framing our present Constitution.
VI.	12.	What was the embargo act passed by Congress in 1807? What was the direct effect of this act upon the United States, and in what war did the United States become involved as a consequence? Name three Naval victories of the United States in this war.

(3)

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)



4

No. Value.

VII. 12. What was the Missouri compromise? What territory was acquired by the United States as a result of the Mexican War, and how did the acquisition of this territory affect the slavery question?

VIII. 14. Name the Presidents of the United States since the Civil War and give one principal event during the administration of each.

ELEMENTARY FRENCH.

[Time, 2 hours.]

No. Value.

I. 10. Translate into French:

(a) We had not lost ourselves in it.
(b) He gave me that of which I was thinking.
(c) He arrived at half past eight yesterday morning.
(d) If he had come, I would not have stayed.
(e) I ask him for it.

II. 4. Write the following verb forms:

(a) First person, singular, imperfect subjunctive of avoir.
(b) Third person, plural, present subjunctive of être.
(c) Second person, plural, present indicative of faire.
(d) Second person, plural, imperative of s'asseoir.

III. 5. Supply the missing word or words to complete the following French sentences:

(a) ..... est votre livre français?
(Which is your French book?)
(b) Je ..... partir hier.
(I was to start yesterday).
(c) Deux tiers de trois quarts est .....
(Two-thirds of three-fourths is one-half.)

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No. Value.

IV. 15. Translate into French the following:

On the whole, the voyage has been very fine; we have read novels, played on the piano, listened to music, sung, danced, etc. There has been neither storm nor fog, nor shipwreck. Yet how happy we were when at last the cry, "Land! land!" resounded. Soon many people thronged the deck; some passengers used their field glasses to look at the coast. There is France! We have caught a glimpse of the landing place. There is the Havre! The steamer slackened her speed.

V. 25. Translate the following into English:

LA CIGALE ET LA FOURMI.

La cigale, ayant chanté
Tout l'été,
Se trouva fort dépourvue
Quand la bise fût venue;
Pas un seul morceau
De mouche ou de vermisseau.
Elle alla crier famine
Chez la fourmi sa voisine,
La priant de lui prêter
Quelque grain pour subsister
Jusqu'à la saison nouvelle.
"Je vous paierai, lui dit-elle,
Avant l'août, foi d'animal,
Intérêt et principal."
La fourmi n'est pas prêteuse;
C'est là son moindre défaut.
"Que faisiez-vous au temps chaud?
Dit-elle à cette emprunteuse.
— Nuit et jour à tout venant
Je chantais, ne vous déplaise.
— Vous chantiez? j'en suis fort aise;
Eh bien! Dansez maintenant."

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No. Value.

VI. 40. Translate into English the following:

UN NEZ GELÉ.

Un jour je me décidai à faire mes courses en me promenant. Je m'armai de pied en cap contre les hostilités du froid; je m'enveloppai d'une grande redingote d'astracan; je m'enfonçai un bonnet fourré sur les oreilles; je roulai autour de mon cou une cravate de cachemire, et je m'aventurai dans la rue, n'ayant de toute ma personne que le bout du nez à l'air.

D'abord tout alla à merveille, je m'étonnai même du peu d'impression que me causait le froid, et je riais tout bas de tous les contes que j'en avais entendu faire; j'étais, au reste, enchanté que le hasard m'eût donné cette occasion pour m'acclimater. Néanmoins, comme les deux premiers écoliers chez lesquels je me rendais n'étaient point chez eux, je commençais à trouver que le hasard faisait trop bien les choses, lorsque je crus remarquer que ceux que je croisais me regardaient avec une certaine inquiétude, mais cependant sans me rien dire. Bientôt un monsieur, plus causeur, à ce qu'il paraît, que les autres, me dit en passant: Nofs! Comme je ne savais un mot de russe, je crus que ce n'était pas la peine de m'arrêter pour un monosyllable, et je continuai mon chemin. Au coin de la rue des Pois, je rencontrai un iostchik (cab driver) qui passait ventre à terre en conduisant son traîneau; mais si rapide que fût sa course, il se crut obligé de me parler à son tour, et me cria: Nofs! Nofs! Enfin, en arrivant sur la place de l'Amirauté, je me trouvai en face d'un mougick (Russian peasant), qui ne me cria

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

rien du tout, mais qui, ramassant une poignée de neige, se jeta sur moi, et avant que j'eusse pu me débarrasser de tout mon attirail se mit à me débarbouiller la figure et à me frotter, particulièrement le nez, de toute sa force. Je trouvai la plaisanterie assez médiocre, surtout par le temps qu'il faisait, et tirant un de mes bras d'une de mes poches, je lui allongeai un coup de poing qui l'envoya rouler à dix pas. Malheureusement où heureusement pour moi, en ce moment deux paysans passaient qui, après m'avoir regardé un instant, se jetèrent sur moi, et malgré ma défense me maintinrent les bras, tandis que mon enragé mougick ramassait une autre poignée de neige, et comme s'il ne voulait pas en avoir le démenti, se précipitait de nouveau sur moi. Cette fois, profitant de l'impossibilité où j'étais de me défendre, il recommença des frictions. Mais, si j'avais les bras pris, j'avais la langue libre; croyant que j'étais la victime de quelque méprise ou de quelque guet-apens, j'appelai de toute ma force au secours. Un officier accourut et me démanda en français à qui j'en avais.

ELEMENTARY GERMAN.

[Time, 2 hours.]

No.	Value.	
I.		9. Give the principal parts of the following verbs:
	1	(a) absprechen, to refuse.
	1	(b) essen, to eat.
	1	(c) fahren, to ride.
	1	(d) gelten, to be worth.
	1	(e) stehlen, to steal.
	1	(f) waschen, to wash.
	1	(g) sich erkälten, to take cold.
	1	(h) brennen, to burn.
	1	(i) kaufen, to buy.

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No.	Value.	
II.	10.	5 Give the synopsis of "essen," to eat, in the second person, singular number, indicative, subjunctive, conditional, and imperative of the active voice.
		5 Give the imperfect (preterite), indicative and subjunctive of the active voice of "anfangen," to begin.
III.	10.	Decline the following:
		3 (a) Ein grosser rother Apfel—a large red apple.
		3 (b) The possessive pronoun "euer," in all genders and numbers.
		4 (c) Prefix the proper form of the definite article (der, die, das) to the following words to show their gender, and also form the plurals (in such cases as it is possible to do so):

Pferd—horse.	Nacht—night.
Abend—evening.	Schüssel—dish.
Eltern—parents.	Käse—cheese.
Eisen—iron.	Gedicht—poem.
Adler—eagle.	Weib—wife.

IV.	5.	Translate into German:
		1 (a) The army is ten thousand men strong.
		1 (b) Our new carriage is too heavy a vehicle for so small a horse.
		1 (c) He has written his last exercise with an old pen.
		1 (d) The coldest weather generally comes later than the shortest day.
		1 (e) It would cost me my freedom and my life.
V	5.	There are mistakes in gender, case, or number in the following sentences; correct them and underline the corrections.
		1 (a) Ich danke Ihnen dass Sie mich geholfen haben. (I thank you for helping me.)
		1 (b) Sie erinnern sich wohl den jungen Mann, der im vorigen Jahre des Raubers angeklagt war. (You surely remember the young man who was accused of being robber last year.)

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No. Value.

V. 5. There are mistakes in gender, case, etc.—Contd.

1 (c) Als ich in dem Zimmer kam, fand ich dass meine Vater eingeschlafen war. (As I came into the room, I found that my father had fallen asleep.)

1 (d) Ich kann mein Rock nicht anziehen, der Schneider hat ihn mich zu eng gemacht. (I can not put on my coat—the tailor has made it too narrow for me.)

1 (e) Hier ist das Buch, der Sie mir gebracht haben. (Here is the book that you brought me.)

VI. 31. Translate:

DIE SCHLACHT BEI SPICHERN.

Am 5. August war die 14. Division des VII. Korps unter General von Kameke in Saarbrücken angelangt und hatte ermittelt, dass das Korps Frossard, welches die Höhen bei Spichern besetzt hielt, im Begriffe sei, über St. Avold abzuziehen. Um dies zu verhindern, besetzte Kameke die Höhen zûdlich von Saarbrücken und rückte gleich darauf zum Angriffe in der Richtung von Forbach vor. Diese Nachricht setzte sogleich die übrigen Teile des VII. Korps und das III. Korps der II. Armee in Bewegung auf Saarbrücken, von wo aus sie nach und nach in die Gefechtslinie einrückten. Die 13. Division des VII. Korps erhielt Befehl bei Völklingen über die Saar zu gehen und von dort aus den linken Flügel der Franzosen zu umgehen. Die französische Stellung auf den steilen und bewaldeten Höhen war eine von Natur starke und überall mit Schützengräben versehen. Mehr als eine Stunde lang verfolgte die Division Kameke allein ihre offensive Bewegung gegen die feindliche Übermacht und gewann sogar auf dem rechten Flügel, im Stieringer Walde, namhaften Erfolg. Auf dem linken Flügel aber wurde sie bald hart bedrängt und war ernstlich in Gefahr, gänzlich von den

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Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

eroberten Rändern des Giffert- und Stiftswaldes heruntergeworfen zu werden. Überdies wurden jetzt die Vorstosse der Franzosen immer kräftiger durch das Eingreifen der Division Bataille von ihrem Lager bei Spichern aus. Die nunmehr schnell anrückenden deutschen Abteilungen wurden, deshalb, alle auf den linken Flügel, und in das Zentrum geworfen, wo der Rote Berg von dem tapferen General von François erstürmt worden war, aber kaum gehalten werden konnte. Von einheitlicher Führung war von jetzt an kaum noch die Rede, und lange wogte der Kampf um die Höhen hin und her ohne bestimmten Plan und ohne Entscheidung. Erst als mit grösster Anstrengung eine bedeutende Masse deutscher Artillerie sich auf der Folster-Höhe festgezetzt hatte, gelang es den Deutschen, die Franzosen im Zentrum auf den Spichererberg zurückzudrängen. Auf ihrem linken Flügel hatten die letzteren das Dorf Stiering stark besetzt. Nach wiederholten Vorstössen mit immer frischen Unterstützungen gelang es den Deutschen, als es schon Nacht geworden war, in das Dorf einzudringen. Das Erscheinen der 13. Division im Westen von Vorbach (von Volklingen her) bewog endlich den General Frossard, sich über Öttingen zurückzuziehen. Die Nacht und die Unmöglichkeit, in diesem Gelände grössere Kavalleriemassen zu verwenden, schützten ihn vor weiterer Verfolgung.

No.	Value.	
VII.	30.	Translate:

Als der böse Krieg im Land war,
Streift' ich einst mit wenig deutschen
Reitern in dem Elsass drüben;
Hans von Weerth war unser Obrist.
Schwed' und Franzmann lag vor Breisach,
Von manch' tapferm Reiterstücklein
Machten wir ihr Lager sprechen,
Doch viel Hunde sind des Hasen
Tod,—auf einer wilden Hetzjagd

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No. Value.

VII. 30. Translate—Continued.

Hatte sich der ganze grosse
Helle Hauf an uns verbissen,
Und aus mancher Wunde blutend
Mussten wir die Säbel strecken
Kriegsgefangen transportierte
Der Franzos' uns nach Paris dann
In don Käfig von Vincennes.
"Tod und Teufel!" sprach der tapfre
Hans von Weerth, "'s war doch einst lust'ger
Im Galopp mit blankem Pallasch
Zur Attaque anzusprengen,
Als hier—auf der Pritsche liegend,
Mit der Langweile zu turnei'n;
Gegen die hilft keine Waffe,
Selbst nicht Wein und Würfelbecher,
Und der Tabak,—hab 's erprobet
Im gelobten Land der Langweil',
Bei den Mynheers—'s wird auch hier uns
Guten Dienst thun, lasst uns rauchen!"

ELEMENTARY SPANISH.

[Time, 2 hours.]

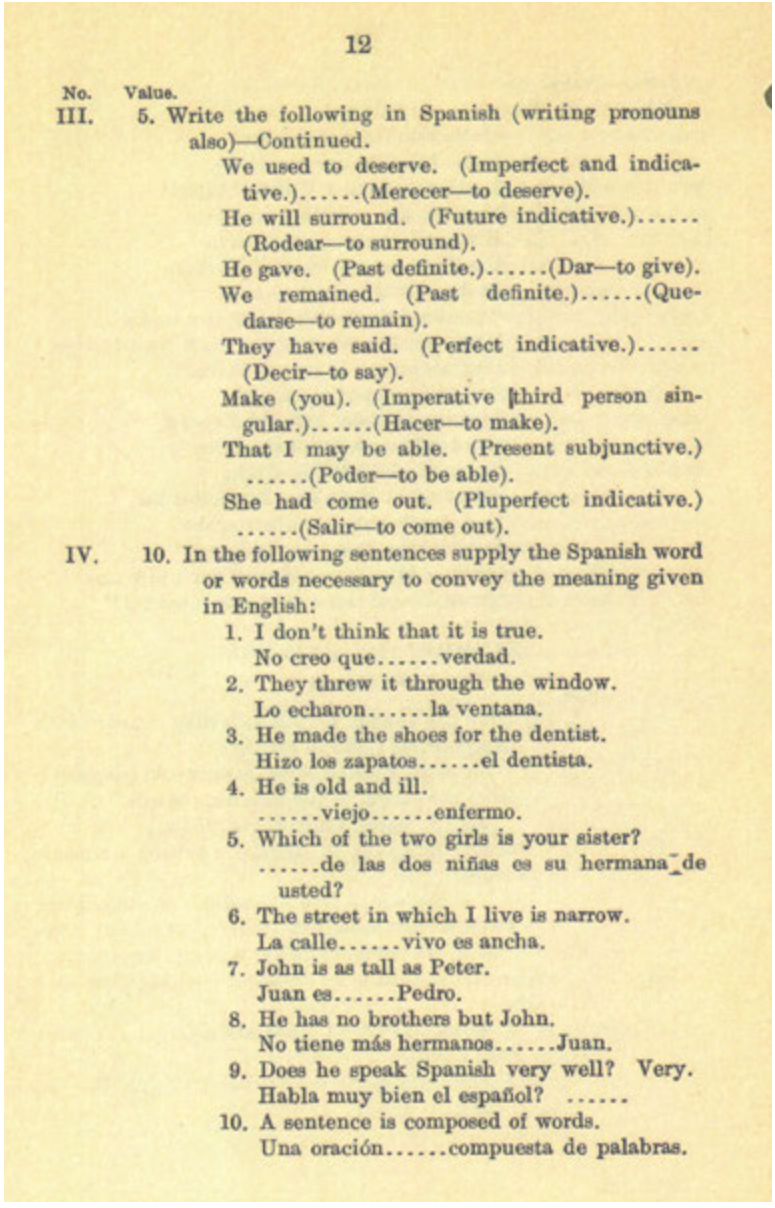
No. Value.

I 5. (a) Give the gender of the following words (with appropriate definite article):
Monarca, calidad, agua, contestación, desastre.
(b) Give the plural of the following words:
Jardín, autor, ciudad, voz, lápiz.

II. 5. Write the following in Spanish (writing numerals in words):
Twenty-one, five hundred eighty-three, twenty-four hundred, fourth, one-half, two-thirds, Tuesday, Sunday, August, February.

III. 5. Write the following in Spanish (writing pronouns also):
I have. (Present indicative.).....(Tener—to have).
I was. (Imperfect indicative.).....(Ser—to be).

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)



12

No. Value.

III. 5. Write the following in Spanish (writing pronouns also)—Continued.

We used to deserve. (Imperfect and indicative.).....(Merecer—to deserve).

He will surround. (Future indicative.)..... (Rodear—to surround).

He gave. (Past definite.).....(Dar—to give).

We remained. (Past definite.).....(Quedarse—to remain).

They have said. (Perfect indicative.)..... (Decir—to say).

Make (you). (Imperative third person singular.).....(Hacer—to make).

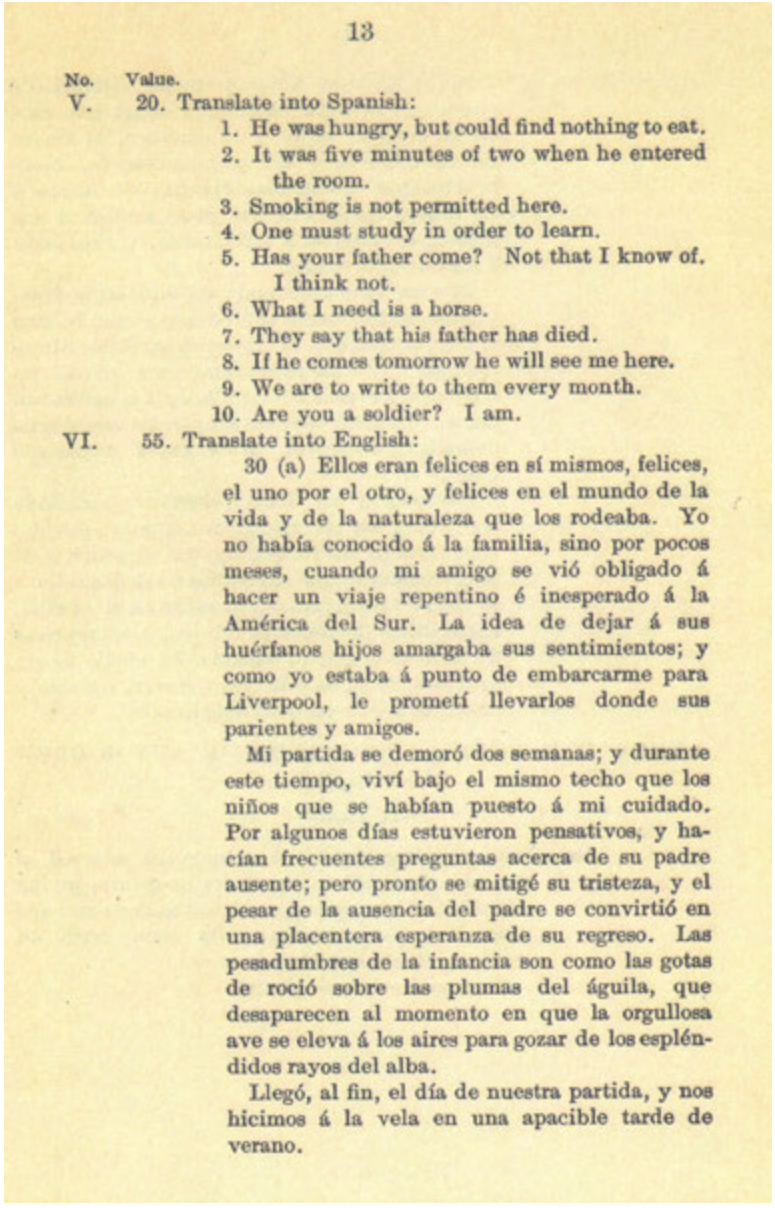
That I may be able. (Present subjunctive.) .....(Poder—to be able).

She had come out. (Pluperfect indicative.) .....(Salir—to come out).

IV. 10. In the following sentences supply the Spanish word or words necessary to convey the meaning given in English:

1. I don't think that it is true.
   No creo que.....verdad.
2. They threw it through the window.
   Lo echaron.....la ventana.
3. He made the shoes for the dentist.
   Hizo los zapatos.....el dentista.
4. He is old and ill.
   .....viejo.....enfermo.
5. Which of the two girls is your sister?
   .....de las dos niñas es su hermana de usted?
6. The street in which I live is narrow.
   La calle.....vivo es ancha.
7. John is as tall as Peter.
   Juan es.....Pedro.
8. He has no brothers but John.
   No tiene más hermanos.....Juan.
9. Does he speak Spanish very well? Very.
   Habla muy bien el español? .....
10. A sentence is composed of words.
    Una oración.....compuesta de palabras.

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)



13

No. Value.

V. 20. Translate into Spanish:

1. He was hungry, but could find nothing to eat.
2. It was five minutes of two when he entered the room.
3. Smoking is not permitted here.
4. One must study in order to learn.
5. Has your father come? Not that I know of. I think not.
6. What I need is a horse.
7. They say that his father has died.
8. If he comes tomorrow he will see me here.
9. We are to write to them every month.
10. Are you a soldier? I am.

VI. 55. Translate into English:

30 (a) Ellos eran felices en sí mismos, felices, el uno por el otro, y felices en el mundo de la vida y de la naturaleza que los rodeaba. Yo no había conocido á la familia, sino por pocos meses, cuando mi amigo se vió obligado á hacer un viaje repentino é inesperado á la América del Sur. La idea de dejar á sus huérfanos hijos amargaba sus sentimientos; y como yo estaba á punto de embarcarme para Liverpool, le prometí llevarlos donde sus parientes y amigos.

Mi partida se demoró dos semanas; y durante este tiempo, viví bajo el mismo techo que los niños que se habían puesto á mi cuidado. Por algunos días estuvieron pensativos, y hacían frecuentes preguntas acerca de su padre ausente; pero pronto se mitigé su tristeza, y el pesar de la ausencia del padre se convirtió en una placentera esperanza de su regreso. Las pesadumbres de la infancia son como las gotas de roció sobre las plumas del águila, que desaparecen al momento en que la orgullosa ave se eleva á los aires para gozar de los espléndidos rayos del alba.

Llegó, al fin, el día de nuestra partida, y nos hicimos á la vela en una apacible tarde de verano.

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

25 (b) El más sabio y mejor sistema de educación es indudablemente aquel que saca de la cuna al niño, y lo conduce, al través de la infancia y de la adolescencia, hasta la virilidad, de manera tal que dé fuerza á su brazo, ligereza á sus pies, solidez á sus músculos, simetría á sus formas, y expansión á sus energías vitales.

Es claro que este ramo de educación comprende, no solamente al alimento y vestido, sino el aire, el ejercicio, el alojamiento, el levantarse temprano, y cualquiera otra cosa que se requiere para el pleno desarrollo de la constitución física. La dista debe ser simple; los vestidos no demasiado calientes, ni la cama demasiado blanda.

Los padres no deben observar demasiada restricción en al manejo de su hijo querido. Que al elegir sus juegos, siga las sugestiones de la naturaleza. Que sus padres no se disgusten á la vista de sus montones de arena en el camino, sus castillos de nieve en febrero, y sus represas de lodo en abril; ni cuando, en medio de un aguacero de agosto, le vean correr, bañarse y jugar junto con las aves acuáticas.

A THOROUGH WORKING KNOWLEDGE OF ANY MODERN LANGUAGE.

[Time, 2 hours.]

No.	Value.	
I.	100.	Write a composition in the language selected of not less than 300 words on its literature, giving names of at least three prominent authors and one important work produced by each, with an analysis of any one of their works. Language selected—Polish.

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

ELEMENTS OF CONSTITUTIONAL AND INTERNATIONAL LAW.

[Time, 2 hours.]

No.	Value.	
I.	10.	6 (a) What is the principle of extraterritoriality? 4 (b) Give two (2) examples of its application.
II.	10.	6 (a) What is the Monroe doctrine? 4 (b) Give two (2) examples of its application.
III.	11.	6 (a) What is naturalization? 5 (b) What are the objects of naturalization treaties?
IV.	11.	6 (a) What is the purpose of treaties? 5 (b) How are treaties prepared and executed?
V.	11.	5 (a) What is the character of the neutral relation between states? 6 (b) Explain the responsibility of a neutral state for the acts of its subjects.
VI.	11.	6 (a) What is the composition of the two houses of Congress and how apportioned among the States? 5 (b) Is the Senate a continuing body? Explain.
VII.	8.	4 (a) If a State law or State constitution impairs the obligation of a contract, what is the result? 4 (b) May Congress pass laws which impair the obligation of contracts? Explain.
VIII.	10.	6 (a) How may an amendment to the Constitution be made? 4 (b) What provision is made for the government of Territories?
IX.	8.	5 (a) How are the United States judges appointed to office? 3 (b) How long do they serve?
X.	10.	6 (a) Name the courts belonging to the Federal judicial system? 4 (b) When a crime is not committed within any State, where may it be tried?

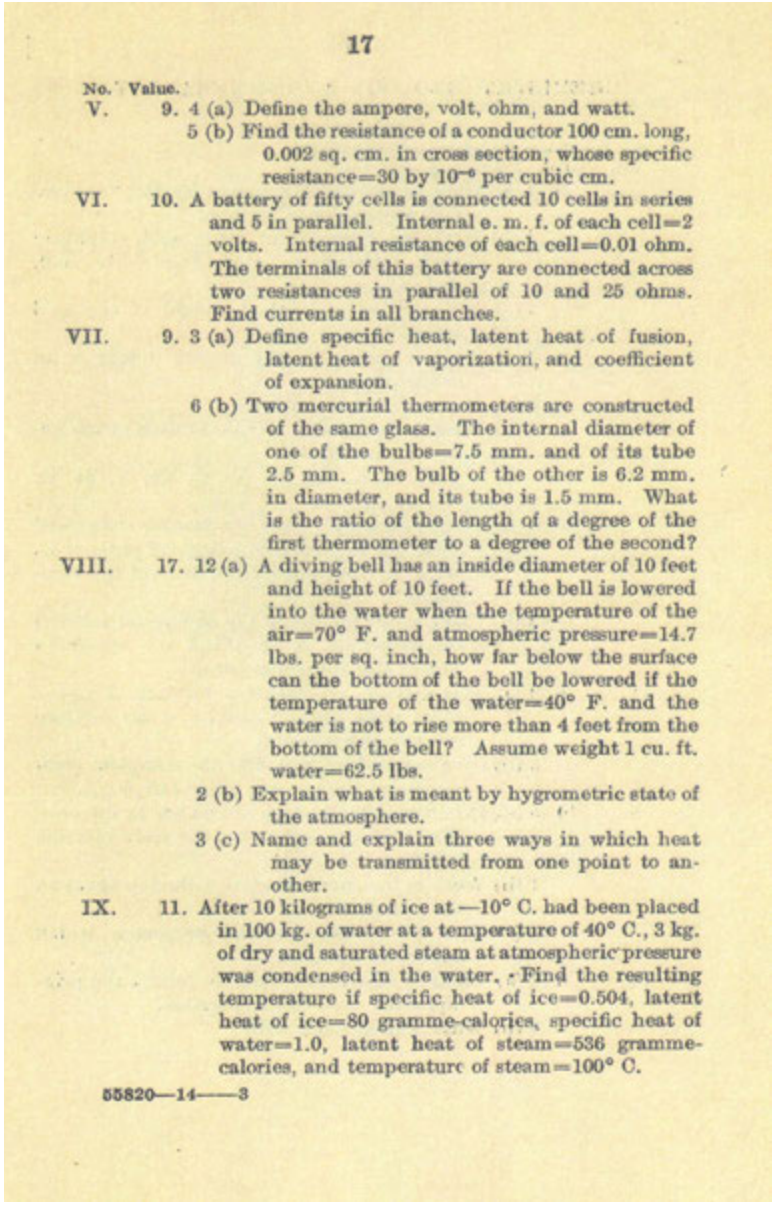
Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

PHYSICS, INCLUDING ELECTRICITY, MAGNETISM, HEAT, SOUND, AND LIGHT.

[Time, 3 hours.]

No.	Value.	
I.	13.	2 (a) Define refraction, index of refraction, real and virtual images.
		5 (b) Construct the image of a vertical arrow 2 units high whose base lies in the axis of a concave spherical mirror having a radius of curvature of 10 units, at a distance of 3 units from the mirror.
		6 (c) Two sources of light whose intensities are as 1:2 are 2 feet apart; at what position is a space between them equally illuminated?
II.	12.	9 (a) Construct a telescope consisting of a double convex objective and a double concave eye-piece. Radii of all faces=14 units and thickness of lenses=2 units. Distances between optical centers of lenses=15 units. The focal length of the convex lens=9 units and of the concave lens=4 units. Construct the final image of an arrow 3 units high placed 15 units beyond the objective and having its base in the optical center of the instrument.
		3 (b) Define bright and dark line spectra and discuss their practical value.
III.	9.	3 (a) Upon what factors does the velocity of sound in any medium depend?
		3 (b) What causes influence the intensity of sound when transmitted through air?
		3 (c) Explain refraction of sound and give causes for same.
IV.	10.	Two trains approach each other, one going at the rate of 60 miles an hour with its whistle sounding. The other, upon which is an observer, is running at 30 miles an hour. What is the observed frequency before and after passing if the frequency of the whistle is 200 and the velocity of sound in air=1,125 ft.-sec.?

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)



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No.	Value.	
V.	9. 4 (a)	Define the ampere, volt, ohm, and watt.
	5 (b)	Find the resistance of a conductor 100 cm. long, 0.002 sq. cm. in cross section, whose specific resistance=30 by 10^{-6} per cubic cm.
VI.	10.	A battery of fifty cells is connected 10 cells in series and 5 in parallel. Internal e. m. f. of each cell=2 volts. Internal resistance of each cell=0.01 ohm. The terminals of this battery are connected across two resistances in parallel of 10 and 25 ohms. Find currents in all branches.
VII.	9. 3 (a)	Define specific heat, latent heat of fusion, latent heat of vaporization, and coefficient of expansion.
	6 (b)	Two mercurial thermometers are constructed of the same glass. The internal diameter of one of the bulbs=7.5 mm. and of its tube 2.5 mm. The bulb of the other is 6.2 mm. in diameter, and its tube is 1.5 mm. What is the ratio of the length of a degree of the first thermometer to a degree of the second?
VIII.	17. 12 (a)	A diving bell has an inside diameter of 10 feet and height of 10 feet. If the bell is lowered into the water when the temperature of the air=70° F. and atmospheric pressure=14.7 lbs. per sq. inch, how far below the surface can the bottom of the bell be lowered if the temperature of the water=40° F. and the water is not to rise more than 4 feet from the bottom of the bell? Assume weight 1 cu. ft. water=62.5 lbs.
	2 (b)	Explain what is meant by hygrometric state of the atmosphere.
	3 (c)	Name and explain three ways in which heat may be transmitted from one point to another.
IX.	11.	After 10 kilograms of ice at —10° C. had been placed in 100 kg. of water at a temperature of 40° C., 3 kg. of dry and saturated steam at atmospheric pressure was condensed in the water. Find the resulting temperature if specific heat of ice=0.504, latent heat of ice=80 gramme-calories, specific heat of water=1.0, latent heat of steam=536 gramme-calories, and temperature of steam=100° C.

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Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

CHEMISTRY, GEOLOGY AND MINERALOGY.

[Time, 3 hours.]

NOTE.—For atomic weights see end of questions.

No.	Value.	
I.	8.	2 (a) State clearly what is meant by the "equivalent weight" of an element.
		3 (b) Write the formulæ for nitric acid, sulphuric acid, hydrochloric acid, sulphydric acid, and carbonic acid.
		3 (c) Indicate the equivalent weight of the acid radical in each case.
II.	8.	2 (a) What is meant by the atomic weight of an element?
		2 (b) Define the term "valence."
		4 (c) What is the normal valence of each of the following elements: H, Cl, K, Ba, Fe, Na, C, Pb, N, Zn, O, Ag, S, Hg.
III.	8.	5 (a) In 18.2 parts by weight of a gaseous compound there are 15.6 parts of C and 2.6 parts of H. What is the empirical formula of the compound?
		3 (b) The specific gravity of the compound referred to (hydrogen) is 14. Find the molecular weight and molecular formula.
IV.	6.	3 (a) $5CH_4+4C_2H_2$ represents a mixture of gases. What is the specific gravity of the mixture referred to hydrogen?
		3 (b) Give reaction equation for the complete combustion of the mixture in air ($4N_2+O_2$).
V.	10.	5 (a) Describe the reduction of iron ore in the ordinary blast furnace giving the main reaction equation.
		1 (b) What is the most effective reducing agent in the operation?
		4 (c) Give the three chemical properties which apply to all metals.
VI.	8.	4 (a) Define a geyser and describe briefly the principles involved in its operation.
		4 (b) What is an artesian well?

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

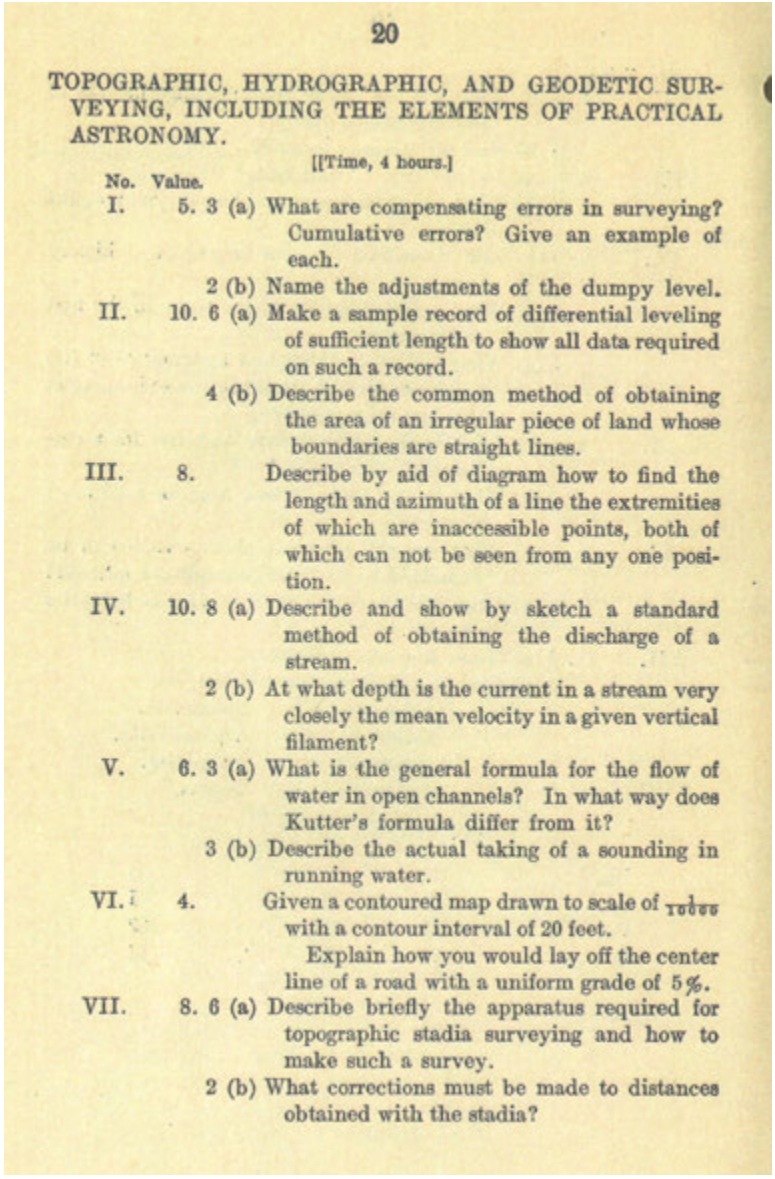
No.	Value.		
VII.	8.	4 (a)	What are the conditions affecting the rate of movement of a glacier?
		4 (b)	How are icebergs formed?
VIII.	8.	5 (a)	Define "dip," "anticline," "fault."
		3 (b)	What is slaty cleavage and how do you account for it?
IX.	9.	3 (a)	Into what five (5) eras is geological history divided?
		3 (b)	What is the character of the rocks in the first or oldest era?
		3 (c)	What era worked the first appearance of life on the earth and what are the evidences of this first appearance?
X.	8.	4 (a)	What is the characteristic wet test for a carbonate? For copper?
		4 (b)	What is the characteristic test for a nitrate? For lead?
XI.	6.	3 (a)	What are the physical characteristics to be examined in the determination of a mineral?
		3 (b)	Give the physical characteristics of hematite (Fe_2O_3).
XII.	13.	6 (a)	Name five ores of copper.
		7 (b)	Give the chemical formula for:

Graphite.	Sphalerite.
Galena.	Arsenopyrite.
Zincite.	Magnetite.
Dolomite.	Quartz.

ATOMIC WEIGHTS.

Na.....	23	Cl.....	35
C.....	12	H.....	1
Cu.....	63	S.....	32
O.....	16	N.....	14

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)



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TOPOGRAPHIC, HYDROGRAPHIC, AND GEODETIC SURVEYING, INCLUDING THE ELEMENTS OF PRACTICAL ASTRONOMY.

[Time, 4 hours.]

No.	Value.	
I.	5.	3 (a) What are compensating errors in surveying? Cumulative errors? Give an example of each.
		2 (b) Name the adjustments of the dumpy level.
II.	10.	6 (a) Make a sample record of differential leveling of sufficient length to show all data required on such a record.
		4 (b) Describe the common method of obtaining the area of an irregular piece of land whose boundaries are straight lines.
III.	8.	Describe by aid of diagram how to find the length and azimuth of a line the extremities of which are inaccessible points, both of which can not be seen from any one position.
IV.	10.	8 (a) Describe and show by sketch a standard method of obtaining the discharge of a stream.
		2 (b) At what depth is the current in a stream very closely the mean velocity in a given vertical filament?
V.	6.	3 (a) What is the general formula for the flow of water in open channels? In what way does Kutter's formula differ from it?
		3 (b) Describe the actual taking of a sounding in running water.
VI.	4.	Given a contoured map drawn to scale of $\frac{1}{10000}$ with a contour interval of 20 feet. Explain how you would lay off the center line of a road with a uniform grade of 5%.
VII.	8.	6 (a) Describe briefly the apparatus required for topographic stadia surveying and how to make such a survey.
		2 (b) What corrections must be made to distances obtained with the stadia?

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No.	Value.	
VIII.	8. 6 (a)	Sketch three systems of lines for a primary triangulation system and state when and why each would be used.
	2 (b)	What corrections must be made to the measured length of a base line?
IX.	10. 6 (a)	How would you measure an angle of a primary triangulation with a repeating instrument?
	4 (b)	Adjust the following triangle inclosing an area of 205 square miles: Angle A, 53° 10′ 27.4″; angle B, 74° 36′ 14.8″; angle C, 52° 13′ 22.0″.
X.	7. 4 (a)	Two points, A and B, are 10 miles apart; A has an elevation of 400 feet and B 300 feet above a given datum. At a point 2½ miles from B there is a hill 320 feet high. How high above A does the line of sight from B pass?
	3 (b)	What will be the cheapest plan of making A and B intervisible so that each station could be occupied with a theodolite, neglecting height of theodolite above platform upon which it rests?
XI.	10.	State how, having an engineer's transit and an ordinary watch together with an ephemeris or nautical almanac, you could determine within a minute of arc the azimuth, time, and latitude of a place.
XII.	8. 6 (a)	What are the relations between siderial time, mean solar time, and true solar time?
	2 (b)	What class of stars is best adapted for the determination of time; for the determination of latitude?
XIII.	6.	Describe two practical methods of determining longitude, and state which is preferable and why.

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

DESCRIPTIVE GEOMETRY AND DRAWING.

[Time, 3 hours.]

INSTRUCTIONS FOR SOLUTION OF DESCRIPTIVE GEOMETRY PROBLEMS.

(a) Draw all visible projections in full lines and invisible in broken lines.

(b) Draw visible traces of all planes in full lines and invisible with broken and dotted lines.

(c) Use dotted lines for projecting lines and points.

(d) Use different length dash for all auxiliary construction lines and traces of auxiliary places.

No.	Value.	
I.	20.	AB is the horizontal projection of the lower edge of a cube resting upon the plane XYZ. Find the vertical and horizontal projections of its base and of one edge perpendicular to base.

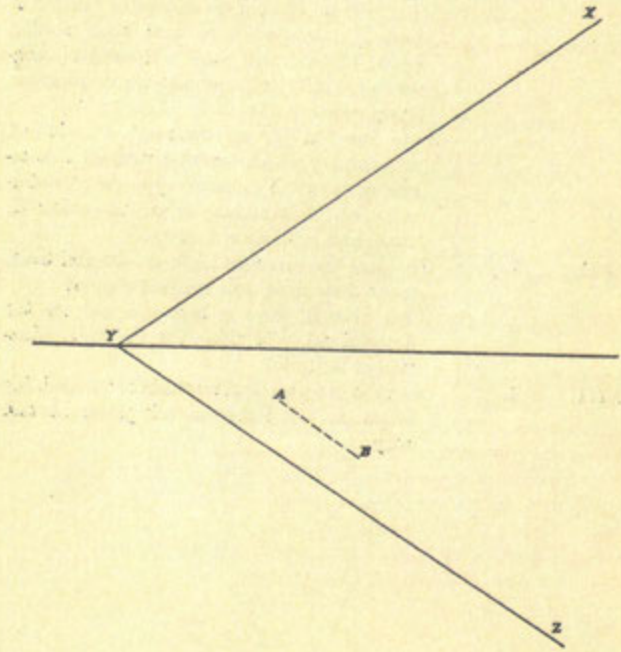


Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No. Value.

II. 25. The section of a prism cut out by the V plane is a hexagon with its center at C. The right line MN is an edge of this prism. Pass a plane through the point D perpendicular to MN and find the horizontal and vertical projections of the section cut from the prism by this plane.

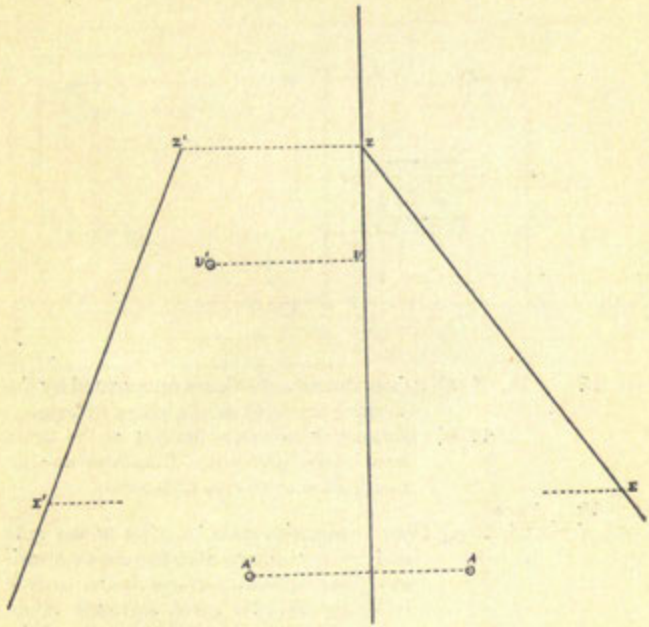
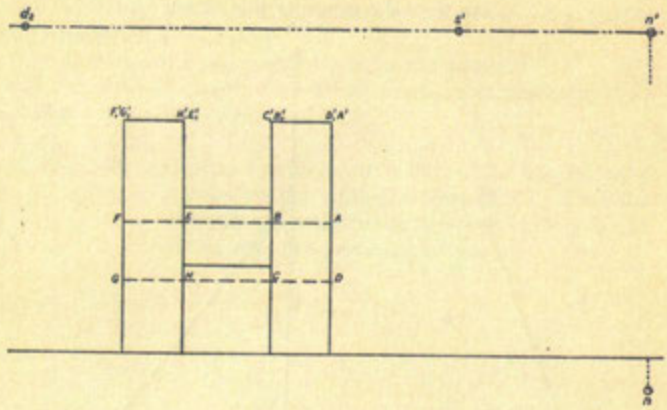


Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No. Weight.

III. 15. Construct the perspective of the letter H, whose orthographic projections are given. Also find its shade and the perspective of the shadow on the horizontal plane and upon itself.



IV. 15. 3 (a) Briefly describe the figure represented by the working drawings on the following page.

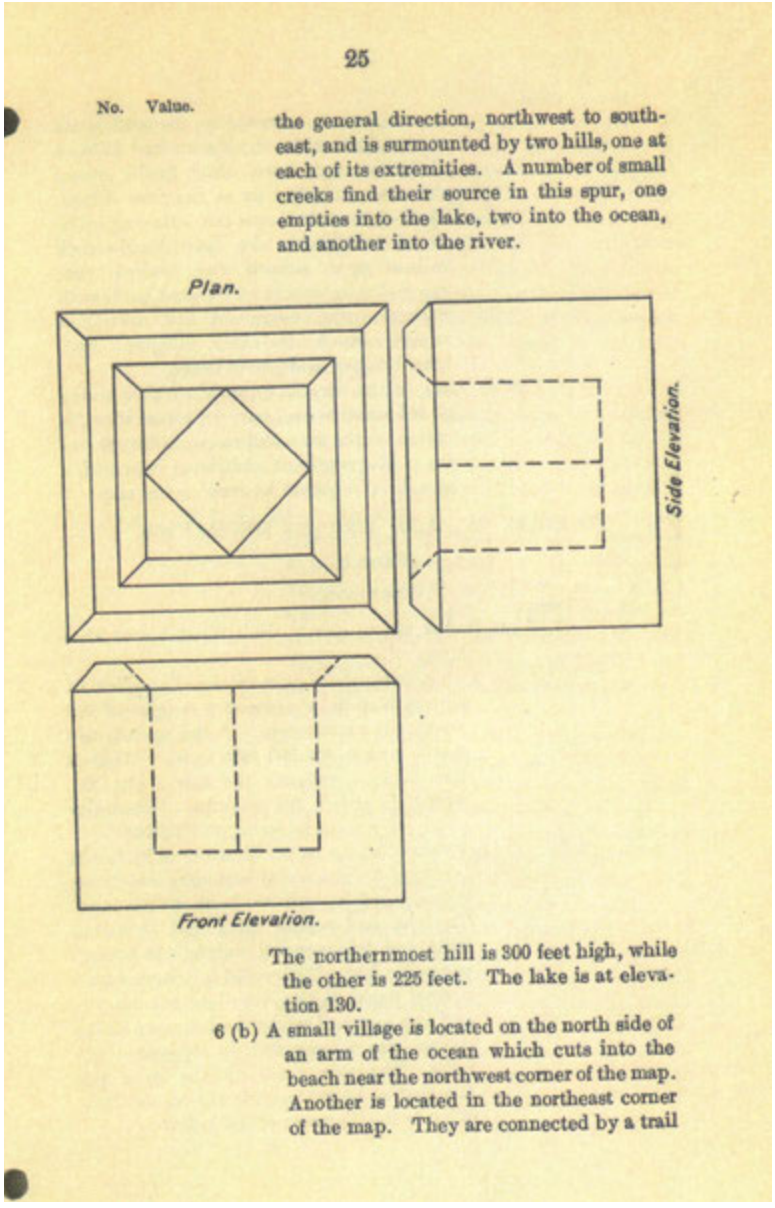
12 (b) Construct an isometric drawing of the figure from these drawings. Distances on isometric axes to be true distances.

No. Value.

V. 25. 15 (a) Draw a map with scale 2 inches to the mile and contour interval of 25 feet showing various topographical features in an area 3 miles square. No great accuracy is required, but the map should be neat and the features must be shown as described.

Show near the northeast corner of this area an elongated lake about 1 mile long and one-quarter mile wide. A river serves as an outlet for this lake and curves around the foot of a spur, flowing through a small salt-water marsh into the ocean. The beach of the latter is approximately parallel to the western edge of the map. The spur runs in

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)



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No. Value.

the general direction, northwest to southeast, and is surmounted by two hills, one at each of its extremities. A number of small creeks find their source in this spur, one empties into the lake, two into the ocean, and another into the river.

Plan.

Side Elevation.

Front Elevation.

The northernmost hill is 300 feet high, while the other is 225 feet. The lake is at elevation 130.

6 (b) A small village is located on the north side of an arm of the ocean which cuts into the beach near the northwest corner of the map. Another is located in the northeast corner of the map. They are connected by a trail

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No.	Value.	
		across the spur, a road along the north shore of the river, and a double-tracked railroad along the south shore, which finally crosses the river and runs up to the first village. Besides these indicate the following additional features on the map: Single-track railroad spur, smooth wire, barbed wire, rail and stone fences, cultivated lands with various crops, evergreen and deciduous woods, church, cemetery, telegraph line, truss bridges, and gravel beach.
	4	(c) Place on the map an appropriate title giving all information necessary for future identification on the map and responsibility therefor. Also give such additional information as will be required for reading the map.

THEORETICAL AND APPLIED MECHANICS.

PART 1.

[Time, 3 hours.]

No.	Value.	
I.	7. 3	(a) Define stress; elastic limit; modulus of elasticity.
	4	(b) A steel wire whose cross-sectional area is 0.01 square inch is to support a weight of 200 pounds as a pendulum. It has upon it two marks which are 200 feet apart. What is the distance between the marks after the weight is added, the modulus of elasticity of the wire material being 30,000,000?
II.	8.	A flywheel whose mean diameter is 24 feet is built up of four equal segments which are bolted together with two bolts at each joint. The rim is 4 inches thick and 18 inches wide and the material weighs 490 pounds per cubic foot. The wheel is designed for a normal speed of 75 revolutions per minute, and as a factor of safety the influence of the spokes was disregarded in designing the bolts. The safe stress on the bolts was assumed as 14,000 pounds per square inch. What is the diameter of the bolts?

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No.	Value.	
III.	11.	6 (a) The coefficient of expansion for steel is 0.0000030; that for brass is 0.0000065. A steel column whose cross-sectional area is 5 square inches is 50 feet long and is surmounted by a rigid crosspiece from the bottom side of each end of which hangs a brass rod whose cross-sectional area is 2 square inches. Compute the length of the rods so that, regardless of temperature changes, their lower ends shall remain at the same elevation.
		5 (b) If the rods are assumed to be 35 feet long and have their lower ends immovably fixed, what total stress will be induced in the anchorage by a fall in temperature of 150°? Modulus of elasticity of brass is 10,000,000.
IV.	13.	7 (a) Given the following beam without weight: Starting from the left-hand side there is a cantilever 5 feet long to the support A. This cantilever is loaded uniformly with 1 ton per foot of length. From the support A to the support B the distance is 20 feet. Beyond B there is another cantilever 9 feet long loaded with a concentrated load of 2 tons at its outer end. Determine the amount and position of a concentrated load such that the beam may be cut through beneath it without disturbing the equilibrium of the system.
		6 (b) Construct the shear and moment diagrams of the above beam with the unknown load added. Shear scale, $\frac{1}{4}$ inch per ton; bending moment scale, $\frac{1}{8}$ inch per ton-foot.
V.	11.	6 (a) A bar of steel whose modulus of elasticity is 30,000,000 is placed in a testing machine and subjected to tension. The cross-sectional area of the bar is 4 square inches, its length is 20 feet, and its elastic limit of 60,000 pounds per square inch is reached in 15 seconds. What horsepower must be supplied

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No.	Value	
		the driving motor, assuming its efficiency to be 85 per cent and that there is 10 per cent loss of power in the testing machine?
		5 (b) If the machine is provided with suitable reducing gears and with an automatic clutch designed to slip when the pull on the motor pinion (2 inches in pitch diameter) exceeds 40 pounds, what must be the least speed of the motor at its maximum delivery during the above test?

PART 2.

[Time, 3 hour.]

VI.	10.	3 (a) In making compression tests of cast-iron columns 15 feet long and 48 square inches in cross-sectional area the elastic limit of the material was reached at a unit pressure of 15,000 pounds per square inch, the material having a modulus of elasticity of 15,000,000. Determine the resilience of the columns.
		3 (b) Determine the modulus of resilience of the material.
		4 (c) What load, falling from a height of 4 feet above the column will also strain the column to its elastic limit?
VII.	7.	A shaft in two parts is coupled with a coupling having in it 8 bolts, the bolt circle diameter being 18 inches. The shaft transmits 1,000 horsepower at 500 revolutions per minute. If the safe load on the bolt material is 6,000 pounds per square inch, what is the diameter of the bolts?
VIII.	8.	4 (a) Find the thickness of a spherical shell 6 feet in diameter which is used as a receiver for compressed air at a pressure of 240 pounds per square inch above the atmosphere, the allowable unit stress of the material being 8,000 pounds per square inch.
		4 (b) How great may be the diameter of the copper delivery pipe whose walls are $\frac{1}{32}$ inch thick and whose safe load is 3,000 pounds per square inch?

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No.	Value.	
IX.	13. 5	(a) An open caisson 50 feet long and 10 feet wide (inside dimensions) has been sunk in still water which has risen to a height of 36 feet above the bottom of the caisson. The sides and ends simply rest on the bottom and the sides are supported by the ends. The ends are protected against collapse by longitudinal braces. Two cross members are placed across the ends with their centers at heights of 5 feet and 24 feet, respectively, above the bottom. Against these butt the longitudinals, being centered vertically on the cross members, but horizontally their centers are 1 foot in from the sides; they are 8 inches by 8 inches in cross section, and there are four of these longitudinals in all. Neglecting friction, what is the unit pressure on the ends of the longitudinals?
	4	(b) The pier within the caisson weighs 165 pounds per cubic foot and is 45 feet long and 5 feet wide, and at the present stage of water it just prevents movement of the caisson. The caisson itself is neutral as to buoyancy. How high is the pier?
	4	(c) As a matter of safety the caisson is allowed to flood to a depth of 25 feet. At what stage of the water will the previous condition of instability obtain?
X.	12. 6	(a) A dam having a vertical face on the reservoir side is 175 feet high and the water behind it stands at 160 feet. At a depth of 150 feet below the crest is the top of the rectangular opening delivering water to the penstock supplying a turbine. The opening is 4 feet wide and 8 feet high and is closed by a sliding valve, the valve being operated by a vertical rod from above. The penstock has a cross-sectional area equal to that of the opening, and the water flowing through it supplies a turbine which is direct connected to an electric generator; the efficiency of the turbine is 75 per cent and that of the gener-

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No. Value.

ator is 92 per cent. What must be the size of the valve rod when safely loaded to 16,000 pounds per square inch, the coefficient of friction of the gate under pressure being 0.3?

6 (b) If the velocity of flow in the pipe is 47 feet per second, what kilowatt energy is being delivered by the generator?

THEORY AND PRACTICE OF ENGINEERING.

PART I.

[Time, 3½ hours.]

No. Value.

I. 6. A double-covered tension butt joint unites two 8 by ⅝ inch plates. Each fishplate is 8 by ⅝ inch. Eleven ¾-inch rivets unite each tension and fishplate; they are arranged in five rows, which form the middle of the joint, containing respectively 2, 3, 3, 2, and 1 rivets. What is the maximum stress which can be safely transmitted through the joint? Factor of safety 4.

Ultimate crushing strength.....	48,000
Ultimate tensile strength.....	60,000
Ultimate shearing strength.....	24,000

The area of cross section of a ¾-inch rivet is 0.44 square inch.

II. 6. Given a Howe truss with eight panels loaded with a dead weight (W) at each panel point on the lower chord. Each panel is 8 feet high and 6 feet wide. The maximum live load is 8W, which in moving across is considered as applied in succession at the lower chord panel points. Where are counter braces required and why? Give the amount and kind (tension or compression) of the maximum total stress on any counter brace. Same for any direct brace as the live load moves across.

III. 3. What general conditions must the profile of a fixed gravity dam (not overflow) fulfill to make it safe?

IV. 2. How should the foundation bed in a river be examined before building a concrete dam? Give a general discussion of the methods.

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No. Value.

V. 6. Give the two common types of reinforced concrete retaining wall. Make two sketches showing a design for each type of retaining wall holding a 20-foot vertical earth embankment. (The dimensions need not be computed nor need the number or sizes of the reinforcing rods which should consist only of twisted steel rods.) The reinforcement should be placed, however, to show that the candidate understands the nature and location of the stresses to be provided against by the reinforcement. Reinforcement should not be used for compression.

VI. 6. Describe the construction of a modern slow sand filtration bed and make a sketch showing the cross section of same. Explain how to operate it and give the theory of filtration with a statement of the results obtained.

VII. 8. Determine graphically the stresses in all parts of the roof truss shown in figure 1, loaded as indicated.

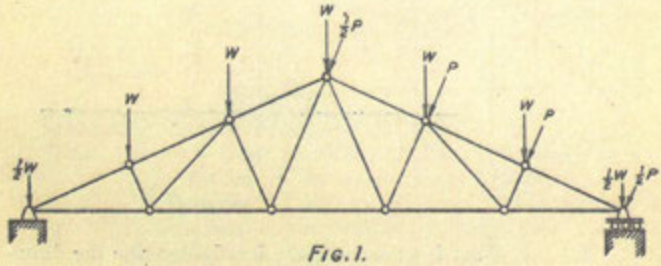

FIG. 1.

The left end of the truss is fixed and the right end is mounted on rollers:

W=2,000 pounds.

P=2,000 pounds.

Scale to be used in solution: 4,000 pounds=1 inch.

Also indicate for each member of the truss the character of stress brought upon it (i. e., whether it is tension or compression).

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No. Value.

VIII. 7. Give the theory of the design of the flanges of a built-up plate girder. How is the length of the different cover plates determined? How are the number and size of the rivets used in fastening cover plate to flange angles determined? Those fastening flange angles to the web of girder?

IX. 4. Given the boom derrick in figure 2, with a load of 1 ton suspended from the end of boom as shown. What is the direction and intensity of the reaction at D? Graphical or analytical solution accepted.

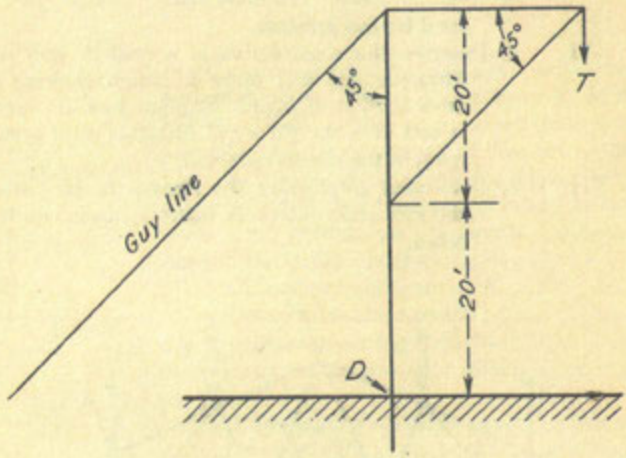

FIG. 2.

X. 2. What is a drawbridge? Briefly describe the different classes with reference to their method of operation.

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

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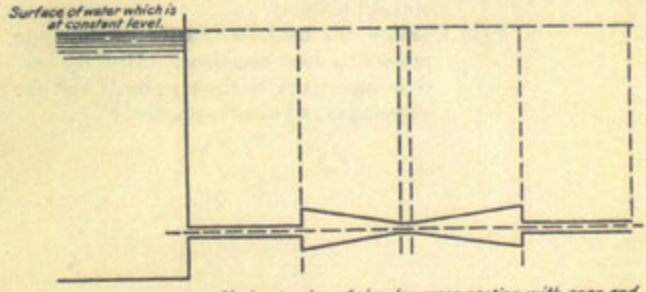
PART II.

[Time, 3½ hours.]

No. Value.

XI. 5. In figure 3 draw the piezometric line from the surface of the water to the free end of the pipe. Also draw a line representing the pressure and velocity head so that the difference between the two lines represents the velocity head. The values of the line need not be computed. It is desired to find out from solution whether the candidate knows the effect of the system shown on the original pressure or head in the reservoir; and what form this pressure is at any point, and how it is lost.



Discharge pipe of circular cross section with open end.

FIG. 3.

XII. 4. Give three methods used for determining the proportions of the ingredients of a concrete.

XIII. 6. Describe the pneumatic caisson and its method of operation for building a bridge pier. Make a sketch.

XIV. 6. Describe the septic tank, the treatment of sewage before entering, its action therein, and the results obtained.

XV. 8. Describe the behavior of a specimen of steel under a tensile stress gradually increased until rupture takes place. For such a process draw the characteristic curve showing the relation between applied force and elongation produced. Mark the various important points along this curve and explain their significance.

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

No.	Value.	
XVI.	4.	How is steel tempered? How annealed? Distinguish clearly between the two processes and give the purposes of each.
XVII.	4.	2 (a) Give the chemical composition of quick lime; of slaked lime; of lime that has set.
		2 (b) Why is it that Portland cement will set under water, while ordinary lime will not do so?
XVIII.	6.	Describe the apparatus employed and give standard methods of making each of the following tests of Portland cement: Fineness, specific gravity, tensile strength, time of setting.
XIX.	7.	3 (a) Describe the process of decay in wood, giving causes and the conditions favoring and opposed to decay.
		4 (b) Describe the methods usually employed in preserving wood from decay. Give the relative importance of these methods and the advantages and disadvantages of each.

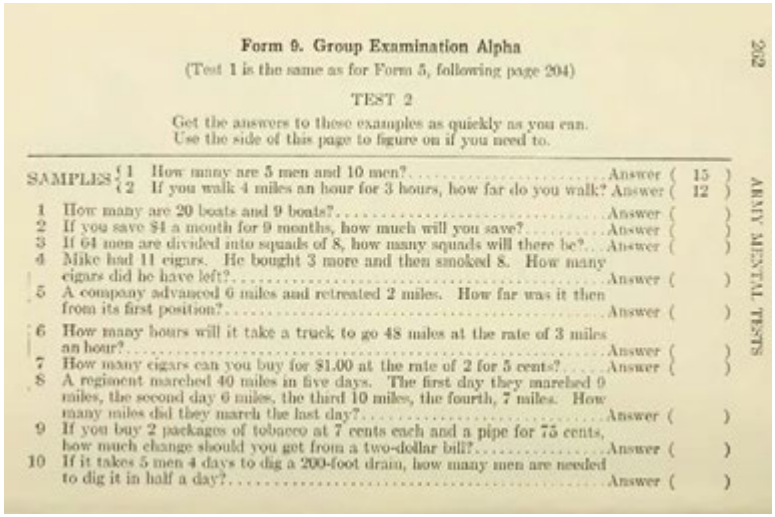
○

Figure B-1. Reproduction of the Pamphlet *Questions Used in the Competitive Examination Held in May, 1914.* (cont.)

ENDNOTES – APPENDIX B

1. U.S. War Office, *Questions Used in the Competitive Examination Held in May, 1914: For the Purpose of Determining the Mental Qualifications of Candidates for Appointment as Probational Second Lieutenants in the Corps of Engineers*, Washington, DC: U.S. Government Printing Office, 1914. pp. 1-34, (blank p. 2 omitted).

APPENDIX C



Form 9. Group Examination Alpha

(Test 1 is the same as for Form 5, following page 204)

TEST 2

Get the answers to these examples as quickly as you can.
Use the side of this page to figure on if you need to.

SAMPLES { 1 How many are 5 men and 10 men? ... Answer (15)
{ 2 If you walk 4 miles an hour for 3 hours, how far do you walk? Answer (12)

1 How many are 20 boats and 9 boats? ... Answer ( )
2 If you save $4 a month for 9 months, how much will you save? ... Answer ( )
3 If 64 men are divided into squads of 8, how many squads will there be? ... Answer ( )
4 Mike had 11 cigars. He bought 3 more and then smoked 8. How many cigars did he have left? ... Answer ( )
5 A company advanced 6 miles and retreated 2 miles. How far was it then from its first position? ... Answer ( )
6 How many hours will it take a truck to go 48 miles at the rate of 3 miles an hour? ... Answer ( )
7 How many cigars can you buy for $1.00 at the rate of 2 for 5 cents? ... Answer ( )
8 A regiment marched 40 miles in five days. The first day they marched 9 miles, the second day 6 miles, the third 10 miles, the fourth, 7 miles. How many miles did they march the last day? ... Answer ( )
9 If you buy 2 packages of tobacco at 7 cents each and a pipe for 75 cents, how much change should you get from a two-dollar bill? ... Answer ( )
10 If it takes 5 men 4 days to dig a 200-foot drain, how many men are needed to dig it in half a day? ... Answer ( )

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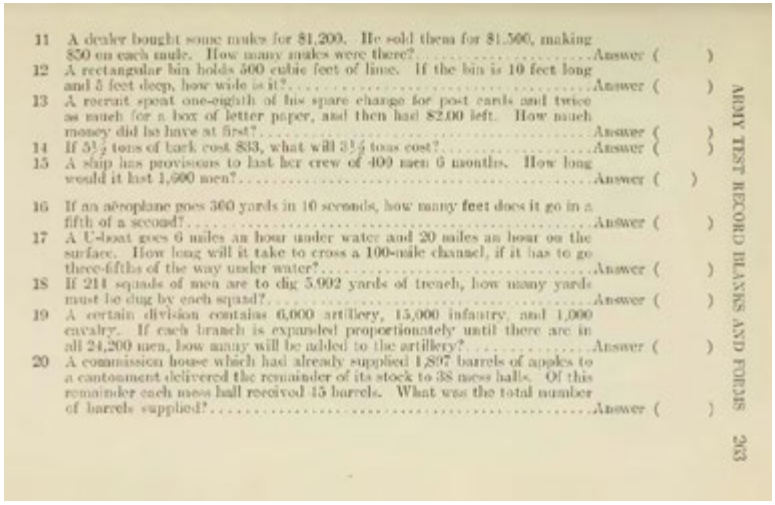

11 A dealer bought some mules for $1,200. He sold them for $1,500, making $50 on each mule. How many mules were there? ... Answer ( )
12 A rectangular bin holds 500 cubic feet of lime. If the bin is 10 feet long and 5 feet deep, how wide is it? ... Answer ( )
13 A recruit spent one-eighth of his spare change for post cards and twice as much for a box of letter paper, and then had $2.00 left. How much money did he have at first? ... Answer ( )
14 If 5½ tons of bark cost $33, what will 3½ tons cost? ... Answer ( )
15 A ship has provisions to last her crew of 400 men 6 months. How long would it last 1,600 men? ... Answer ( )
16 If an aëroplane goes 360 yards in 10 seconds, how many feet does it go in a fifth of a second? ... Answer ( )
17 A U-boat goes 6 miles an hour under water and 20 miles an hour on the surface. How long will it take to cross a 100-mile channel, if it has to go three-fifths of the way under water? ... Answer ( )
18 If 214 squads of men are to dig 5,992 yards of trench, how many yards must be dug by each squad? ... Answer ( )
19 A certain division contains 6,000 artillery, 15,000 infantry, and 1,000 cavalry. If each branch is expanded proportionately until there are in all 24,200 men, how many will be added to the artillery? ... Answer ( )
20 A commission house which had already supplied 1,897 barrels of apples to a cantonment delivered the remainder of its stock to 38 mess halls. Of this remainder each mess hall received 15 barrels. What was the total number of barrels supplied? ... Answer ( )

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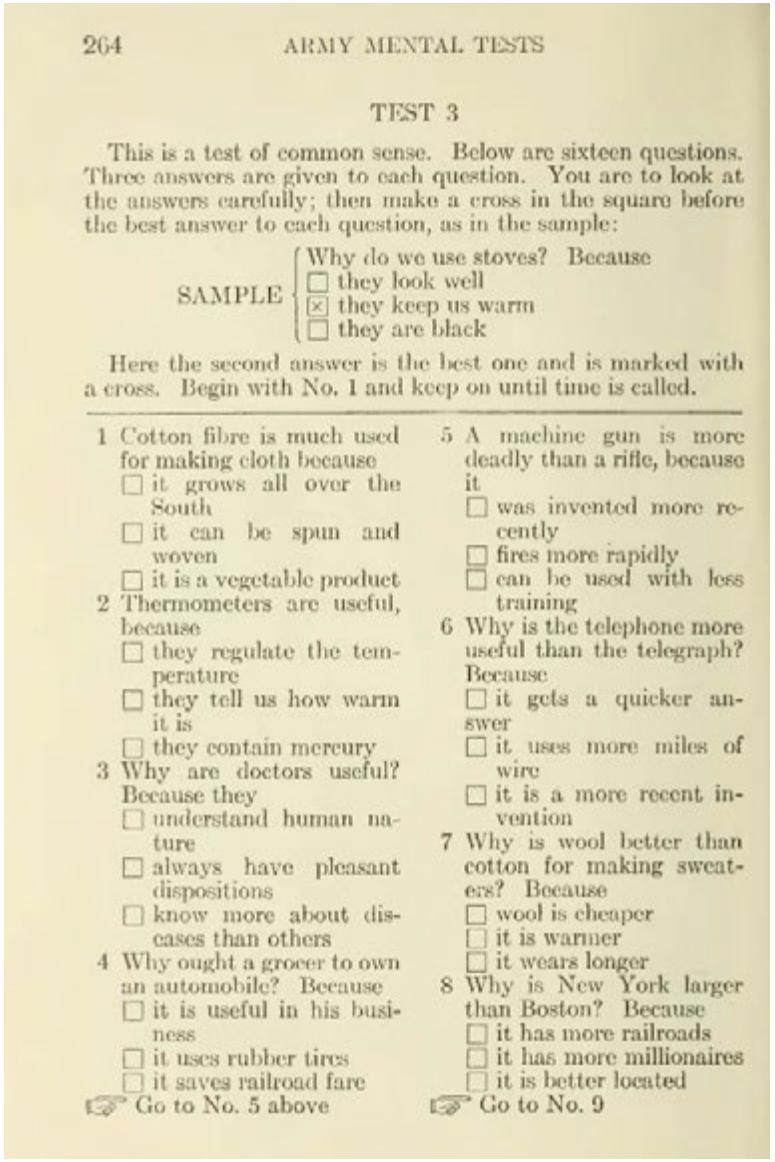
Figure C-1. Army Group Examination Alpha: Test 2.[1]



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TEST 3

This is a test of common sense. Below are sixteen questions. Three answers are given to each question. You are to look at the answers carefully; then make a cross in the square before the best answer to each question, as in the sample:

SAMPLE
Why do we use stoves? Because
☐ they look well
☒ they keep us warm
☐ they are black

Here the second answer is the best one and is marked with a cross. Begin with No. 1 and keep on until time is called.

1 Cotton fibre is much used for making cloth because
☐ it grows all over the South
☐ it can be spun and woven
☐ it is a vegetable product

2 Thermometers are useful, because
☐ they regulate the temperature
☐ they tell us how warm it is
☐ they contain mercury

3 Why are doctors useful? Because they
☐ understand human nature
☐ always have pleasant dispositions
☐ know more about diseases than others

4 Why ought a grocer to own an automobile? Because
☐ it is useful in his business
☐ it uses rubber tires
☐ it saves railroad fare

☞ Go to No. 5 above

5 A machine gun is more deadly than a rifle, because it
☐ was invented more recently
☐ fires more rapidly
☐ can be used with less training

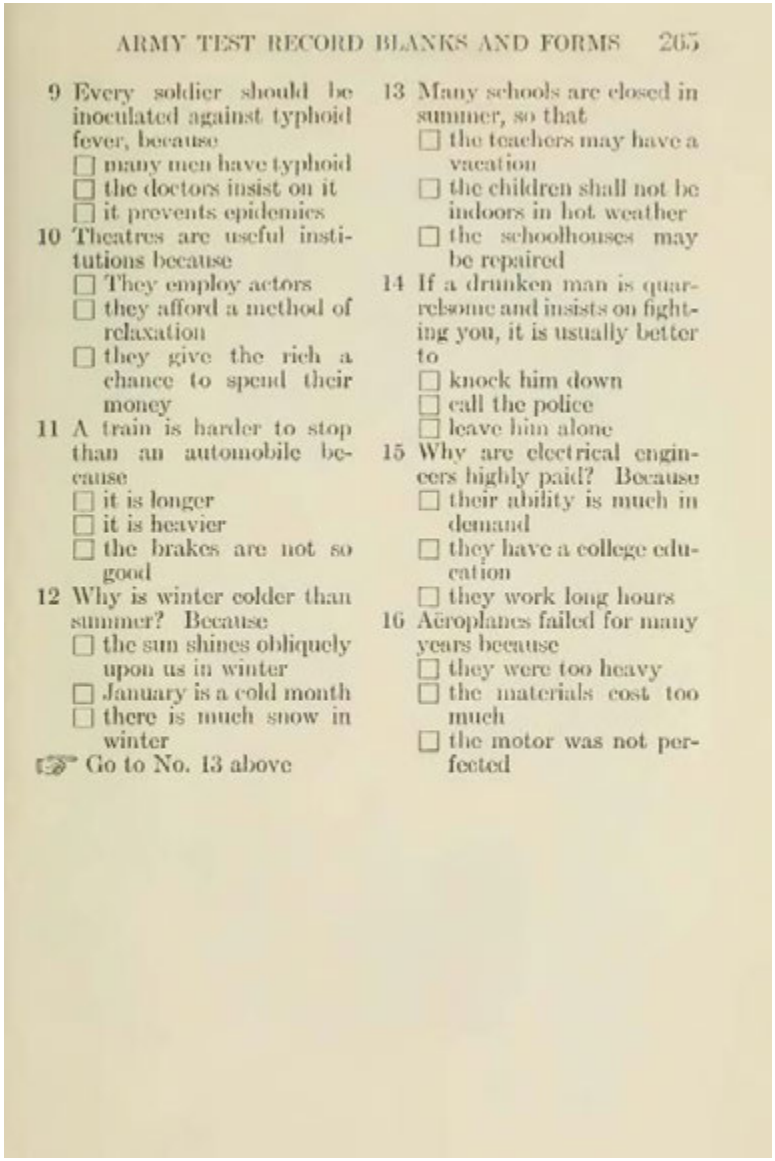
6 Why is the telephone more useful than the telegraph? Because
☐ it gets a quicker answer
☐ it uses more miles of wire
☐ it is a more recent invention

7 Why is wool better than cotton for making sweaters? Because
☐ wool is cheaper
☐ it is warmer
☐ it wears longer

8 Why is New York larger than Boston? Because
☐ it has more railroads
☐ it has more millionaires
☐ it is better located

☞ Go to No. 9

Figure C-2. Army Group Examination Alpha: Test 3.[2]



ARMY TEST RECORD BLANKS AND FORMS 265

9 Every soldier should be inoculated against typhoid fever, because
- ☐ many men have typhoid
- ☐ the doctors insist on it
- ☐ it prevents epidemics

10 Theatres are useful institutions because
- ☐ They employ actors
- ☐ they afford a method of relaxation
- ☐ they give the rich a chance to spend their money

11 A train is harder to stop than an automobile because
- ☐ it is longer
- ☐ it is heavier
- ☐ the brakes are not so good

12 Why is winter colder than summer? Because
- ☐ the sun shines obliquely upon us in winter
- ☐ January is a cold month
- ☐ there is much snow in winter

☞ Go to No. 13 above

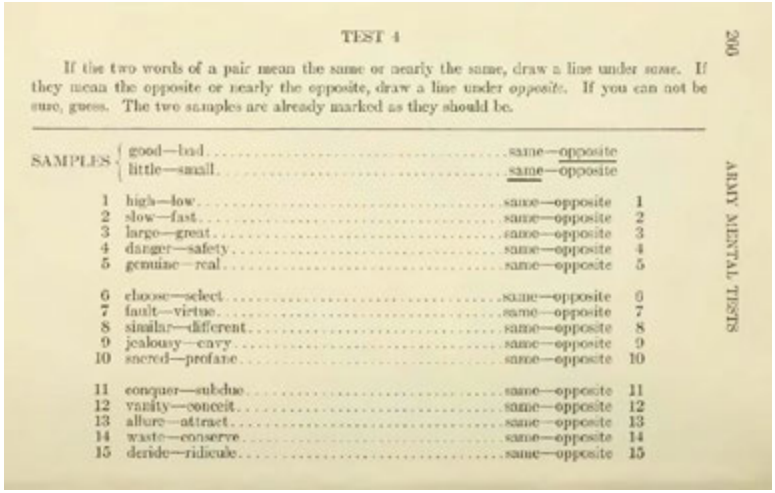
13 Many schools are closed in summer, so that
- ☐ the teachers may have a vacation
- ☐ the children shall not be indoors in hot weather
- ☐ the schoolhouses may be repaired

14 If a drunken man is quarrelsome and insists on fighting you, it is usually better to
- ☐ knock him down
- ☐ call the police
- ☐ leave him alone

15 Why are electrical engineers highly paid? Because
- ☐ their ability is much in demand
- ☐ they have a college education
- ☐ they work long hours

16 Aëroplanes failed for many years because
- ☐ they were too heavy
- ☐ the materials cost too much
- ☐ the motor was not perfected

Figure C-2. Army Group Examination Alpha: Test 3. (cont.)

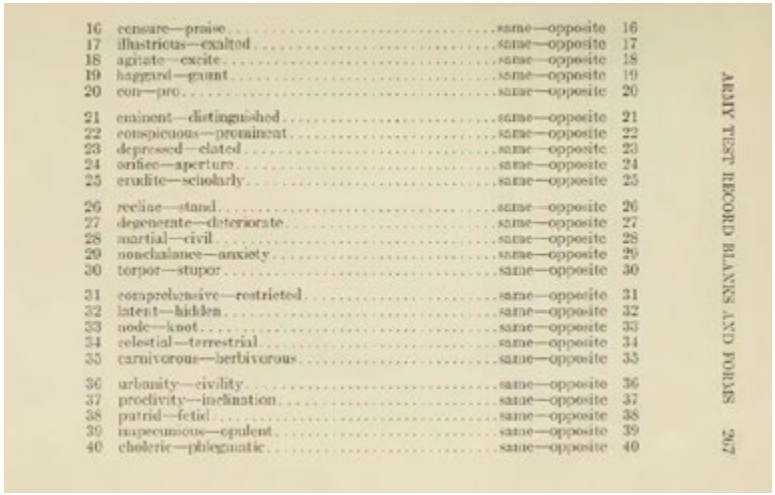


TEST 4

If the two words of a pair mean the same or nearly the same, draw a line under *same*. If they mean the opposite or nearly the opposite, draw a line under *opposite*. If you can not be sure, guess. The two samples are already marked as they should be.

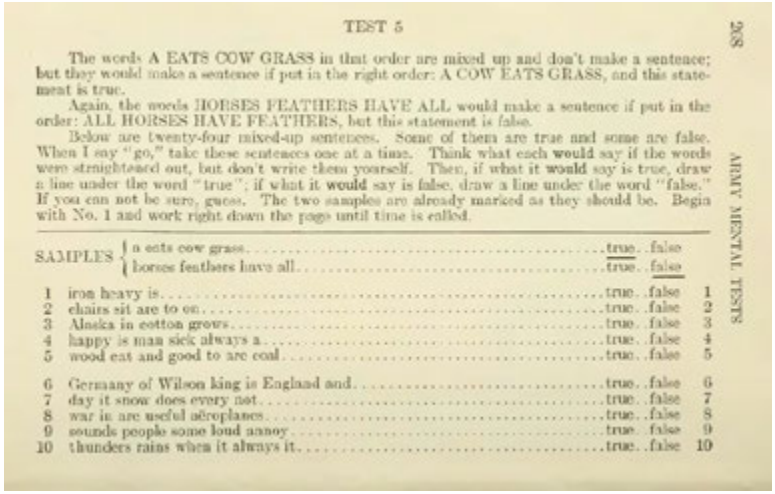
SAMPLES { good—bad ..... same—opposite
little—small ..... same—opposite

1	high—low	same—opposite	1
2	slow—fast	same—opposite	2
3	large—great	same—opposite	3
4	danger—safety	same—opposite	4
5	genuine—real	same—opposite	5
6	choose—select	same—opposite	6
7	fault—virtue	same—opposite	7
8	similar—different	same—opposite	8
9	jealousy—envy	same—opposite	9
10	sacred—profane	same—opposite	10
11	conquer—subdue	same—opposite	11
12	vanity—conceit	same—opposite	12
13	allure—attract	same—opposite	13
14	waste—conserve	same—opposite	14
15	deride—ridicule	same—opposite	15



16	censure—praise	same—opposite	16
17	illustrious—exalted	same—opposite	17
18	agitate—excite	same—opposite	18
19	haggard—gaunt	same—opposite	19
20	con—pro	same—opposite	20
21	eminent—distinguished	same—opposite	21
22	conspicuous—prominent	same—opposite	22
23	depressed—elated	same—opposite	23
24	orifice—aperture	same—opposite	24
25	erudite—scholarly	same—opposite	25
26	recline—stand	same—opposite	26
27	degenerate—deteriorate	same—opposite	27
28	martial—civil	same—opposite	28
29	nonchalance—anxiety	same—opposite	29
30	torpor—stupor	same—opposite	30
31	comprehensive—restricted	same—opposite	31
32	latent—hidden	same—opposite	32
33	node—knot	same—opposite	33
34	celestial—terrestrial	same—opposite	34
35	carnivorous—herbivorous	same—opposite	35
36	urbanity—civility	same—opposite	36
37	proclivity—inclination	same—opposite	37
38	putrid—fetid	same—opposite	38
39	impecunious—opulent	same—opposite	39
40	choleric—phlegmatic	same—opposite	40

Figure C-3. Army Group Examination Alpha: Test 4.[3]



TEST 5

The words A EATS COW GRASS in that order are mixed up and don't make a sentence; but they would make a sentence if put in the right order: A COW EATS GRASS, and this statement is true.

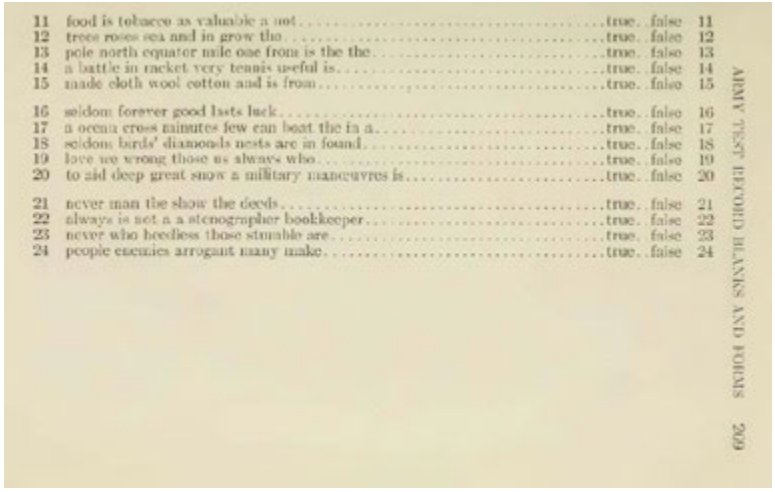
Again, the words HORSES FEATHERS HAVE ALL would make a sentence if put in the order: ALL HORSES HAVE FEATHERS, but this statement is false.

Below are twenty-four mixed-up sentences. Some of them are true and some are false. When I say "go," take these sentences one at a time. Think what each **would** say if the words were straightened out, but don't write them yourself. Then, if what it **would** say is true, draw a line under the word "true"; if what it **would** say is false, draw a line under the word "false." If you can not be sure, guess. The two samples are already marked as they should be. Begin with No. 1 and work right down the page until time is called.

SAMPLES
a eats cow grass ..... true .. false
horses feathers have all ..... true .. false

1 iron heavy is ..... true .. false 1
2 chairs sit are to on ..... true .. false 2
3 Alaska in cotton grows ..... true .. false 3
4 happy is man sick always a ..... true .. false 4
5 wood eat and good to are coal ..... true .. false 5

6 Germany of Wilson king is England and ..... true .. false 6
7 day it snow does every not ..... true .. false 7
8 war in are useful aëroplanes ..... true .. false 8
9 sounds people some loud annoy ..... true .. false 9
10 thunders rains when it always it ..... true .. false 10

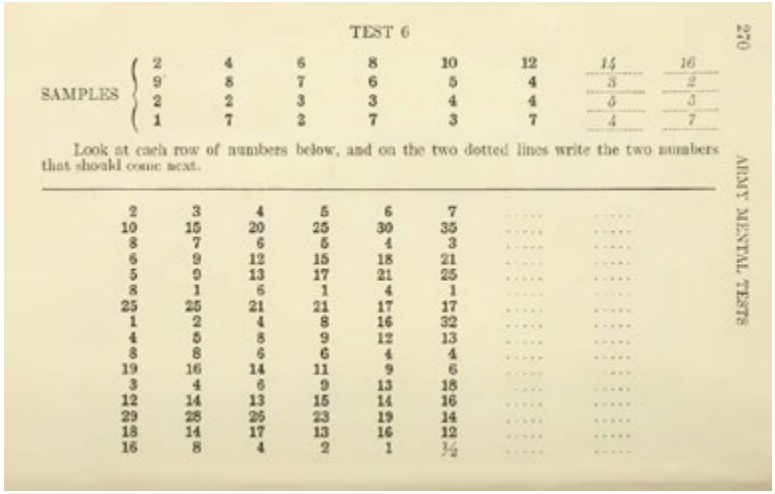


11 food is tobacco as valuable a not ..... true .. false 11
12 trees roses sea and in grow the ..... true .. false 12
13 pole north equator mile one from is the the ..... true .. false 13
14 a battle in racket very tennis useful is ..... true .. false 14
15 made cloth wool cotton and is from ..... true .. false 15

16 seldom forever good lasts luck ..... true .. false 16
17 a ocean cross minutes few can boat the in a ..... true .. false 17
18 seldom birds' diamonds nests are in found ..... true .. false 18
19 love we wrong those us always who ..... true .. false 19
20 to aid deep great snow a military manœuvres is ..... true .. false 20

21 never man the show the deeds ..... true .. false 21
22 always is not a a stenographer bookkeeper ..... true .. false 22
23 never who heedless those stumble are ..... true .. false 23
24 people enemies arrogant many make ..... true .. false 24

Figure C-4. Army Group Examination Alpha: Test 5.[4]



TEST 6

SAMPLES	2	4	6	8	10	12	14	16
	9	8	7	6	5	4	3	2
	2	2	3	3	4	4	5	5
	1	7	2	7	3	7	4	7

Look at each row of numbers below, and on the two dotted lines write the two numbers that should come next.

2	3	4	5	6	7	.....	.....
10	15	20	25	30	35	.....	.....
8	7	6	5	4	3	.....	.....
6	9	12	15	18	21	.....	.....
5	9	13	17	21	25	.....	.....
8	1	6	1	4	1	.....	.....
25	25	21	21	17	17	.....	.....
1	2	4	8	16	32	.....	.....
4	5	8	9	12	13	.....	.....
8	8	6	6	4	4	.....	.....
19	16	14	11	9	6	.....	.....
3	4	6	9	13	18	.....	.....
12	14	13	15	14	16	.....	.....
29	28	26	23	19	14	.....	.....
18	14	17	13	16	12	.....	.....
16	8	4	2	1	½	.....	.....

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15	16	14	17	13	18	.....	.....
1	4	9	16	25	36	.....	.....
21	18	16	15	12	10	.....	.....
3	6	8	16	18	36	.....	.....

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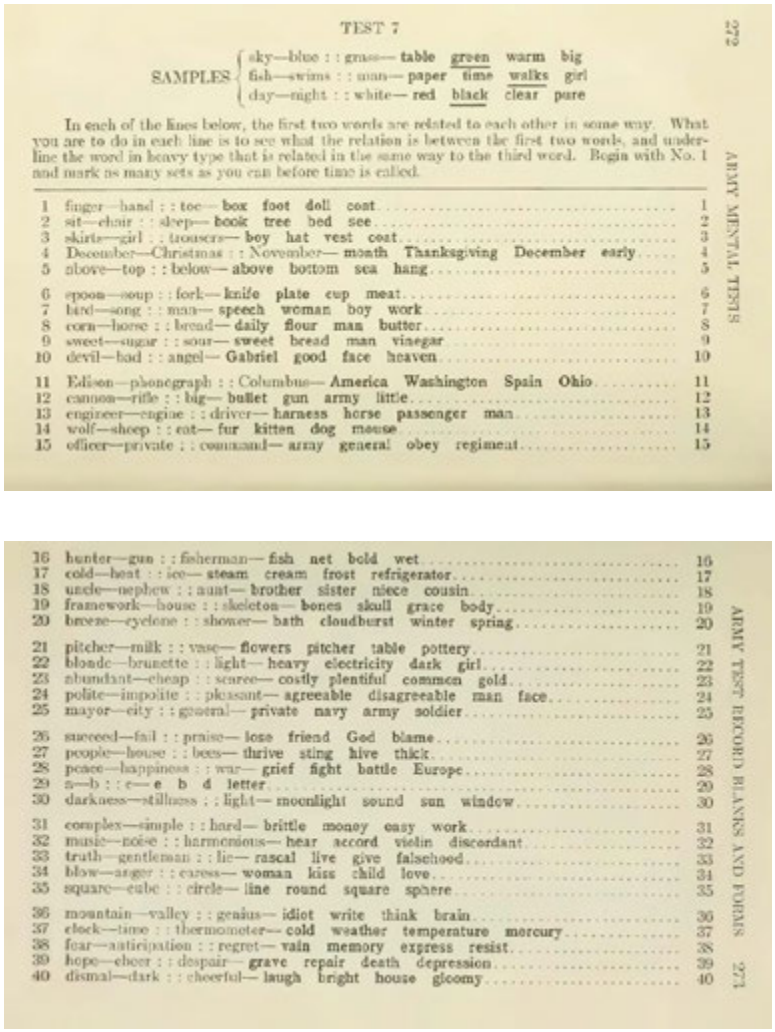
Figure C-5. Army Group Examination Alpha: Test 6.[5]



TEST 7

272

SAMPLES { sky—blue : : grass— table green warm big
fish—swims : : man— paper time walks girl
day—night : : white— red black clear pure

In each of the lines below, the first two words are related to each other in some way. What you are to do in each line is to see what the relation is between the first two words, and underline the word in heavy type that is related in the same way to the third word. Begin with No. 1 and mark as many sets as you can before time is called.

ARMY MENTAL TESTS

1	finger—hand : : toe— box foot doll coat	1
2	sit—chair : : sleep— book tree bed see	2
3	skirts—girl : : trousers— boy hat vest coat	3
4	December—Christmas : : November— month Thanksgiving December early	4
5	above—top : : below— above bottom sea hang	5
6	spoon—soup : : fork— knife plate cup meat	6
7	bird—song : : man— speech woman boy work	7
8	corn—horse : : bread— daily flour man butter	8
9	sweet—sugar : : sour— sweet bread man vinegar	9
10	devil—bad : : angel— Gabriel good face heaven	10
11	Edison—phonograph : : Columbus— America Washington Spain Ohio	11
12	cannon—rifle : : big— bullet gun army little	12
13	engineer—engine : : driver— harness horse passenger man	13
14	wolf—sheep : : cat— fur kitten dog mouse	14
15	officer—private : : command— army general obey regiment	15

16	hunter—gun : : fisherman— fish net bold wet	16
17	cold—heat : : ice— steam cream frost refrigerator	17
18	uncle—nephew : : aunt— brother sister niece cousin	18
19	framework—house : : skeleton— bones skull grace body	19
20	breeze—cyclone : : shower— bath cloudburst winter spring	20
21	pitcher—milk : : vase— flowers pitcher table pottery	21
22	blonde—brunette : : light— heavy electricity dark girl	22
23	abundant—cheap : : scarce— costly plentiful common gold	23
24	polite—impolite : : pleasant— agreeable disagreeable man face	24
25	mayor—city : : general— private navy army soldier	25
26	succeed—fail : : praise— lose friend God blame	26
27	people—house : : bees— thrive sting hive thick	27
28	peace—happiness : : war— grief fight battle Europe	28
29	a—b : : c— e b d letter	29
30	darkness—stillness : : light— moonlight sound sun window	30
31	complex—simple : : hard— brittle money easy work	31
32	music—noise : : harmonious— hear accord violin discordant	32
33	truth—gentleman : : lie— rascal live give falsehood	33
34	blow—anger : : caress— woman kiss child love	34
35	square—cube : : circle— line round square sphere	35
36	mountain—valley : : genius— idiot write think brain	36
37	clock—time : : thermometer— cold weather temperature mercury	37
38	fear—anticipation : : regret— vain memory express resist	38
39	hope—cheer : : despair— grave repair death depression	39
40	dismal—dark : : cheerful— laugh bright house gloomy	40

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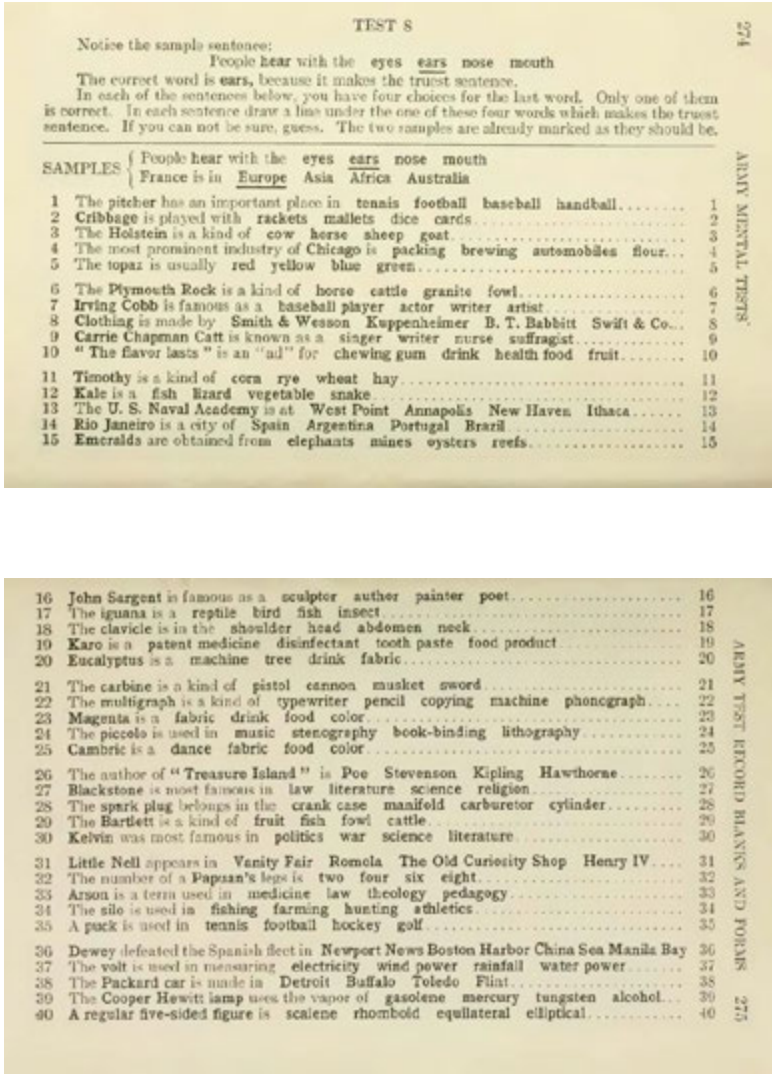
Figure C-6. Army Group Examination Alpha: Test 7.[6]



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TEST 8

Notice the sample sentence:

People **hear** with the eyes ears nose mouth

The correct word is **ears**, because it makes the truest sentence.

In each of the sentences below, you have four choices for the last word. Only one of them is correct. In each sentence draw a line under the one of these four words which makes the truest sentence. If you can not be sure, guess. The two samples are already marked as they should be.

SAMPLES
People **hear** with the eyes ears nose mouth
France is in Europe Asia Africa Australia

1 The **pitcher** has an important place in tennis football baseball handball 1
2 **Cribbage** is played with rackets mallets dice cards 2
3 The **Holstein** is a kind of cow horse sheep goat 3
4 The most prominent industry of **Chicago** is packing brewing automobiles flour 4
5 The topaz is usually red yellow blue green 5

6 The **Plymouth Rock** is a kind of horse cattle granite fowl 6
7 **Irving Cobb** is famous as a baseball player actor writer artist 7
8 **Clothing** is made by Smith & Wesson Kuppenheimer B. T. Babbitt Swift & Co 8
9 **Carrie Chapman Catt** is known as a singer writer nurse suffragist 9
10 "**The flavor lasts**" is an "ad" for chewing gum drink health food fruit 10

11 **Timothy** is a kind of corn rye wheat hay 11
12 **Kale** is a fish lizard vegetable snake 12
13 The **U. S. Naval Academy** is at West Point Annapolis New Haven Ithaca 13
14 **Rio Janeiro** is a city of Spain Argentina Portugal Brazil 14
15 **Emeralds** are obtained from elephants mines oysters reefs 15

16 **John Sargent** is famous as a sculptor author painter poet 16
17 The iguana is a reptile bird fish insect 17
18 The clavicle is in the shoulder head abdomen neck 18
19 **Karo** is a patent medicine disinfectant tooth paste food product 19
20 **Eucalyptus** is a machine tree drink fabric 20

21 The carbine is a kind of pistol cannon musket sword 21
22 The multigraph is a kind of typewriter pencil copying machine phonograph 22
23 **Magenta** is a fabric drink food color 23
24 The piccolo is used in music stenography book-binding lithography 24
25 **Cambric** is a dance fabric food color 25

26 The author of "**Treasure Island**" is Poe Stevenson Kipling Hawthorne 26
27 **Blackstone** is most famous in law literature science religion 27
28 The **spark plug** belongs in the crank case manifold carburetor cylinder 28
29 The **Bartlett** is a kind of fruit fish fowl cattle 29
30 **Kelvin** was most famous in politics war science literature 30

31 **Little Nell** appears in Vanity Fair Romola The Old Curiosity Shop Henry IV 31
32 The number of a **Papoan's** legs is two four six eight 32
33 **Arson** is a term used in medicine law theology pedagogy 33
34 The **silo** is used in fishing farming hunting athletics 34
35 A **puck** is used in tennis football hockey golf 35

36 **Dewey** defeated the Spanish fleet in Newport News Boston Harbor China Sea Manila Bay 36
37 The **volt** is used in measuring electricity wind power rainfall water power 37
38 The **Packard car** is made in Detroit Buffalo Toledo Flint 38
39 The **Cooper Hewitt lamp** uses the vapor of gasolene mercury tungsten alcohol 39
40 A regular **five-sided figure** is scalene rhomboid equilateral elliptical 40

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Figure C-7. Army Group Examination Alpha: Test 8.[7]

ENDNOTES – APPENDIX C

1. Clarence S. Yoakum and Robert M. Yerkes, comp. and eds., *Army Mental Tests*, New York: Henry Holt and Company, 1920, pp. 262-263, available from *https://archive.org/details/armymentaltests00yoak*, accessed September 29, 2017.

2. Ibid., pp. 264-265.

3. Ibid., pp. 266-267.

4. Ibid., pp. 268-269.

5. Ibid., pp. 270-271.

6. Ibid., pp. 272-273.

7. Ibid., pp. 274-275.

APPENDIX D

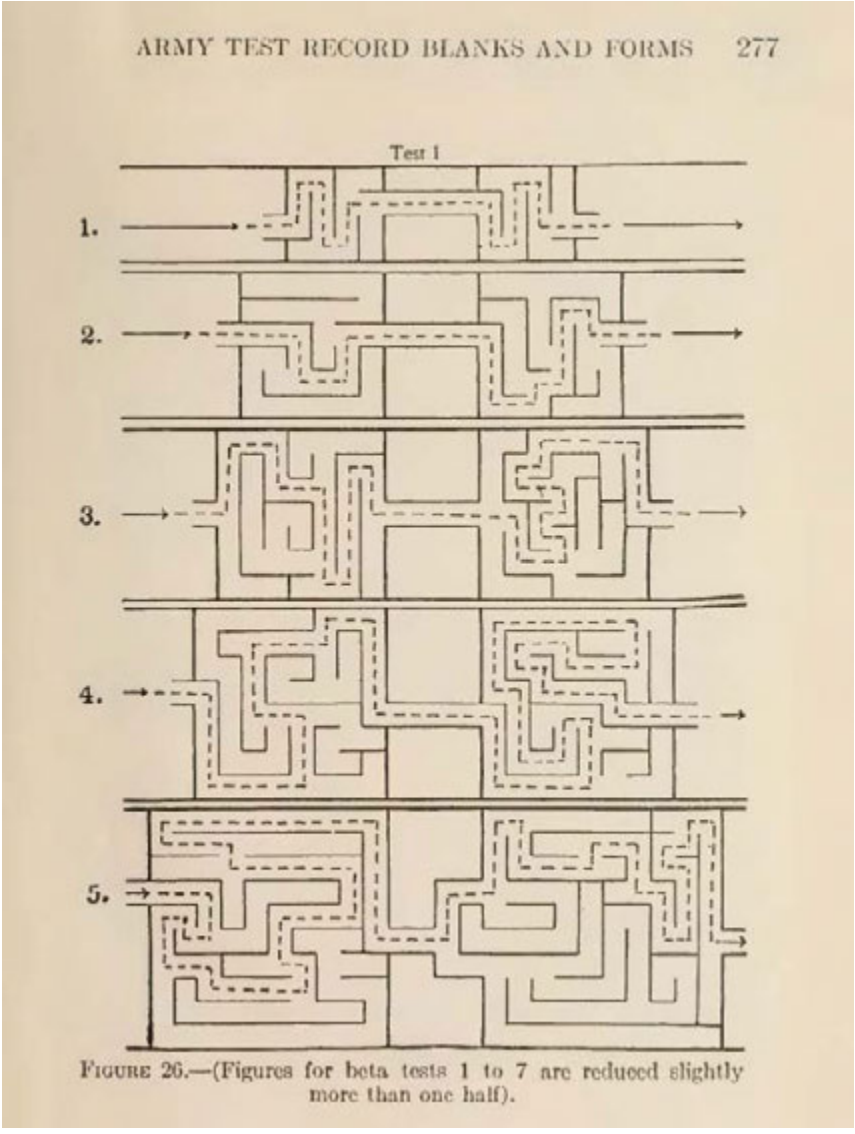


Figure D-1. Army Group Examination Beta: Test 1.[1]

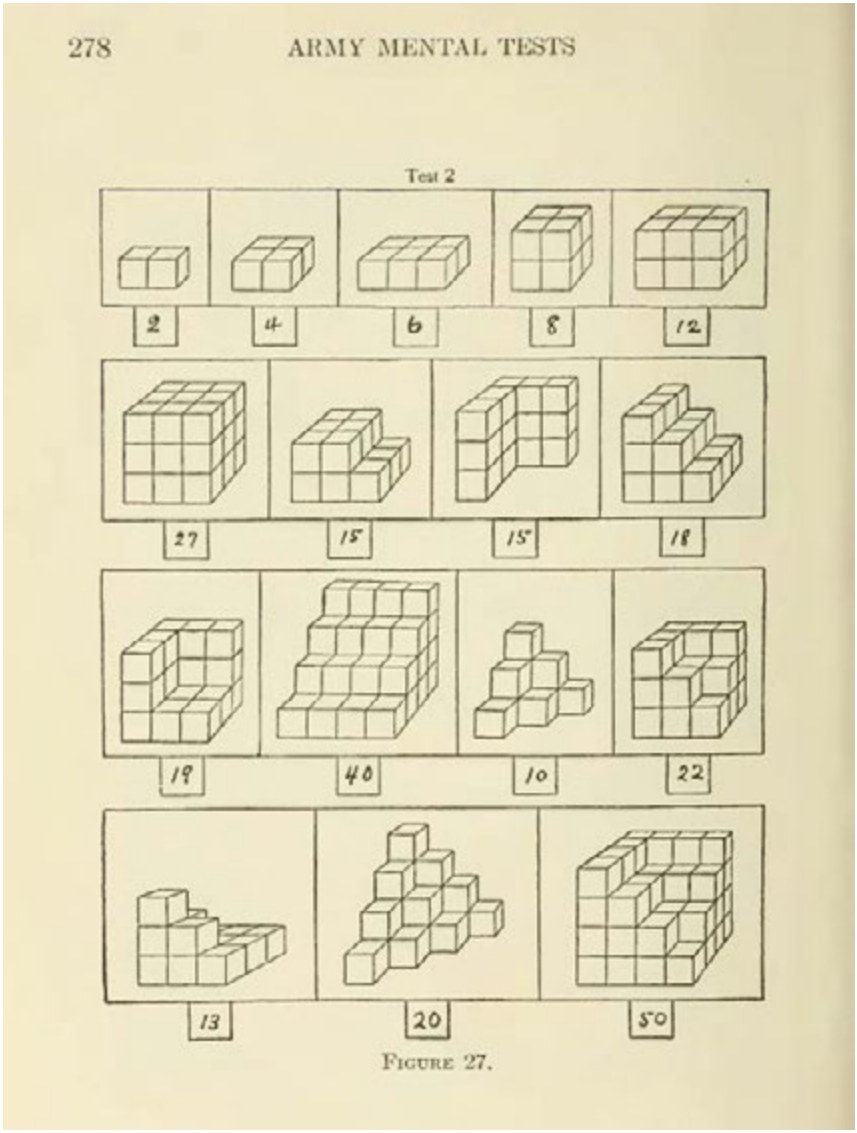


Figure D-2. Army Group Examination Beta: Test 2.[2]

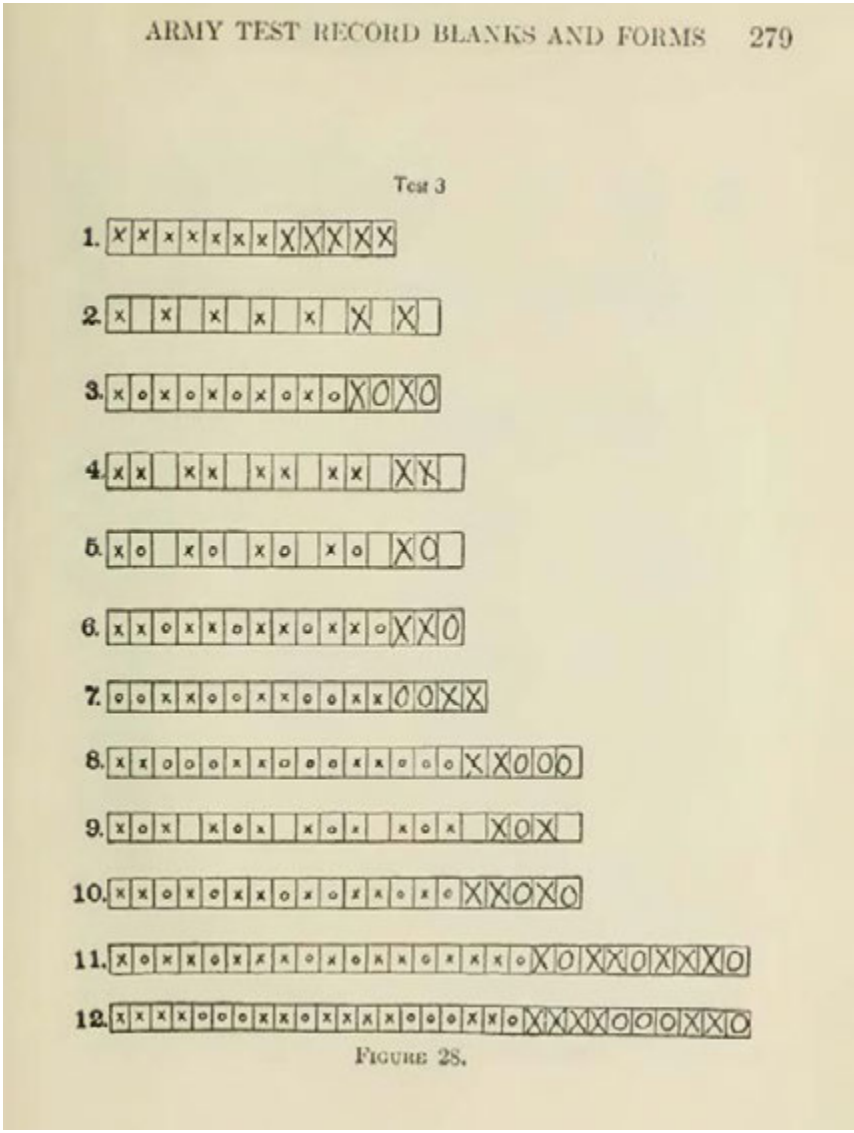


Figure D-3. Army Group Examination Beta: Test 3.[3]

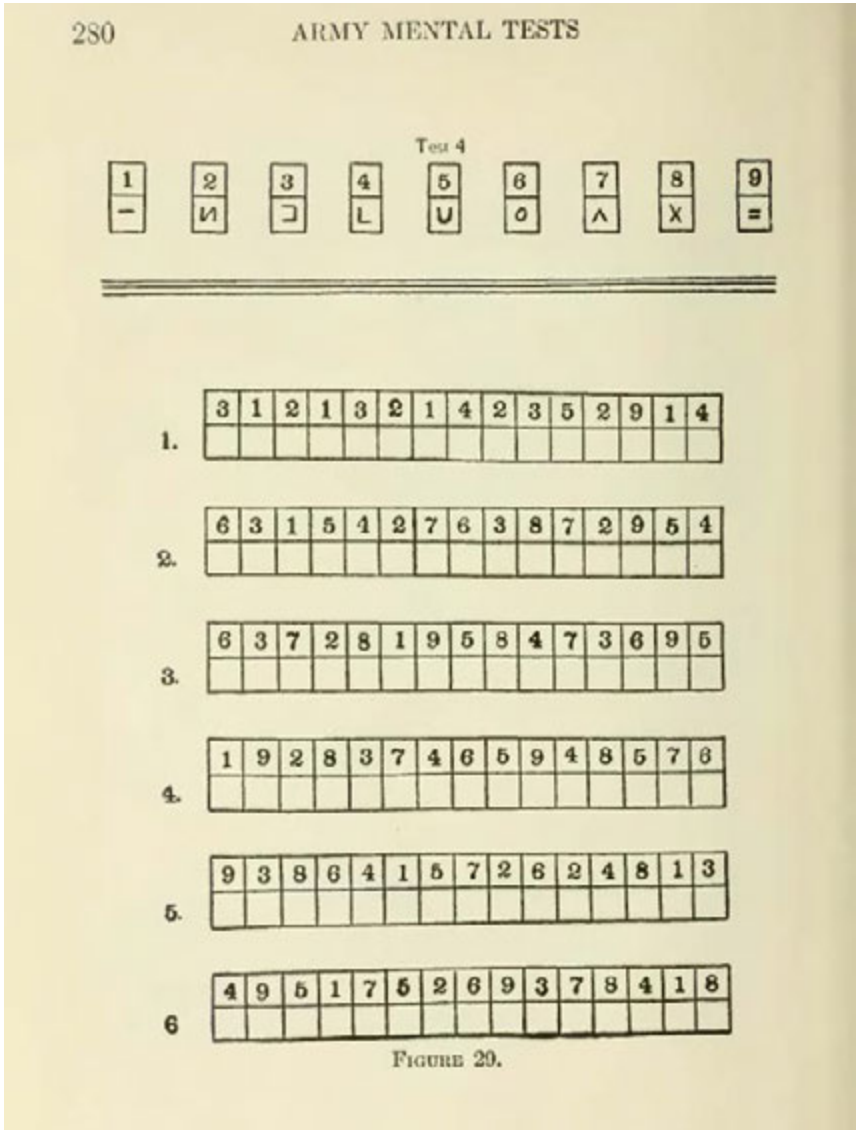
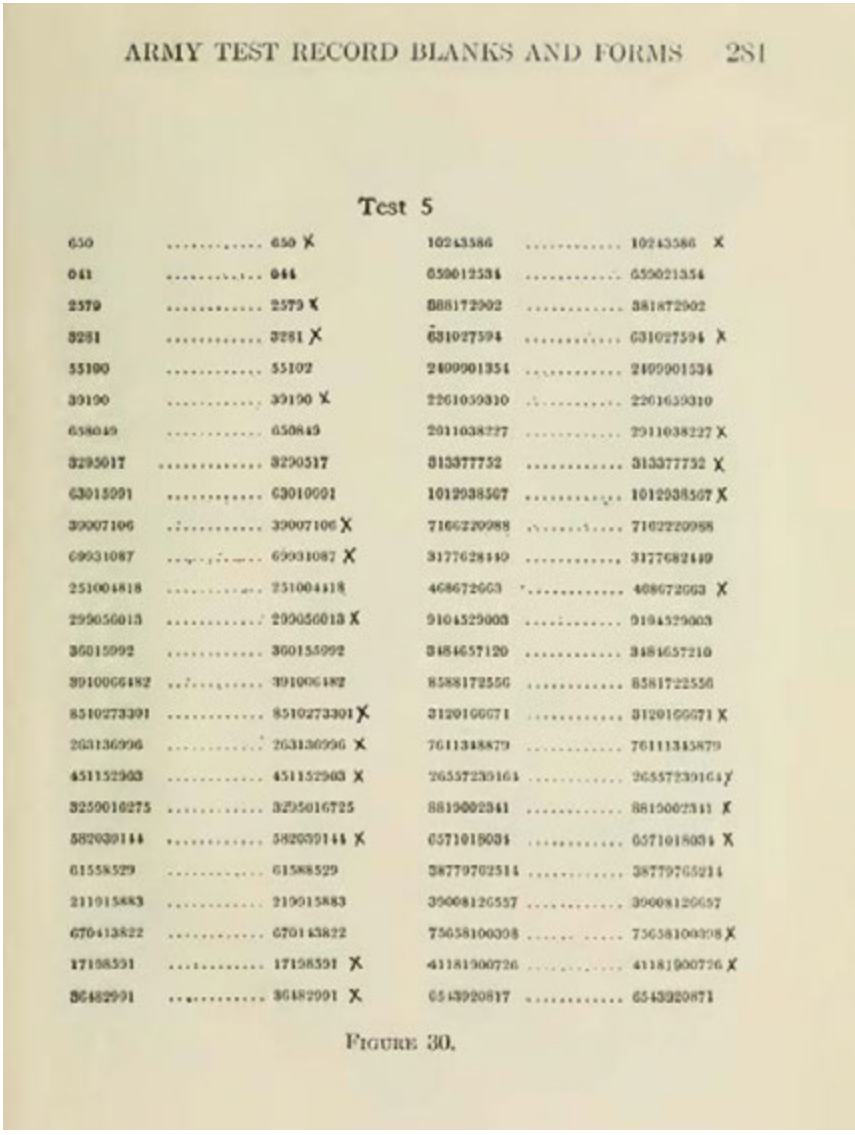


Figure D-4. Army Group Examination Beta: Test 4.[4]



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Test 5

650	650 X	10243586	10243586 X
044	044	655021354	655021354
2579	2579 X	381872902	381872902
3281	3281 X	631027594	631027594 X
55102	55102	2409901354	2409901354
39190	39190 X	2261039310	2261039310
650845	650845	2911038227	2911038227 X
3290517	3290517	313377732	313377732 X
63010091	63010091	1012938507	1012938507 X
39007106	39007106 X	7162220988	7162220988
69031087	69031087 X	3177682449	3177682449
251004818	251004818	468672663	468672663 X
295056013	295056013 X	9104529003	9104529003
36015092	36015092	3484657210	3484657210
3910006482	3910006482	8588172556	8588172556
8510273391	8510273391 X	3120166071	3120166071 X
263136996	263136996 X	7611348879	7611348879
451152903	451152903 X	26557239164	26557239164 X
3259016275	3259016725	8815002341	8815002341 X
582039144	582039144 X	6571018034	6571018034 X
61558529	61588529	38779702514	38779702514
219015883	219015883	39008120557	39008120557
670413822	670413822	75658100308	75658100308 X
17158591	17158591 X	41181900726	41181900726 X
36482991	36482991 X	6543920817	6543920871

FIGURE 30.

Figure D-5. Army Group Examination Beta: Test 5.[5]

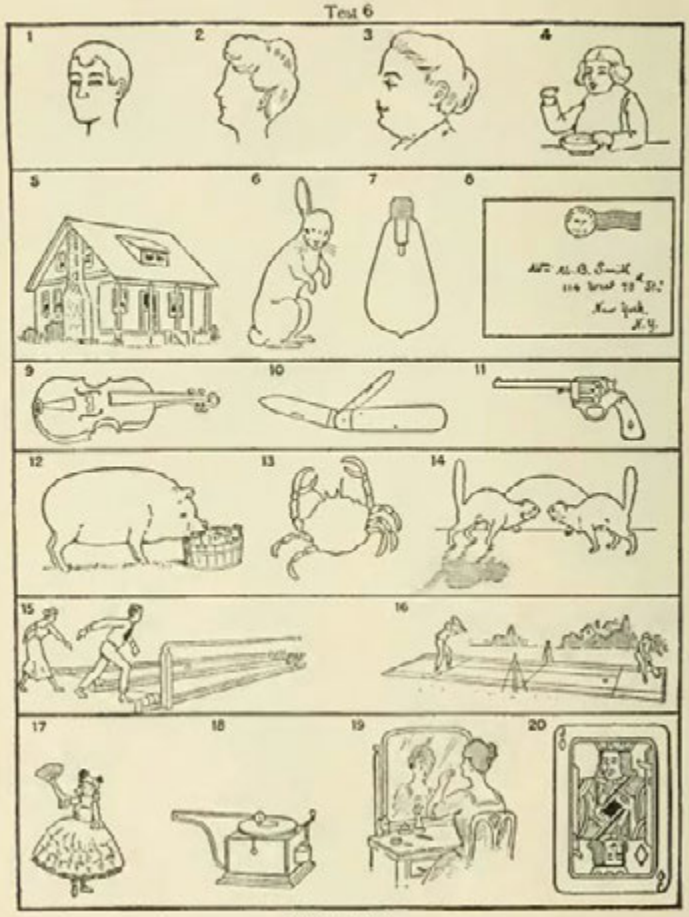

FIGURE 31.

Figure D-6. Army Group Examination Beta: Test 6.[6]

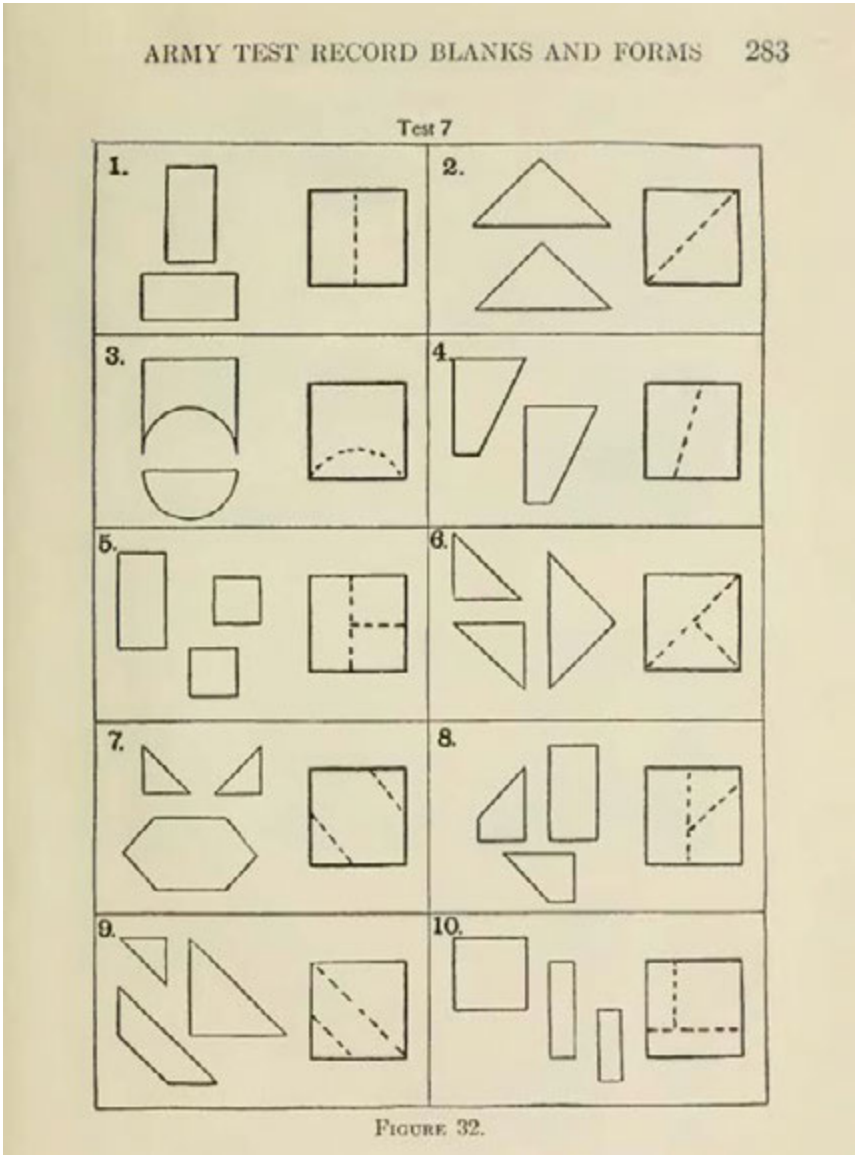

Figure D-7. Army Group Examination Beta: Test 7.[7]

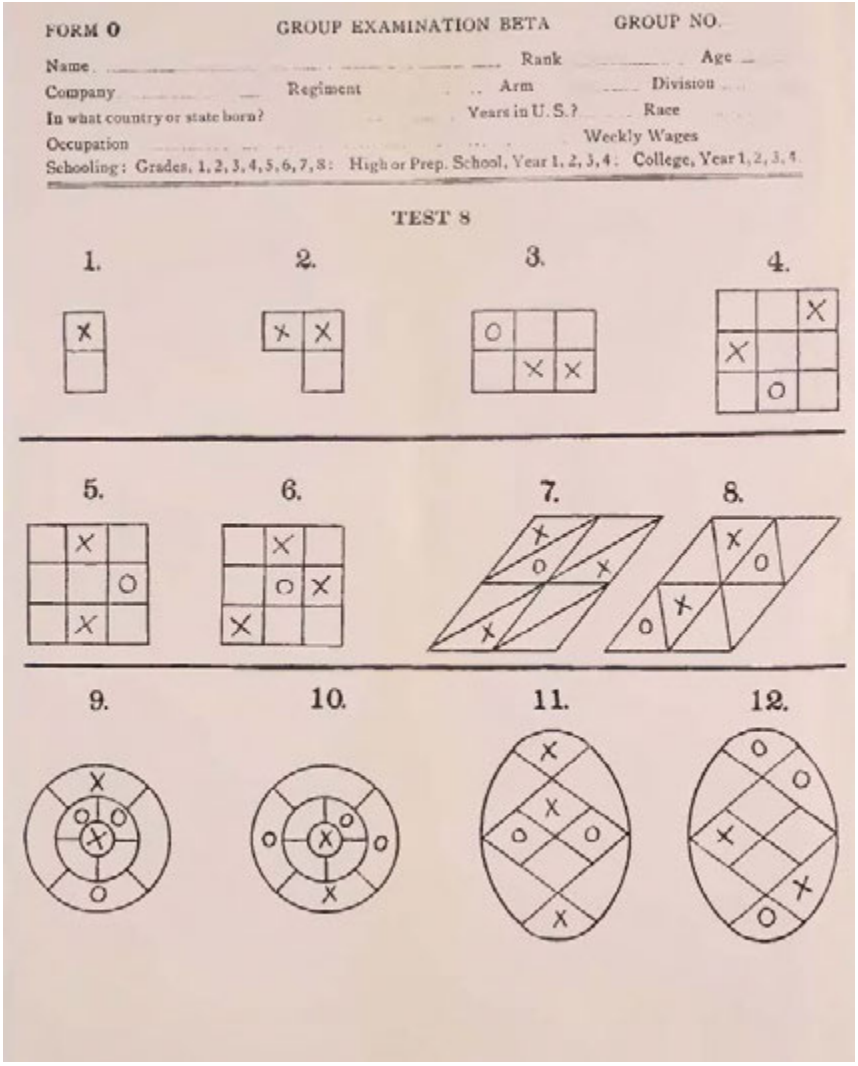

Figure D-8. Army Group Examination Beta: Test 8.[8]

ENDNOTES – APPENDIX D

1. Clarence S. Yoakum and Robert M. Yerkes, comp. and eds., *Army Mental Tests*, New York: Henry Holt and Company, 1920, p. 277, available from *https://archive.org/details/armymentaltests00yoak*, accessed September 29, 2017.

2. Ibid., p. 278.

3. Ibid., p. 279.

4. Ibid., p. 280.

5. Ibid., p. 281.

6. Ibid., p. 282.

7. Ibid., p. 283.

8. Ibid., record blank. Note, the page block is unnumbered, but falls between page 276 and 277 in the digitized version.

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