

GAO

Report to the Subcommittee on  
Defense, Committee on Appropriations,  
House of Representatives

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September 2003

# MILITARY EDUCATION

## DOD Needs to Enhance Performance Goals and Measures to Improve Oversight of Military Academies



G A O

Accountability \* Integrity \* Reliability

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Highlights of [GAO-03-1000](#), a report to the Subcommittee on Defense, Committee on Appropriations, House of Representatives

## Why GAO Did This Study

Graduates of the service academies operated by the Army, Navy, and Air Force currently make up approximately 18 percent of the officer corps for the nation's armed services. The academies represent the military's most expensive source of new officers. The Department of Defense (DOD) pays the full cost of a student's 4-year education at the academies; and the related cost has increased over the past 4 years. Admission to the academies is highly competitive. The academies use a "whole person" method to make admission decisions. Recent studies by the Air Force raised questions about possible adverse effects of whole person admissions policies on student quality. GAO was asked to review all three service academies and specifically address the extent to which (1) DOD oversees the service academies, (2) applicants are granted waivers of academic standards, and (3) various groups of students differ in admissions scores and academy performance.

## What GAO Recommends

GAO recommends that the Secretary of Defense direct the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD/P&R), in concert with the services, to further enhance performance goals and measures to improve oversight of the operations and performance of the service academies. In comments on a draft of this report, DOD concurred with GAO's recommendation.

[www.gao.gov/cgi-bin/getrpt?GAO-03-1000](http://www.gao.gov/cgi-bin/getrpt?GAO-03-1000).

To view the full product, including the scope and methodology, click on the link above. For more information, contact Derek Stewart at (202) 512-5559 or [stewartd@gao.gov](mailto:stewartd@gao.gov).

## MILITARY EDUCATION

# DOD Needs to Enhance Performance Goals and Measures to Improve Oversight of Military Academies

## What GAO Found

The Office of the Under Secretary of Defense for Personnel and Readiness (OUSD/P&R), the services, and the academies' boards of visitors conduct considerable oversight of the academies' operations and performance, but they lack a complete oversight framework. A complete oversight framework includes performance goals and measures against which the academies' performance could be better assessed. OUSD/P&R and the services use the number and type of commissioned officers as the primary measure of academy performance. OUSD/P&R requires and receives reports on academy performance from the services. While data submitted in these reports provide perspective on current performance compared with past performance, without stated performance goals and measures, these reports do not offer OUSD/P&R or the services as good an insight into the academies' performance as they could. Additionally, though the academy boards of visitors serve as an external oversight mechanism to focus attention on a wide range of issues, they also do not assess the academies' performance against established performance goals and measures.

The academies do not grant waivers from academic criteria or have absolute minimum scores for admission. However, under the whole person approach, the academies can admit some applicants whose academic scores are lower than might normally be competitive for admission, but who in their totality (academics, physical aptitude, and leadership) are evaluated by academy officials as being capable of succeeding at the academy.

In our review of the academy classes that started in 1998 (class of 2002), we found that despite differences among various groups of students in their admissions scores and similar differences in their performance while at the academies, the differences in performance were not sizable. Some groups, such as females, performed better in some categories than the class as a whole and worse in others. Some groups (minorities, preparatory school graduates, recruited athletes, and students in the lower 30 percent of their class in terms of academic admissions scores) performed at lower levels on average in all categories than the class as a whole.

**Academy Operating Costs and Cost Per Graduate, Fiscal Years 1999-2002**

Academy	Cost category	FY 1999	FY 2000	FY 2001	FY 2002
Military Academy	Total operating costs	\$301,058,452	\$330,603,820	\$336,416,716	\$364,971,975
	Cost per graduate	312,150	320,120	339,318	349,327
Naval Academy	Total operating costs	245,749,679	253,817,467	273,809,865	292,696,358
	Cost per graduate	254,983	256,931	266,033	275,001
Air Force Academy	Total operating costs	277,639,005	314,972,559	321,335,152	333,056,023
	Cost per graduate	305,945	305,133	313,456	322,750

Source: DOD.

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# Contents

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<b>Letter</b>		<b>1</b>
	Results in Brief	3
	Background	6
	DOD Lacks a Complete Framework for Oversight of the Academies	15
	Whole Person Approach Allows Academies Flexibility to Admit Students with a Range of Qualifications	19
	No Significant Differences in Admissions and Academy Performance between Various Groups of Students	21
	Conclusion	26
	Recommendation for Executive Action	26
	Agency Comments	26

---

<b>Appendix I</b>	<b>Scope and Methodology</b>	<b>28</b>
-------------------	------------------------------	-----------

---

<b>Appendix II</b>	<b>Results of Statistical Analysis of Class of 2002 Admissions and Academy Performance Scores</b>	<b>31</b>
	Admissions and Performance Scores	31
	Relationships between Admissions and Performance Scores	34

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<b>Appendix III</b>	<b>Comments from the Department of Defense</b>	<b>37</b>
---------------------	--	-----------

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<b>Appendix IV</b>	<b>GAO Contact and Staff Acknowledgments</b>	<b>39</b>
--------------------	--	-----------

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<b>Related GAO Products</b>		<b>40</b>
-----------------------------	--	-----------

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<b>Tables</b>		
	Table 1: Civilian and Military Faculty at the Service Academies	7
	Table 2: Academy Operating Costs and Cost Per Graduate, Fiscal Years 1999-2002.	8
	Table 3: Average Admissions Scores for the Selected Groups in the Class That Started in 1998 at the U.S. Military Academy	22
	Table 4: Average Admissions Scores for the Selected Groups in the Class That Started in 1998 at the U.S. Naval Academy	22

---

Table 5: Average Admissions Scores for the Selected Groups in the Class That Started in 1998 at the U.S. Air Force Academy	22
Table 6: Percentage of the Selected Groups Making Up the Lower 30 percent of the Classes in Terms of Their Academic Admissions Scores, by Academy	23
Table 7: Student Performance for Selected Groups at the U.S. Military Academy	24
Table 8: Student Performance for Selected Groups at the U.S. Naval Academy	24
Table 9: Student Performance for Selected Groups at the U.S. Air Force Academy	25
Table 10: Admissions and Academy Performance Scores for the Class of 2002	31
Table 11: Number of Students Graduating and Graduation Rates for the Class of 2002	31
Table 12: Admissions and Performance Scores for the Class of 2002 at the U.S. Military Academy	32
Table 13: Admissions and Performance Scores for the Class of 2002 at the U.S. Naval Academy	33
Table 14: Admissions and Performance Scores for the Class of 2002 at the U.S. Air Force Academy	33
Table 15: Regression Coefficients (Standardized Coefficients) from Linear Regression Models Testing Correlations between Academic and Whole Person Admissions Scores with Cumulative GPA, Cumulative MPA, and Order of Merit for the Class of 2002 at the Service Academies	35
Table 16: Regression Coefficients (Standardized Coefficients) from Logistic Regression Models Testing Correlations Between Academic and Whole Person Admissions Scores and the Likelihood of Graduation for the Class of 2002 at the Service Academies	36

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## Figures

Figure 1: Basic Steps in the Academy Admissions Process	9
Figure 2: Areas and Their Weights Considered in the U.S. Military Academy's Whole Person Admissions Process	11
Figure 3: Areas and Their Weights Considered in the U.S. Naval Academy's Whole Person Admissions Process	12
Figure 4: Areas and Their Weights Considered in the U.S. Air Force Academy's Whole Person Admissions Process	13
Figure 5: Categories of Academy Nominations	14

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## Abbreviations

ACT	American College Testing
DOD	Department of Defense
GPA	grade point average
MPA	military performance average
OUSD/P&R	Office of the Under Secretary of Defense for Personnel and Readiness
ROTC	Reserve Officer Training Corps
SAT	Scholastic Aptitude Test

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United States General Accounting Office  
Washington, DC 20548

September 10, 2003

The Honorable Jerry Lewis  
Chairman  
The Honorable John P. Murtha  
Ranking Minority Member  
Subcommittee on Defense  
Committee on Appropriations  
House of Representatives

Graduates of the service academies operated by the Army, Navy, and Air Force make up approximately 18 percent of the officer corps for the nation's armed services.<sup>1</sup> The academies represent the most expensive source of new officers, compared with other sources for officers, such as Reserve Officer Training Corps (ROTC) programs at colleges and universities or officer candidate/training schools for individuals who already have college degrees. The Department of Defense (DOD) pays the full cost of providing the 4-year programs of academic education, military training, physical conditioning, and pay for each student.<sup>2</sup> In fiscal year 2002, DOD reported costs per graduate for the U.S. Military Academy, the U.S. Naval Academy, and the U.S. Air Force Academy were approximately \$349,000, \$275,000, and \$333,000, respectively. These costs have increased over the past 4 years. To ensure the best value for the investment in the academies, effective management principles are critical. Such principles include a complete oversight framework, with clear roles and responsibilities, as well as performance goals and measures against which to objectively assess performance.

With each academy accepting about 1,200 of its more than 10,000 applicants a year, admission to the academies is highly competitive. Applicants must be selected or obtain a nomination, such as from a senator, representative, the President, or the Vice President, based on the

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<sup>1</sup> The Marine Corps does not have its own academy. The Naval Academy graduates both Navy and Marine Corps officers.

<sup>2</sup> Students attending the U.S. Military Academy at West Point, New York, and the U.S. Air Force Academy in Colorado Springs, Colorado, are called "cadets," while those attending the U.S. Naval Academy, in Annapolis, Maryland, are called "midshipmen." We refer to cadets and midshipmen collectively as "students."

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categories established by law.<sup>3</sup> Most nominations are reserved for Congress, which, therefore, has a central role in admitting students to the academies. In addition to basic age and medical qualifications, the academies' admissions process involves an assessment of applicants' academic achievement (e.g., Scholastic Aptitude Test—SAT—scores and grade point averages), physical aptitude, and extracurricular activities (i.e., leadership potential). Academy officials combine these assessments into a “whole person” admissions score that is used to determine an applicant's potential to graduate from an academy and potential fitness as a commissioned officer. Applicants compete for admission based on these scores.

Air Force studies have raised questions about possible adverse effects of whole person admissions policies on student quality. For example, the Air Force found that its whole person assessments and resulting admissions scores have led the Air Force Academy to admit an increasing number of students whose academic qualifications are below academic minimums, as well as to admit an increasing number of students recruited largely to participate in varsity intercollegiate athletics.

The House of Representatives report on defense appropriations for fiscal year 2003<sup>4</sup> directed that we perform reviews of all three service academies and their respective preparatory schools.<sup>5</sup> As part of the review of the service academies, we were also directed to obtain student and faculty perceptions of various aspects of student life at the academies. Issues associated with the academy preparatory schools and the results of surveys on aspects of student life are addressed in separate reports.<sup>6</sup>

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<sup>3</sup> 10 U.S.C. §§ 4342, 6954, and 9342.

<sup>4</sup> H.R. Rept. 107-532, at 14-15 (2002).

<sup>5</sup> The academy preparatory schools exist to prepare selected students who are not ready academically to attend one of the academies.

<sup>6</sup> U.S. General Accounting Office, *Military Education: DOD Needs to Align Academy Preparatory Schools' Mission Statements with Overall Guidance and Establish Performance Goals*, [GAO-03-1017](#) (Washington, D.C.: September 2003); and *Military Education: Student and Faculty Perceptions of Student Life at the Military Academies*, [GAO-03-1001](#) (Washington, D.C.: September 2003).

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As agreed with your offices, this report addresses the following questions, to what extent

- (1) does DOD oversee the academies' operations and performance?
- (2) are applicants granted waivers from academic criteria for admissions?
- (3) do various groups of students differ in admissions scores and academy performance?

In addition to reviewing documents and interviewing officials at all three academies, the service headquarters, the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD/P&R), and the academies' boards of visitors, we reviewed admissions policies and procedures and observed their use by academy officials in evaluating applications being considered for the incoming class of 2007. We also obtained and analyzed admissions and performance data for the student class that graduated in 2002. To compare student admissions qualifications and performance at the academies, we identified six major groups of students common to all academies: females, minorities, academy preparatory school graduates, recruited athletes, prior enlisted personnel, and students whose academic admission scores fell in the lower 30 percent of the entering class.<sup>7</sup> Data on student performance included academic grade point average; military performance average, which is similar to a performance evaluation for commissioned officers; and class rank.<sup>8</sup> It also included graduation rate. Other issues, such as recent controversies associated with alleged sexual assault, did not fall within the scope of this review. Further details on our scope and methodology are in appendix I. We conducted our work from October 2002 through May 2003 in accordance with generally accepted government auditing standards.

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## Results in Brief

The Office of the Under Secretary of Defense for Personnel and Readiness (OUSD/P&R), the services, and the academies' boards of visitors conduct considerable oversight of the academies' operations and performance, but they lack a complete oversight framework. In 1991, our report concluded that better oversight of the academies was needed and made recommendations to improve DOD oversight. Since then, DOD has taken

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<sup>7</sup> Each group may contain members of the other groups.

<sup>8</sup> Class rank is referred to as "order of merit" by the academies.



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measures to address these issues, including establishing guidance on oversight of the academies and uniform academy cost reporting. However, DOD has not established a complete oversight framework, which would include not only clear roles and responsibilities, but also performance goals and measures against which to objectively assess performance. OUSD/P&R, the services, and the academies' boards of visitors have different oversight roles, but largely conduct oversight activities without the benefit of formalized performance goals and measures. OUSD/P&R and the services use the number and types of commissioned officers as the primary measure of academy performance. OUSD/P&R requires and receives reports on academy performance from the services.

While data submitted in these reports provide perspective on such performance measures as graduation rates, admissions trends for women and minorities, and information on the quality of admitted students, without stated performance goals and measures, these data do not offer OUSD/P&R or the services as good an insight into the academies' performance as they could. For example, the data collected by the academies show that the graduation rates have increased in the last 10 years; however, there is no stated goal for graduation rate against which to judge whether this rate of increase is adequate. Other data collected by the academies indicate that the percentage of females and minorities has fluctuated over the last 3 years, but apart from admissions targets used by the Military Academy, there are no stated goals against which to measure the adequacy of these admissions trends. Additionally, academy officials regularly analyze data on student performance to determine the extent to which admissions standards can be changed to improve overall student performance at the academies. However, there are no stated goals for student body performance, apart from minimum graduation standards such as the cumulative academic grade point average, that might help the academies and other oversight bodies assess overall student performance. Additionally, each academy's board of visitors—an external oversight mechanism—focuses attention and actions on a wide range of operational and quality of life issues at the academies. However, the boards do not evaluate academy performance against established performance goals and measures. Without formal goals and measures that are, moreover, linked to mission statements, oversight bodies do not have sufficient focus for their efforts and cannot systematically assess an organization's strengths and weaknesses nor identify appropriate remedies that would help them achieve the best value for the nation's investment in the academies.

The academies do not grant waivers from academic criteria or have absolute minimum scores for admission. Under the whole person

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approach, the academies can admit some applicants whose academic scores are lower than might normally be competitive for admission, but who in their totality (academics, physical aptitude, and leadership) are evaluated by academy officials as being qualified and capable of succeeding at the academy. The only admissions criteria with an absolute minimum score for qualifying for admissions is physical aptitude. The academic and leadership criteria have a range of qualifying scores based on what general levels of ability are considered competitive during the admissions process. If an applicant's score is lower than the competitive range in academics, then admission officials have some flexibility in (1) further considering the applicant by re-examining the student's record for information that can produce further insight about his or her academic achievement and (2) weighing the extent to which the leadership component of the whole person score may offset the low component. It is possible for students to be admitted whose academic scores were not as competitive as some of their peers who may not have been admitted. The applicant is considered a risk and is evaluated through a deliberative process by academy officials on the basis of their judgment of whether the applicant is fully qualified and capable of succeeding at that academy. The subjective nature of this approach is consistent with the intent of the whole person concept, by which the academies want to admit students who also demonstrate leadership characteristics that cannot be quantified by purely objective scoring methods. Academy officials do not consider this approach to represent an academic waiver, but instead their judicious assessment of the whole person.

In our review of the academy classes that started in 1998 (class of 2002), we found differences among various groups of students in their admissions scores and similar differences in their performance while at the academies; the differences in performance were not sizable. For the class data we reviewed, minorities, academy preparatory school graduates, recruited athletes, and prior enlisted students<sup>9</sup> all had lower average admissions scores than the average for the class as a whole. Of those students in the lower 30 percent of the class in terms of academic admissions scores, about 44 percent were recruited athletes, between 25 and 31 percent were minorities, and between 20 and 34 percent were preparatory school graduates. Regarding performance, we found differences at the academies between selected groups (i.e., females, minorities, preparatory school graduates, recruited athletes, prior enlisted

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<sup>9</sup> Each of these groups can contain members from other groups.

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students, and students in the lower 30 percent of the class in terms of academic admissions scores) and the class as a whole. Those differences varied but were generally not sizable. For example, females at one academy had a lower graduation rate than the class as a whole but a higher average academic grade point average and a higher average class rank. Some groups at all academies—such as minorities, preparatory school graduates, recruited athletes, and students in the lower 30 percent of their class in terms of academic admissions scores—performed at lower levels on average in all categories than the class as a whole, but these differences were not significant. For example, one of the lowest average academic grade point averages among the groups we reviewed was 2.61, whereas the average for the class as a whole at that academy was 2.93. A 2.0 grade point average is required to graduate. The lowest graduation rate for the class we reviewed was 65 percent for the students in the lower 30 percent of their class in terms of academic admissions scores at one academy. The average graduation rate for the class as a whole at that academy was 74 percent.

We are making a recommendation to improve DOD’s oversight of operations and performance at the academies through the enhancement of performance goals and measures. In comments on a draft of this report, DOD concurred with our recommendation.

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## Background

The Departments of the Army, the Navy, and the Air Force each have their own educational institutions (academies) to produce a portion of each branch’s officer corps:<sup>10</sup>

- U.S. Military Academy (West Point, N.Y.), established in 1802;
- U.S. Naval Academy (Annapolis, Md.), established in 1845; and
- U.S. Air Force Academy (Colorado Springs, Colo.), established in 1954.

The academies are structured to provide a curriculum critical to the development of successful future officers in academic, military, and physical areas of achievement. Additionally, the academies emphasize the moral and ethical development of students through their respective honor codes and concepts.

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<sup>10</sup> Other sources for commissioned officers include ROTC programs at colleges and universities and officer candidate/training schools for individuals who already have college degrees.

There are approximately 4,000 students enrolled at each of the three service academies at any given time, each comprising four classes. In December 2002, Congress authorized an annual increase of up to 100 students until the total number reaches 4,400 for each academy.<sup>11</sup> In 2002 the Military Academy graduated 968 students; the Naval Academy 977 students; and the Air Force Academy 894 students. Faculty at the U.S. Military Academy and the U.S. Air Force Academy are comprised predominantly of military officers (79 and 75 percent, respectively), while at the U.S. Naval Academy 59 percent of the faculty are civilians. Table 1 shows the composition of the faculty at the service academies.

**Table 1: Civilian and Military Faculty at the Service Academies**

<b>Service academy</b>	<b>Total number of faculty</b>	<b>Total number of civilian faculty (% of faculty)</b>	<b>Total number of military faculty (% of faculty)</b>
U.S. Military Academy	622	131 (21%)	491 (79%)
U.S. Naval Academy	555	326 (59%)	229 (41%)
U.S. Air Force Academy	490	123 (25%)	367 (75%)
<b>Total</b>	<b>1,667</b>	<b>580 (35%)</b>	<b>1,087 (65%)</b>

Source: DOD.

Note: Faculty information is based on a snapshot of each academy in February 2003.

DOD reports that the total cost to operate all three academies in fiscal year 2002 was \$990.7 million. Table 2 shows the reported operating costs and cost per graduate for each academy from fiscal year 1999 through fiscal year 2002. We did not independently verify these costs.

<sup>11</sup> Pub. L. 107-314, *Bob Stump National Defense Authorization Act for Fiscal Year 2003*, § 532, December 2, 2002.

**Table 2: Academy Operating Costs and Cost Per Graduate, Fiscal Years 1999-2002**

Academy	Cost Category	Fiscal year 1999	Fiscal year 2000	Fiscal year 2001	Fiscal year 2002
Military Academy	Total operating costs	\$301,058,452	\$330,603,820	\$336,416,716	\$364,971,975
	Cost per graduate	312,150	320,120	339,318	349,327
Naval Academy	Total operating costs	245,749,679	253,817,467	273,809,865	292,696,358
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Air Force Academy	Total operating costs	277,639,005	314,972,559	321,335,152	333,056,023
	Cost per graduate	305,945	305,133	313,456	322,750

Source: DOD.

Prospective students must meet basic eligibility requirements for appointment to an academy. They must (1) be unmarried, (2) be a U.S. citizen, (3) be at least 17 years of age and must not have passed their twenty-third birthday on July 1 of the year they enter an academy, (4) have no dependents, and (5) be of good moral character.<sup>12</sup>

After determining eligibility, a candidate submits an application to a preferred academy or academies. Each submitted application is required to include information such as, but not limited to, the candidate's (1) SAT scores (or American College Testing—ACT—examination scores); (2) high school grade point average (and class rank, if possible); (3) physical aptitude scores; (4) medical examination results; and (5) extracurricular activities. The academies admit those candidates that have secured a nomination and who represent, in the opinion of academy officials, the best mixture of attributes (academic, physical, and leadership) necessary to ensure success at the academies and as military officers.

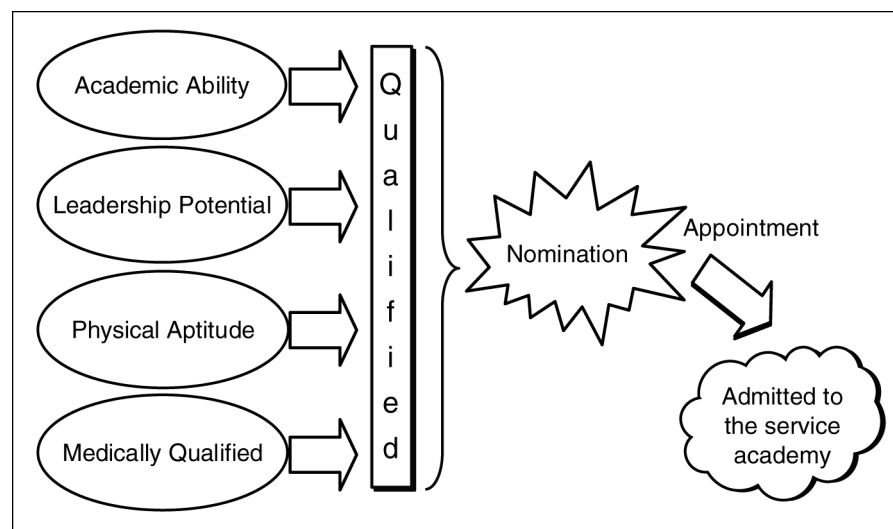
The military academies use a “whole person” method to assess potential candidates in three major areas: (1) academics, (2) physical aptitude, and (3) leadership potential. Each academy uses the same basic approach. Admissions assessments are weighted toward academic scores that include objective tests and high school performance. Leadership potential is measured by assessing athletic and non-athletic extracurricular activities. Subjective assessments of potential candidates in these major areas also contribute to final admissions “scores.” Such assessments

<sup>12</sup> 10 U.S.C. §§ 4346, 6958, and 9346; and Department of Defense, Directive 1322.22, *Service Academies*, § 4.3, August 24, 1994.

include interviews with prospective candidates, teacher/coach evaluations, and analyses of writing samples. Though medical criteria differ between services, the medical examinations are conducted according to the same standards, under a joint DOD Medical Examination Review Board that manages the medical examination process and records for applicants to all academies.<sup>13</sup>

Each academy is authorized to permit up to 60 foreign students to attend at any given time on a reimbursable basis by their country of origin.<sup>14</sup> This number does not count against the authorized student strength of the academies. The admission of foreign students is covered by separate policies and procedures. Our review was limited to the policies and procedures for admitting U.S. citizens to the academies. Figure 1 shows the basic steps in the admissions process for all U.S. applicants.

**Figure 1: Basic Steps in the Academy Admissions Process**



Source: GAO, based on DOD information.

<sup>13</sup> See Department of Defense, Directive 5154.25, *DOD Medical Examination Review Board*, June 11, 1981; Directive 6130.3, *Physical Standards for Appointment, Enlistment, or Induction*, December 15, 2000; and Instruction 6130.4, *Criteria and Procedure Requirements for Physical Standards for Appointment, Enlistment, or Induction in the Armed Forces*, December 14, 2000.

<sup>14</sup> 10 U.S.C. §§ 4344, 6957, and 9344.

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Students who are disenrolled from an academy after the start of their third year may be required to complete a period of active duty enlisted service of up to 4 years or may be required to reimburse the federal government for the cost of their education. Those who are disenrolled in their first 2 years do not incur an active service or reimbursement obligation.<sup>15</sup>

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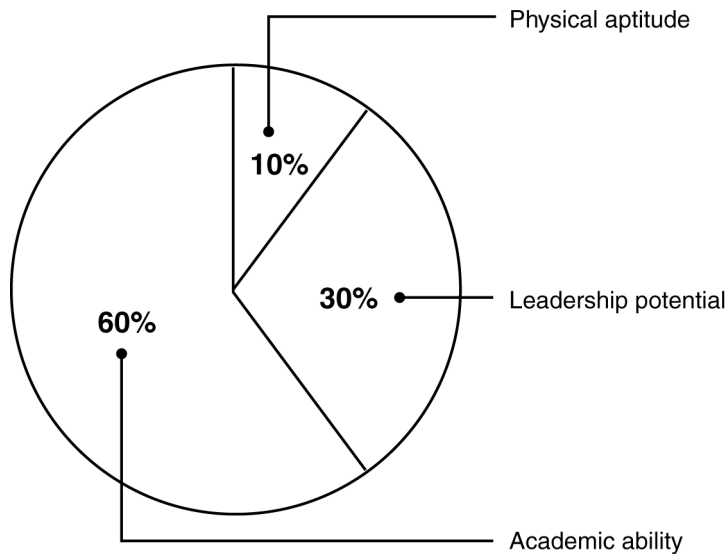
## United States Military Academy Admissions Process

The United States Military Academy's admissions evaluation considers academics, leadership, and physical aptitude. Academic considerations include above-average high school or college academic records as well as strong performance on SAT/ACT. Additionally, the Military Academy considers recommendations from English, mathematics, and science teachers. The leadership potential considers demonstrations of leadership and initiative in sports, school, community, or church activities and strong recommendations from faculty and community leadership and is a more subjective assessment of character. Physical aptitude is based on a scored standardized test. This test is made up of pull-ups for men or the flexed-arm hang for women, push-ups, standing long jump, basketball throw, and shuttle run. Figure 2 shows the areas considered and the weights assigned to each area in the U.S. Military Academy's whole person admissions process.

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<sup>15</sup> Department of Defense, Directive 1332.23, *Service Academy Disenrollment*, §§ 6.1 and 6.2, February 19, 1988.

**Figure 2: Areas and Their Weights Considered in the U.S. Military Academy's Whole Person Admissions Process**



Source: U.S. Military Academy.

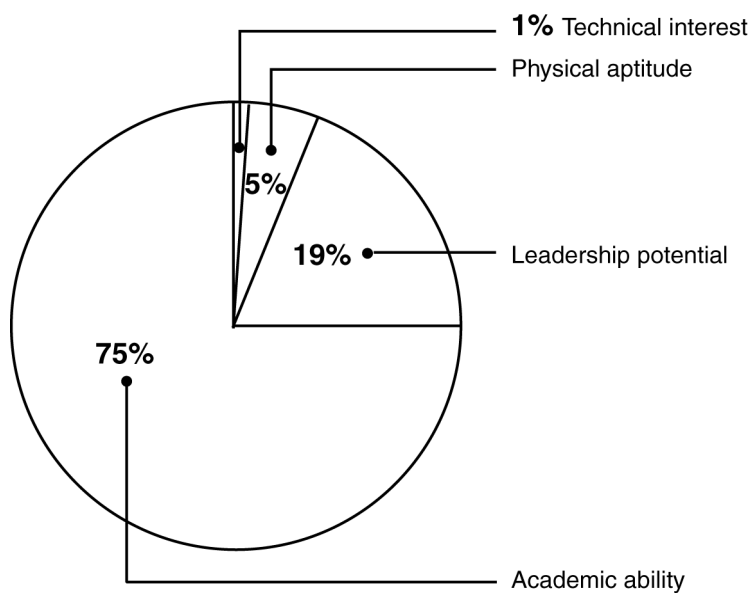
## United States Naval Academy Admissions Process

The United States Naval Academy's admissions evaluation considers academics, leadership, physical aptitude, and technical interest. Academic considerations include above-average high school or college academic records as well as strong performance on SAT/ACT. Additionally, the Naval Academy considers recommendations from English and mathematics teachers. Assessment of leadership potential represents a subjective evaluation of character in which the academy considers demonstrations of leadership in terms of extracurricular activities in sports, school, community, or church and strong recommendations from faculty and community leadership. Physical aptitude is based on a scored, standardized test consisting of pull-ups for men or the flexed-arm hang for women, push-ups, standing long jump, basketball throw, and shuttle run. Additionally, the Naval Academy considers the technical interest of a prospective student, which is measured through a questionnaire in the application packet and used to gauge interest in pursuing a technical degree. The intent of this requirement is to admit students that are interested in pursuing technical degrees, specifically nuclear and maritime engineering. The admissions board can also apply further points to an applicant's overall whole person score based on further consideration of an applicant's record, including such things as the results of the evaluation form filled out by the Naval Academy representative who interviewed the



applicant. Figure 3 shows the areas considered and the weights assigned to each area in the U.S. Naval Academy's whole person admissions process.

**Figure 3: Areas and Their Weights Considered in the U.S. Naval Academy's Whole Person Admissions Process**



Source: U.S. Naval Academy.

## United States Air Force Academy Admissions Process

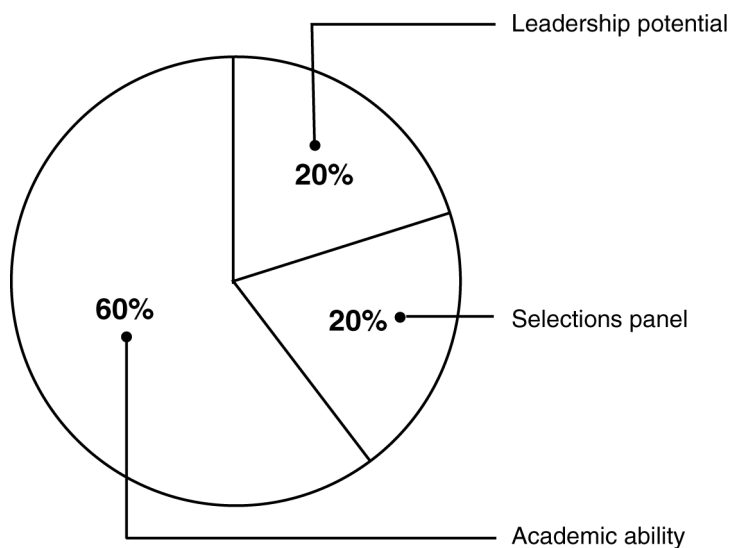
The United States Air Force Academy's admissions evaluation considers academics, leadership, and an assessment by the selections panel. Academic considerations include above-average high school or college academic records as well as strong performance on SAT/ACT. Additionally, the Air Force Academy considers recommendations from English and mathematics teachers. Under leadership potential, the academy considers extracurricular activities in sports, school, community, or church and strong recommendations from faculty and community leadership. Finally, the Air Force Academy Selections Panel makes an assessment of all potential students. This assessment is composed of a pass/fail score from the physical aptitude examination and the evaluation of the academy's liaison officer evaluation, made after interviewing the applicant. The physical aptitude examination is made up of pull-ups for men or the flexed-arm hang for women, push-ups, standing long jump, basketball throw, and shuttle run. The leadership potential area and the admissions board include the more subjective assessments of a potential

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student. Figure 4 shows the areas considered and the weights assigned to each area in the U.S. Air Force Academy's whole person admissions process.

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**Figure 4: Areas and Their Weights Considered in the U.S. Air Force Academy's Whole Person Admissions Process**



Source: U.S. Air Force Academy.

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## Nomination and Appointment of Candidates

The President of the United States alone appoints candidates to the academies.<sup>16</sup> Before receiving an appointment, all candidates must secure one or more nominations according to the following categories:<sup>17</sup>

- congressional (including a U.S. senator, representative, delegate, or the Vice President);
- service-connected (including, among others, children of disabled veterans, enlisted personnel in the active or reserve components, and students from ROTC programs or other designated honor school graduates); and

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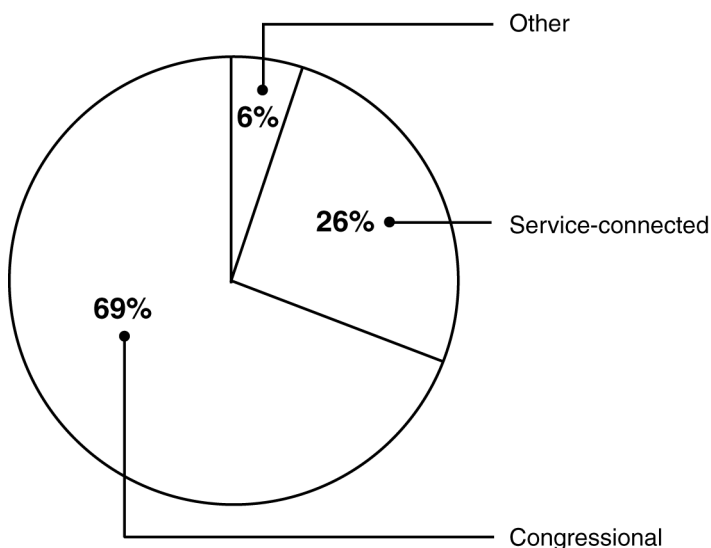
<sup>16</sup> 10 U.S.C. §§ 4341a, 6953, and 9341a.

<sup>17</sup> 10 U.S.C. §§ 4342, 6954, and 9342.

- other (including the academy superintendents' nominees and other nominees to bring the incoming class to full strength).

Figure 5 shows the approximate distribution of categories of academy nominations, based on the types and numbers of nominees per category allowed by law.

**Figure 5: Categories of Academy Nominations**



Source: GAO, from DOD sources.

Note: Percentages do not add to 100 due to rounding.

## Oversight of the Academies

Oversight of the academies is the responsibility of three principal organizations: OUSD/P&R, the service headquarters, and the board of visitors of each academy. According to Department of Defense Directive 1322.22 (*Service Academies*),<sup>18</sup> OUSD/P&R serves as the DOD focal point for matters affecting the academies and has responsibility to assess academy operations and establish policy and guidance for uniform oversight and management of the military academies. The military departments perform the primary DOD oversight function for their respective academies. The superintendent of each academy reports

<sup>18</sup> Department of Defense, Directive 1322.22, *Service Academies* § 5.1, August 24, 1994. DOD is currently revising this directive.

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directly to the uniformed head of his respective service (the Chiefs of Staff for the Army and the Air Force and the Chief of Naval Operations for the Navy), in accordance with the chain of command for each service. Each academy also has a board of visitors, mandated by law,<sup>19</sup> that is comprised of congressional members and presidential appointees. These boards focus attention and action on a wide range of operational and quality of life issues at the academies.

As educational institutions, the service academies are also overseen by several nongovernmental organizations that are outside DOD purview. Each academy undergoes periodic review by a higher-education accreditation body associated with its region of the country,<sup>20</sup> usually involving a full review every 10 years with an interim review every 5 years. The accreditation bodies review such areas as core curriculum, strategic planning, self-assessments, diversity of faculty and students, and faculty credentials. The athletic programs of the academies are also subject to periodic certification by the National Collegiate Athletic Association. This body reviews academy athletics in terms of such issues as finances and impact on the education mission of the academies. We limited our review of oversight of the academies to DOD organizations and the boards of visitors.

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## DOD Lacks a Complete Framework for Oversight of the Academies

The OUSD/P&R, the services, and the academies' boards of visitors conduct many oversight activities, but they lack a complete oversight framework. A complete oversight framework includes not only clear roles and responsibilities, but also performance goals and measures against which to objectively assess performance. Such elements embody the principles of effective management in which achievements are tracked in comparison with plans, goals, and objectives and the differences between actual performance and planned results are analyzed. Without formal goals and measures, oversight bodies do not have sufficient focus for their efforts and cannot systematically assess an organization's strengths and weaknesses nor identify appropriate remedies that would permit DOD to achieve the best value for the investment in the academies. In a prior

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<sup>19</sup> 10 U.S.C. §§ 4355, 6968, and 9355.

<sup>20</sup> Commission on Higher Education of the Middle States Association of Colleges and Schools (Military and Naval Academies) and Commission of Institutions of Higher Education of the North Central Association of Colleges and Schools (Air Force Academy).

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report,<sup>21</sup> GAO concluded that better external oversight of the academies was needed to provide useful guidance and suggestions for improvement. The report recommended that DOD improve oversight of the academies through such measures as establishing a focal point for monitoring academy issues in the Office of the Secretary of Defense and establishing guidance on uniform cost reporting.

OUSD/P&R and the services have established clear roles and responsibilities for oversight of the academies, with the former serving as the focal point for issues affecting all academies and the latter having direct oversight authority over their respective academies. DOD established guidance in 1994 for the oversight of the academies<sup>22</sup> and for uniform reporting of costs and resources.<sup>23</sup> OUSD/P&R is directly involved in those policy issues that affect all academies and require DOD-level attention and legislative matters. For example, the office was recently the DOD focal point on the issue of increasing authorized enrollment at the academies from 4,000 to 4,400. With respect to the academies, the office is chiefly concerned with monitoring the degree to which the services are meeting their goals for the accession of new officers.<sup>24</sup> The office also coordinates major studies that affect the academies, such as a November 1999 report on the career progression of minority and women officers.

The services are responsible for direct oversight of their respective academies; and the academies are treated similarly to major military commands. The superintendents of the academies are general/flag officers who report directly to the uniformed heads of their services (the Chiefs of Staff for the Army and the Air Force and the Chief of Naval Operations for the Navy). In addition to overseeing the academies' budget through the same approval process as a major command activity, the services oversee the academies' operations and performance primarily through the academies' goal of meeting service officer accession targets. The

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<sup>21</sup> U.S. General Accounting Office, *DOD Service Academies: Improved Cost and Performance Monitoring Needed*, [GAO/NSIAD-91-79](#) (Washington, D.C.: July 16, 1991).

<sup>22</sup> Department of Defense, Directive 1322.22, *Service Academies*, August 24, 1994. DOD is currently revising this directive.

<sup>23</sup> Department of Defense, Instruction 1025.4, *Service Academy Resources Report*, October 18, 1994.

<sup>24</sup> The academies are one of the sources for officers. The others include reserve officer training programs at colleges and universities, officer candidate/training schools, and direct commissioning programs.

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superintendents are responsible for meeting those targets and, in so doing, are given wide discretion in such areas as modifying their specific admissions objectives and the process for matching graduates with service assignments. The service headquarters use a number of mechanisms to oversee academy performance. For example, each service headquarters provides officer accession targets to the academies so that the assignment of graduates and the make up of incoming student classes can be modified as necessary. In addition to general numbers of officers, each service also has a number of specialty officer fields that need to be filled, and the services also monitor the extent to which the academies will be able to meet those accession goals.

The services also directly oversee the academies by requiring the superintendents to report on and discuss their operations. For example, the Air Force uses an annual forum of the most senior Air Force officers to focus on the Air Force Academy with respect to how it is meeting the needs of the operational Air Force. The Navy uses similar senior officer conferences and frequent interaction between the superintendent and Navy headquarters to conduct oversight. The Army uses the U.S. Military Academy Forum, comprised of senior Army officers, to address academy operations issues. The superintendents of the three academies also hold annual meetings to discuss issues common to all academies. These mechanisms have resulted in such academy actions as curriculum changes to increase the number of technical degree majors, increasing language requirements, and increasing the number of students attending the academies.

While OUSD/P&R and the services conduct a wide variety of oversight activity, there are few stated performance goals against which to measure academy operations and performance. Each of the academies has a strategic plan that is focused on providing quality military and professional training and education in order to commission highly capable junior officers. These plans are approved by the service headquarters but are not generally used by the services as benchmarks against which to measure academy performance, and they do not contain specific goals against which to measure student performance. OUSD/P&R is required to assess and monitor academy operations based on the information provided in annual reports it requires from the service secretaries.<sup>25</sup> These reports provide data on various aspects of performance, such as student

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<sup>25</sup> DOD Directive 1322.22 §§ 5.1.2 and 6.1.

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demographics and trends, student quality, admissions and attrition trends, compensation for students and faculty, leadership and honor systems, and incidents of indiscipline.

The reports provide OUSD/P&R and the services with information on current and past performance for academy operations, but apart from officer accession goals, neither OUSD/P&R nor the services have specific stated performance goals against which to compare the information provided in the assessment reports, thus they do not have an explicit basis for judging the adequacy of their performance. For example, the data collected by the academies show that graduation rates have increased in the last 10 years; however, there is no stated goal for a graduation rate against which to judge whether this rate of increase is adequate. Other data collected by the academies indicate that the percentage of females and minorities has fluctuated over the last 3 years, but apart from admissions targets used by the U.S. Military Academy, there are no stated goals against which to assess these trends. Additionally, academy officials regularly analyze data on student body performance to determine the extent to which admissions standards can be changed to affect student body performance. However, there are no stated goals for student body performance, apart from minimum graduation standards, that might help the academies and other oversight bodies assess overall student performance.

The oversight efforts of each academy's board of visitors are similarly limited by the absence of sufficient performance goals and measures. Each of the academies has a board of visitors, mandated by law<sup>26</sup> and comprised of Members of Congress and presidential appointees, that is outside the DOD chain of command. The boards have a broad legal mandate to inquire into all aspects of academy operations.<sup>27</sup> The boards meet several times a year to be briefed on and discuss academy operations and must conduct an annual visit to their respective academies. During these visits, the boards are briefed by academy staff on such issues as admissions, curriculum, recruiting, athletics, morale and welfare, and construction programs; they also interview students to obtain their perceptions of life at the academies. The boards also address inquiries to academy staff, which are usually followed up at subsequent meetings, and they make suggestions to improve operations or quality of life at the academies. For

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<sup>26</sup> 10 U.S.C. §§ 4355, 6968, and 9355.

<sup>27</sup> 10 U.S.C. §§ 4355, 6968, and 9355.

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example, boards of visitors have recommended increased recruiting of qualified minority applicants from various congressional districts and increased surveying of students on quality of life issues.

The boards submit annual reports to the President on the status of and issues at the academies but do not evaluate academy operations and performance against established performance goals. The boards of visitors do not have dedicated staffs to conduct their work, and though board members may inquire into any aspect of academy operations, the agenda is set largely by the briefings presented to the boards by academy officials. Academy officials with whom we spoke were generally satisfied with the oversight provided by the boards of visitors, though there were concerns at the Air Force Academy about poor attendance by board members during annual visits to the academy.

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## Whole Person Approach Allows Academies Flexibility to Admit Students with a Range of Qualifications

The academies do not grant waivers from academic criteria but do not have absolute minimum scores for admission. Under the whole person approach, the academies can admit some applicants whose academic scores are lower than might normally be competitive for admission, but who in their totality (academics, physical aptitude, and leadership potential) are deemed an acceptable risk and qualified to attend an academy. This admissions approach is consistent with the intent of the academies to admit students who also demonstrate leadership and initiative characteristics, which cannot be quantified by purely objective scoring methods.

When conducting their admissions processes, the academies do not set absolute minimum scores for academic ability. Rather, they establish a range of scores that would be considered competitive, based on past incoming class performance and academy research on the overall quality of the applicant pool. Prior to 2002, the Air Force Academy set absolute minimum academic scores, and a waiver was required to further consider an applicant who fell below that minimum, no matter how high his or her scores in the leadership area. However, the Air Force Academy no longer has absolute minimums and uses the same competitive range approach as the other academies. Under this approach, if an applicant's academic score is lower than the competitive range guidelines, academy officials have some flexibility to further consider the applicant. Academy officials will re-examine the applicant's record for information that might provide further insight about his or her academic achievement. For example, officials may contact high school teachers to inquire about the types and difficulty of the classes the applicant has been taking and his or her



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performance in those classes. Academy officials will also weigh the extent to which the leadership component of the applicant's whole person score offset the low component. The applicant is considered a risk and is evaluated through a deliberative process by academy officials on the basis of their judgment of whether the applicant is fully qualified and capable of succeeding at that academy. The subjective nature of this approach is consistent with the intent of the whole person concept, by which the academies want to admit students who also demonstrate leadership characteristics that cannot be quantified by purely objective scoring methods. Academy officials do not consider these judgments to constitute a waiver of academic standards, but rather a judicious assessment of the whole person. The process for assessing those applicants whose academic scores are lower than might normally be competitive is nonetheless similar to the former Air Force Academy process for granting waivers.

With over 10,000 applicants<sup>28</sup> for each academy each year and about 1,200 students admitted, the academic standards are high. Academy data show that the academic quality of the applicants has remained high over the past 4 years, and the competitive ranges for academic scores used by the academies have remained the same or have increased during this time. However, it is possible for students to be admitted whose academic scores were not as competitive as some other applicants who may not have been admitted. Senators, representatives, and delegates may submit up to 10 nominees for each student vacancy available to him or her per academy. They may choose to designate one as a principal nominee.<sup>29</sup> If an applicant receives a principal nomination and is in all other respects qualified, the academies must admit that applicant, even over an applicant on the same senator's, delegate's, or representative's nomination list with higher academic and/or whole person scores. The other nominated names become alternates for possible admission later in the admissions process.

Though some academies award credit for the extent to which an applicant surpasses the standards of the physical aptitude examination, there are minimum standards for the physical test that must be met. None of the academies uses a system of "waivers," except for medical conditions. An applicant can be waived for a medical condition, based on the deliberation and judgment of DOD medical personnel and the academy superintendent.

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<sup>28</sup> This includes the total number of students who applied and not the number that received a nomination.

<sup>29</sup> 10 U.S.C. §§ 4342, 6954, and 9342.

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For example, an applicant who is disqualified due to a vision condition may apply for and receive a waiver, based on subsequent surgical vision correction or determination by the academy superintendent that the applicant would be able to serve on active duty without the vision condition being a problem.

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## No Significant Differences in Admissions and Academy Performance between Various Groups of Students

In our review of the academy classes that started in 1998 (class of 2002), we found differences among various groups of students in their admissions scores and similar differences in their performance while at the academies, but the differences were not significant in magnitude. In terms of performance after admission to the academies,<sup>30</sup> differences between these student groups and the class as a whole were also not sizable. We reviewed data for the following distinct groups:<sup>31</sup>

- overall class,
- females,
- minorities,
- academy preparatory school graduates,
- recruited athletes,
- prior enlisted, and
- lower 30 percent of class by academic admissions scores.

For the class data we reviewed, minorities, academy preparatory school graduates, recruited athletes, and prior enlisted students all had lower average admissions scores than the average for the class as a whole, though these differences varied. The differences between groups and the class as a whole were not sizable, generally falling within 5 percent. Those differences that were statistically significant and outside the 5 percent range were still generally less than 10 percent of the class as a whole. Tables 3, 4, and 5, show the average admissions scores for the selected groups in the class that started in 1998 at the Military, Naval, and Air Force Academies, respectively. Although each academy uses the same fundamental whole person approach, they use different scales to calculate scores. Therefore, the academic and whole person scores cannot be compared across academies.

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<sup>30</sup> We used the following performance factors to measure student performance at the academies: cumulative grade point average, cumulative military performance average, order of merit (class rank), and graduation rate (for each group of students).

<sup>31</sup> Each of these groups can contain members from other groups.

**Table 3: Average Admissions Scores for the Selected Groups in the Class That Started in 1998 at the U.S. Military Academy**

Average admissions score	Overall (1,246)	Females (192)	Minorities (269)	Preparatory school graduates (184)	Recruited athletes (279)	Prior enlisted (31)	Lower 30 percent of admissions class (377)
Academic score	600	603	583	546 <sup>b</sup>	558 <sup>a</sup>	594	532 <sup>b</sup>
Whole person score	6,006	6,022	5,865	5,645 <sup>a</sup>	5,814	5,861	5,609 <sup>a</sup>

Source: GAO analysis, from Military Academy sources.

<sup>a</sup>Denotes a group average or percentage with a statistically significant difference greater than 5% from the overall average or percentage.

<sup>b</sup>Denotes a group average or percentage with a statistically significant difference greater than 10% from the overall average or percentage.

**Table 4: Average Admissions Scores for the Selected Groups in the Class That Started in 1998 at the U.S. Naval Academy**

Average admissions score	Overall (1,226)	Females (190)	Minorities (221)	Preparatory school graduates (146)	Recruited athletes (380)	Prior enlisted (76)	Lower 30 percent of admissions class (368)
Academic score	618	624	594	545 <sup>b</sup>	596	570 <sup>a</sup>	544 <sup>b</sup>
Whole person Score	65,732	65,719	63,769	61,254 <sup>a</sup>	64,233	62,256 <sup>a</sup>	61,404 <sup>a</sup>

Source: GAO analysis, from Naval Academy sources.

<sup>a</sup>Denotes a group average or percentage with a statistically significant difference greater than 5% from the overall average or percentage.

<sup>b</sup>Denotes a group average or percentage with a statistically significant difference greater than 10% from the overall average or percentage.

**Table 5: Average Admissions Scores for the Selected Groups in the Class That Started in 1998 at the U.S. Air Force Academy**

Average admissions score	Overall (1,216)	Females (190)	Minorities (229)	Preparatory school graduates (157)	Recruited athletes (312)	Prior enlisted (44)	Lower 30 percent of admissions class (366)
Academic Score	3,202	3,216	3,123	3,112	3,043	3,188	2,863 <sup>b</sup>
Whole person Score	798	805	782	774	773	792	751 <sup>a</sup>

Source: GAO analysis, from Air Force Academy sources.

<sup>a</sup>Denotes a group average or percentage with a statistically significant difference greater than 5% from the overall average or percentage.

<sup>b</sup>Denotes a group average or percentage with a statistically significant difference greater than 10% from the overall average or percentage.

Of those students in the lower 30 percent of the class in terms of academic admissions scores, about 44 percent were recruited athletes, between 25 and 31 percent were minorities, and between 20 and 34 percent were preparatory school graduates. Table 6 shows the percentage of the selected groups making up the lower 30 percent of the classes in terms of their academic admissions scores, by academy.

**Table 6: Percentage of the Selected Groups Making Up the Lower 30 percent of the Classes in Terms of Their Academic Admissions Scores, by Academy**

Numbers in percent

Academy	Females	Minorities	Preparatory school graduates	Recruited athletes	Prior enlisted
Military Academy	16	31	34	44	3
Naval Academy	13	29	32	45	13
Air Force Academy	14	25	20	44	5

Source: GAO analysis, from DOD sources.

Note: Numbers do not add to 100 percent because each of the groups can contain members of another group.

We also found differences in performance after admission to the academies between selected groups and the class as a whole. For example, females at the Naval Academy had a lower graduation rate than the class as a whole, but they had a higher average academic grade point average (cumulative GPA) than the class as a whole and higher average class rank (order of merit). The differences in performance between the selected groups and the class as a whole were not sizable, generally falling within 5 percent. Those differences that were statistically significant and outside the 5 percent range were still generally less than 10 percent of the class as a whole. Tables 7, 8, and 9 show how the selected groups performed at the Military, Naval, and Air Force Academies, respectively. See appendix II for further information on comparisons of performance by defined student groups.

**Table 7: Student Performance for Selected Groups at the U.S. Military Academy**

Performance score	Overall (1,246)	Females (192)	Minorities (269)	Preparatory school graduates (184)	Recruited athletes (279)	Prior enlisted (31)	Lower 30 percent of admissions class (377)
Average cumulative GPA	2.99	2.99	2.82	2.61 <sup>a</sup>	2.81	3.14	2.66 <sup>a</sup>
Average cumulative MPA	3.28	3.26	3.21	3.26	3.20	3.37	3.21
Average order of merit	3.03	3.04	2.86 <sup>a</sup>	2.75 <sup>a</sup>	2.90	3.06	2.78 <sup>a</sup>
Graduation rate	78%	76%	71% <sup>a</sup>	72%	76%	71%	71% <sup>a</sup>

Source: GAO analysis, from Military Academy sources.

<sup>a</sup>Denotes a group average or percentage with a statistically significant difference greater than 5% from the overall average or percentage.

<sup>b</sup>Denotes a group average or percentage with a statistically significant difference greater than 10% from the overall average or percentage.

**Table 8: Student Performance for Selected Groups at the U.S. Naval Academy**

Performance score	Overall (1,226)	Females (190)	Minorities (221)	Preparatory school graduates (146)	Recruited athletes (380)	Prior enlisted (76)	Lower 30 percent of admissions class (368)
Average cumulative GPA	2.97	3.01	2.82 <sup>a</sup>	2.67 <sup>a</sup>	2.86	3.02	2.67 <sup>a</sup>
Average cumulative MPA	3.12	3.16	3.02	2.99	3.08	3.19	3.00
Average order of merit	489	456 <sup>a</sup>	590 <sup>b</sup>	658 <sup>b</sup>	551 <sup>b</sup>	453	661 <sup>b</sup>
Graduation rate	80%	71% <sup>b</sup>	75%	77%	79%	72%	76% <sup>a</sup>

Source: GAO analysis, from Naval Academy sources.

<sup>a</sup>Denotes a group average or percentage with a statistically significant difference greater than 5% from the overall average or percentage.

<sup>b</sup>Denotes a group average or percentage with a statistically significant difference greater than 10% from the overall average or percentage.

**Table 9: Student Performance for Selected Groups at the U.S. Air Force Academy**

<b>Performance score</b>	<b>Overall (1,216)</b>	<b>Females (190)</b>	<b>Minorities (229)</b>	<b>Preparatory school graduates (157)</b>	<b>Recruited athletes (312)</b>	<b>Prior enlisted (44)</b>	<b>Lower 30 percent of admissions class (366)</b>
Average cumulative GPA	2.93	2.97	2.78 <sup>a</sup>	2.61 <sup>b</sup>	2.79	2.89	2.64 <sup>a</sup>
Average cumulative MPA	2.90	2.93	2.89	2.83	2.81	2.93	2.84
Average order of merit	469	440	545 <sup>b</sup>	663 <sup>b</sup>	568 <sup>b</sup>	499	646 <sup>b</sup>
Graduation rate	74%	75%	71%	69%	71%	66%	65% <sup>b</sup>

Source: GAO analysis, from Air Force Academy sources.

<sup>a</sup>Denotes a group average or percentage with a statistically significant difference greater than 5% from the overall average or percentage.

<sup>b</sup>Denotes a group average or percentage with a statistically significant difference greater than 10% from the overall average or percentage.

Some groups—such as minorities, preparatory school graduates, recruited athletes, and students in the lower 30 percent of their class in terms of academic admissions scores—performed at lower levels on average in all categories than the class as a whole, but these differences varied between academies and by category and were not sizable. For example, one of the lowest average academic grade point averages for the groups we reviewed was 2.61 and the average for the class as a whole at that academy was 2.93. A 2.0 grade point average is required to graduate for academic and military averages. Similarly, the lowest graduation rate for the class we reviewed was 65 percent for the students in the lower 30 percent of their class in terms of academic admissions scores at one academy. The average graduation rate for the class as a whole was 74 percent.

Our analysis of data for the students who entered the academies in 1998 (class of 2002) indicates that admissions scores are generally good predictors of performance at the academies. Of the admissions scores, the academic component of the whole person scores was often the best predictor of academic performance at the academies, and the whole person scores in their entirety were often the best predictors of military performance at the academies. Both academic and whole person admissions scores were good predictors of class rank. In general, whole person admissions scores were better predictors of graduation rate than the academic admissions scores alone.

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## Conclusion

Although the service academies receive oversight from a number of organizations and have established guidance for that oversight that includes the reporting of a wide range of data on academy operations, without clear and agreed-upon performance goals, there is no objective yardstick against which to fully measure academy performance and operations, apart from the officer accessions goals currently used. Establishment of such performance goals is consistent with the principles of effective management and would enhance the quality of oversight already performed by OUSD/P&R, the services, and the academy boards of visitors, permitting them to more clearly note those areas in which the academies excel, highlight areas where improvement is warranted, and achieve the best value for the nation's investment in the academies.

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## Recommendation for Executive Action

To improve DOD oversight of the operations and performance of the service academies, we recommend that the Secretary of Defense direct the OUSD/P&R, in concert with the services, to further enhance performance goals and measures whereby the information required in annual assessment reports can be better evaluated. These performance goals should be developed for each academy and, where appropriate, in common for all academies. The specific goals should coincide with performance elements agreed upon by the services and OUSD/P&R and might include such things as graduation rates, demographic composition of student classes, assessments of officer performance after graduation, and other performance information already collected by the academies, including performance characteristics of various groups of students.

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## Agency Comments

In comments on a draft of this report, DOD agreed with our recommendation to further enhance performance goals and measures for the service academies whereby the information required in annual assessment reports can be better evaluated. DOD further stated that the Office of the Under Secretary of Defense for Personnel and Readiness OUSD/P&R will (1) monitor development of improved goals and measures by the service academies, to include facilitating the development of common performance goals where appropriate and (2) update DOD

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Directive 1322.22, *Service Academies*, as required. DOD's written comments are included in their entirety in appendix III.

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We are sending copies of this report to the appropriate congressional committees; the Secretaries of Defense, the Army, the Navy, and the Air Force; and the Director, Office of Management and Budget. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

Please contact me on (202) 512-5559 if you or your staff have any questions concerning this report. Key contributors are listed in appendix V.

A handwritten signature in black ink that reads "Derek B. Stewart". The signature is written in a cursive, flowing style.

Derek B. Stewart  
Director  
Defense Capabilities and Management



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# Appendix I: Scope and Methodology

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To assess the extent to which DOD oversees the service academies' operations and performance, we interviewed officials at the Office of the Under Secretary of Defense for Personnel and Readiness; the Army, Navy, and Air Force headquarters; and the U.S. Military, U.S. Naval, and U.S. Air Force Academies. We reviewed documents on service and DOD oversight criteria and structures, reporting mechanisms, academy strategic plans, academy annual reports on operations and performance, boards of visitors' minutes and reports, and superintendents conference reports. We also attended a U.S. Naval Academy Board of Visitors meeting at the Naval Academy in December 2002 and a U.S. Military Academy Board of Visitors meeting in Washington, D.C., in March 2003. Additionally, we reviewed criteria on the principles of effective management, such as those found in *Standards for Internal Control in the Federal Government*.<sup>1</sup>

To assess the extent to which academy applicants are granted waivers from academic admissions criteria, we interviewed officials from the Military, Naval, and Air Force Academies and reviewed documents on admissions policies, standards, and practices. We discussed with academy officials their execution of the whole person approach, including how they assess applicants' records, the weights applied to the various components of the whole person score (academic, leadership, and physical aptitude), and the justification for points given to various aspects of an applicant's scores. We also reviewed data from each academy on trends in academic admissions scores. During site visits to each academy, we observed the evaluation of applicant packages for the incoming class of 2007 by academy officials, including how the whole person approach was applied for admissions scores. We also observed meetings of senior officials at each academy where applicants' records were evaluated and final admissions decisions were made.

To assess the extent to which admissions and academy performance scores differ between various groups of students, we analyzed admissions scores and academy performance scores for all students who started at the three academies in 1998 and should have graduated in 2002. This represented the most recent group of students for which complete data were available. We requested and received from each academy a database that included data on both admission scores and information about students' performance while attending the academy. We did not

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<sup>1</sup> U.S. General Accounting Office, *Standards for Internal Control in the Federal Government*, [GAO/AIMD-00-21.3.1](#) (Washington, D.C.: November 1999).

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independently assess data reliability, but we obtained assurances about data completeness, accuracy, and reliability from academy officials responsible for maintaining data at each academy. We analyzed these data separately for each academy since each academy calculated admission scores or performance scores somewhat differently. We identified six major groups of students common to all academies: females, minorities, academy preparatory school graduates, recruited athletes, prior enlisted personnel, and students whose academic admission scores fell in the lower 30 percent of the entering class (we chose the latter group in order to capture information on students whose academic admissions scores may have been lower than might normally be competitive). Information specifying a student's membership in each of these groups was provided in the databases from the academies. To assess differences, we first compared the mean performance scores for each group to the overall mean for each performance measure for the entire class. See appendix II for details on the results of our analysis of the relationships between admissions and performance scores.

In addition, we assessed the relationship between admissions scores and performance at the academies by using the whole person admission score and the academic component of the admissions score. We estimated the effects of those scores on four measures of performance for students at the academies: (1) cumulative grade point average (GPA), (2) cumulative military performance average (MPA), (3) order of merit (class standing), and (4) graduation rate. We used cumulative GPA upon graduation as an indicator of academic performance at the academies and military performance averages upon graduation as an indicator of military performance at the academies. Order of merit is a measure of class standing at each academy that combines academic and military grade performance and is a final rank for each graduating student. At both the Air Force Academy and the Naval Academy, order of merit is an actual class rank number. At the Military Academy, however, order of merit could range between 0 and 4.0 and was given on the same scale as grade point averages. For each academy, we analyzed the association of both the academic component scores and whole person admission scores with each of the performance scores using regression models. Relationships between the admissions scores and cumulative GPA, cumulative MPA, and order of merit were estimated using linear regression models. The relationships between these two admissions scores and the likelihood of graduating were estimated using logistic regression models. See appendix II for more details on the results of those analyses.

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Issues related to alleged sexual assaults at the academies fell outside the scope of our objectives. We conducted our work from October 2002 through May 2003 in accordance with generally accepted government auditing standards.

# Appendix II: Results of Statistical Analysis of Class of 2002 Admissions and Academy Performance Scores

This appendix provides the results of our analyses of both admissions and performance scores for the class of 2002 at the U.S. Military Academy, the U.S. Naval Academy, and the U.S. Air Force Academy.

## Admissions and Performance Scores

We obtained data from all three service academies that included information on admissions scores (academic and whole person), performance scores while at the academy (cumulative academic grade point average, military performance average, and order of merit), attrition information where applicable, and various demographic characteristics for all students entering each academy in 1998. Table 10 shows the minimum, maximum and average admissions and performance scores for students at each academy. Table 11 shows graduation rates at each academy.

**Table 10: Admissions and Academy Performance Scores for the Class of 2002**

	Military Academy			Naval Academy			Air Force Academy		
	Average	Min	Max	Average	Min	Max	Average	Min	Max
Academic Admissions score	600	430	791	618	440	788	3,202	2,492	4,005
Whole person score	6,006	4,587	7,188	65,732	51,651	82,250	798	655	931
Cum. GPA	2.99	1.97	4.19	2.97	2.03	4.00	2.93	2.06	3.97
Cum. MPA	3.28	2.09	3.99	3.12	2.17	3.85	2.90	2.32	3.92
Order of merit	3.03	1.30	3.92	489	1	977	469	1	929

Source: GAO analysis, from DOD sources.

Note: For the U.S. Air Force Academy, an additional step during the selection panel process results in a lower whole person score than the component parts.

**Table 11: Number of Students Graduating and Graduation Rates for the Class of 2002**

	Military Academy		Naval Academy		Air Force Academy	
	Number	Percent	Number	Percent	Number	Percent
Graduation rate	968	78%	977	80%	894	74%

Source: GAO analysis, from DOD sources.

Next, we compared the average admissions scores, performance scores, and graduation rates of the six student groups to these overall scores and rates. Tables 12, 13, and 14 show the average admission scores and the four measures of student performance for the overall sample, and for the six student groups, for each of the academies. Because we have data for the population of students in this class and there is no sampling error, the

**Appendix II: Results of Statistical Analysis of  
Class of 2002 Admissions and Academy  
Performance Scores**

standard error of these estimates are small and differences that could be considered small in magnitude may in fact be statistically significant. In the tables below, differences that are statistically significant ( $p < .05$ ) and exceed 5 percent are considered meaningful and noted, though such differences may not be practically significant when compared with class performance requirements overall. For example, at the Naval Academy the overall average academic admissions score is 618, 5 percent of 618 is about 31. Only those group average academic admissions scores that are statistically significant and more than 31 points below 618 are noted with an “a.” Differences that are greater than 10 percent are marked with a “b.”

**Table 12: Admissions and Performance Scores for the Class of 2002 at the U.S. Military Academy**

	Overall (1,246)	Females (192)	Minorities (269)	Prep school graduates (184)	Recruited athletes (279)	Prior enlisted personnel (31)	Lower 30 percent of admissions class (377)
Academic admissions	600	603	583	546 <sup>b</sup>	558 <sup>a</sup>	594	532 <sup>b</sup>
Whole person admissions score	6,006	6,022	5,865	5,645 <sup>a</sup>	5,814	5,861	5,609 <sup>a</sup>
<b>Four performance measures</b>							
1. Cumulative GPA	2.99	2.99	2.82	2.61 <sup>a</sup>	2.81	3.14	2.66 <sup>a</sup>
2. Cumulative MPA	3.28	3.26	3.21	3.26	3.20	3.37	3.21
3. Order of merit	3.03	3.04	2.86 <sup>a</sup>	2.75 <sup>a</sup>	2.90	3.06	2.78 <sup>a</sup>
4. Graduation rate	78%	76%	71% <sup>a</sup>	72%	76%	71%	71% <sup>a</sup>

Source: GAO analysis, from Military Academy sources.

<sup>a</sup>Denotes a group average or percentage with a statistically significant ( $p < .05$ ) difference greater than 5% from the overall average or percentage.

<sup>b</sup>Denotes a group average or percentage with a statistically significant ( $p < .05$ ) difference greater than 10% from the overall average or percentage.

**Appendix II: Results of Statistical Analysis of  
Class of 2002 Admissions and Academy  
Performance Scores**

**Table 13: Admissions and Performance Scores for the Class of 2002 at the U.S. Naval Academy**

	Overall (1,226)	Females (190)	Minorities (221)	Prep school graduates (146)	Recruited athletes (380)	Prior enlisted personnel (76)	Lower 30 percent of admissions class (368)
Academic admissions	618	624	594	545 <sup>b</sup>	596	570 <sup>a</sup>	544 <sup>b</sup>
Whole Person admissions score	65,732	65,719	63,769	61,254 <sup>a</sup>	64,233	62,256 <sup>a</sup>	61,404 <sup>a</sup>
<b>Four performance measures</b>							
1. Cumulative GPA	2.97	3.01	2.82 <sup>a</sup>	2.67 <sup>a</sup>	2.86	3.02	2.67 <sup>a</sup>
2. Cumulative MPA	3.12	3.16	3.02	2.99	3.08	3.19	3.00
3. Order of merit	489	456 <sup>a</sup>	590 <sup>b</sup>	658 <sup>b</sup>	551 <sup>b</sup>	453	661 <sup>b</sup>
4. Graduation rate	80%	71% <sup>b</sup>	75%	77%	79%	72%	76% <sup>a</sup>

Source: GAO analysis, from Naval Academy sources.

<sup>a</sup>Denotes a group average or percentage with a statistically significant (p<.05) difference greater than 5% from the overall average or percentage.

<sup>b</sup>Denotes a group average or percentage with a statistically significant (p<.05) difference greater than 10% from the overall average or percentage.

**Table 14: Admissions and Performance Scores for the Class of 2002 at the U.S. Air Force Academy**

	Overall (1,216)	Females (190)	Minorities (229)	Prep school graduates (157)	Recruited athletes (312)	Prior enlisted personnel (44)	Lower 30 percent of admissions class (366)
Academic admissions	3,202	3,216	3,123	3,112	3,043	3,188	2,863 <sup>b</sup>
Whole Person admissions score	798	805	782	774	773	792	751 <sup>a</sup>
<b>Four performance measures</b>							
1. Cumulative GPA	2.93	2.97	2.78 <sup>a</sup>	2.61 <sup>b</sup>	2.79	2.89	2.64 <sup>a</sup>
2. Cumulative MPA	2.90	2.93	2.89	2.83	2.81	2.93	2.84
3. Order of merit	469	440	545 <sup>b</sup>	663 <sup>b</sup>	568 <sup>b</sup>	499	646 <sup>b</sup>
4. Graduation rate	74%	75%	71%	69%	71%	66%	65% <sup>b</sup>

Source: GAO analysis, from Air Force Academy sources.

<sup>a</sup>Denotes a group average or percentage with a statistically significant (p<.05) difference greater than 5% from the overall average or percentage.

<sup>b</sup>Denotes a group average or percentage with a statistically significant (p<.05) difference greater than 10% from the overall average or percentage.

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## Relationships between Admissions and Performance Scores

Regression models were used to assess the relationship between admission scores and performance at the three academies. We used linear regression models to examine relationships between admission scores and GPA, MPA, and order of merit. To examine the relationship between admission scores and the likelihood of graduating we used a logistic regression model. Both the academic admission score and the whole person score were included as independent variables in each model. We estimated separate regression models for each academy. The results of these regressions are shown in tables 15 and 16.

The tables show both regression coefficients and standardized coefficients. In general, regression coefficients are interpreted as the predicted change in the dependent variable for every unit change in the independent variables. Here, we have scaled the admissions scores so that the regression coefficients in the table can be interpreted as the predicted change in the relevant measure of success for every 100-point increase in the academic or “whole person” admission score. For example, overall at the U.S. Air Force Academy, for every 100-point increase in the academic admission score we expect to see a 0.06 increase in GPA. For every 100-point increase in the “whole person” score, we expect to see a 0.18 increase in GPA. Both relationships are statistically significant, meaning that both the academic score and the “whole person” score are significant predictors of cumulative GPA at the academy.

We cannot compare the size of these coefficients across the three academies, though, because the academic and “whole person” scores are on different scales. Because the size of the unstandardized regression coefficients is affected by the scale of the independent variables (the admissions scores), we use standardized regression coefficients to compare them. These appear in parentheses in the tables. To estimate these coefficients, all of the coefficients are standardized by dividing the regression coefficient by the ratio of the standard deviation of the success measure to standard deviation of the admission score. The standardized regression coefficients, therefore, represent the change in the measure of success for each change of one standard deviation in admission scores. Using standardized coefficients, one can conclude that the coefficient that is larger in magnitude has a greater effect on the measures of success. Using the same U.S. Air Force Academy example, we see that while the relationships between both academic and “whole person” scores and GPA are significant, the relationship between academic scores and GPA is actually a stronger one than the relationship between the “whole person” score and GPA. Overall, while the academic scores are often a better predictor of academic performance at the academies (GPA), the “whole

person” scores are often better predictors of military performance (MPA). The academic admissions scores have no effect on MPA at the Military and Air Force Academies and the whole person scores, not the academic admissions scores, predict likelihood of graduating at all three academies.

We also used the  $R^2$  statistic to estimate how much of the variation in each performance score can be explained by both academic and whole person admission scores. The admission scores explained about 30 percent of the variation in GPAs at both the Naval and Air Force Academies and about 40 percent of the variation in GPAs at the Military Academy. The admission scores explained between a quarter and a third of the variation in order of merit across the three academies. However, admission scores did not explain as much of the variation in either military performance scores or graduation rates. Therefore, while both types of admission scores are significant predictors of performance at the academy, they only explain between 7 and 40 percent of the variation in performance at the academies, and only a very small percentage of the variability in the likelihood of graduating. Other factors not studied here, such as the military training and academic environment students experience at the academies, may contribute to performance more than just students’ admissions scores do.

**Table 15: Regression Coefficients (Standardized Coefficients) from Linear Regression Models Testing Correlations between Academic and Whole Person Admissions Scores with Cumulative GPA, Cumulative MPA, and Order of Merit for the Class of 2002 at the Service Academies**

	Cumulative GPA		Cumulative MPA		Order of Merit	
	Academic admission score	Whole person score	Academic admission score	Whole person score	Academic admission score	Whole person score
Military Academy class overall	.42 (.56) <sup>a</sup>	.01 (.09)	-.04 (-.11)	.03 (.44) <sup>a</sup>	.18 (.34) <sup>a</sup>	.02 (.29) <sup>a</sup>
	$R^2 = .42$		$R^2 = .12$		$R^2 = .37$	
Naval Academy class overall	.28 (.38) <sup>a</sup>	.002 (.18)	.09 (.18) <sup>a</sup>	.001 (.19) <sup>a</sup>	-157.62 (-.35) <sup>a</sup>	-1.13 (-.17) <sup>a</sup>
	$R^2 = .30$		$R^2 = .13$		$R^2 = .26$	
Air Force Academy class overall	.06 (.38) <sup>a</sup>	.18 (.20) <sup>a</sup>	-.01 (-.14)	.21 (.37) <sup>a</sup>	-27.89 (-.30) <sup>a</sup>	-147.29 (-.25) <sup>a</sup>
	$R^2 = .31$		$R^2 = .07$		$R^2 = .29$	

Source: GAO analysis, from DOD sources.

Note: Because of the difference in scales for admissions scores between academies, the size of the coefficients cannot be compared across academies.

<sup>a</sup> Denotes statistically significant ( $p < .05$ ) relationships.



**Appendix II: Results of Statistical Analysis of  
Class of 2002 Admissions and Academy  
Performance Scores**

**Table 16: Regression Coefficients (Standardized Coefficients) from Logistic Regression Models Testing Correlations Between Academic and Whole Person Admissions Scores and the Likelihood of Graduation for the Class of 2002 at the Service Academies**

	Graduation	
	Academic admission score	Whole person score
Military Academy class overall	-.11 (-.03)	.11 (.24) <sup>a</sup>
	R <sup>2</sup> = .02	
Naval Academy class overall	-.36 (-.13)	.01 (.23) <sup>a</sup>
	R <sup>2</sup> = .01	
Air Force Academy class overall	.01 (.02)	.75 (.20) <sup>a</sup>
	R <sup>2</sup> = .03	

Source: GAO analysis, from DOD sources.

Note: Because of the difference in scales for admissions scores between academies, the size of the coefficients cannot be compared across academies.

<sup>a</sup> Denotes statistically significant (p<.05) relationships.

# Appendix III: Comments from the Department of Defense



PERSONNEL AND  
READINESS

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
4000 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-4000

AUG 25 2003



Mr. Derek B. Stewart  
Director, Defense Capabilities and Management  
United States General Accounting Office  
Washington, D.C. 20548

Dear Mr. Stewart:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, GAO-03-1000, "MILITARY EDUCATION: DoD Needs to Enhance Performance Goals and Measures to Improve Oversight of Military Academies," dated July 31, 2003 (GAO Code 350270).

The Department concurs with the report's conclusion that the Office of the Under Secretary of Defense for Personnel and Readiness, in concert with the Services, should further enhance performance goals and measures for the Service academies whereby the information required in annual assessment reports can be better evaluated.

Numerous current guidelines regulate the performance of the Service academies. However, the lack of specific performance goals in precise areas such as graduation or attrition rates prevents full analysis of the annual data collected. Therefore, performance goals should be developed for each academy and, where appropriate, in common for all academies to address these, and potentially other, areas of interest.

The enclosure addresses the specific recommendation made by the GAO. The Department appreciates the opportunity to comment on the draft report.

Sincerely,

Charles S. Abell  
Principal Deputy

Enclosure:  
As stated



GAO-03-1000/GAO CODE 350270

**“MILITARY EDUCATION: DOD NEEDS TO ENHANCE PERFORMANCE GOALS  
AND MEASURES TO IMPROVE OVERSIGHT OF  
MILITARY ACADEMIES”**

**DEPARTMENT OF DEFENSE COMMENTS  
TO THE RECOMMENDATION**

**RECOMMENDATION:** The GAO recommended that the Secretary of Defense direct the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD/P&R), in concert with the Services, to further enhance performance goals and measures whereby the information required in annual assessment reports can be better evaluated. These performance goals should be developed for each academy and, where appropriate, in common for all academies. The specific goals should coincide with performance elements agreed upon by the Services and OUSD/P&R and might include such things as graduation rates, demographic composition of student classes, assessments of officer performance after graduation, and other performance information already collected by the academies, including performance characteristics of various groups of students. (Page 32/Draft Report).

**DoD RESPONSE:** Concur. The development of better measures by OUSD(P&R) in conjunction with the Military Departments to assist in assessment of the Service academies will enhance performance goals and allow more useful evaluation of the information currently required in the annual assessment reports. OUSD(P&R) will monitor development of improved goals and measures by the Service academies, to include facilitating the development of common performance goals where appropriate, and will update Department of Defense Directive 1322.22, *Service Academies*, as required. ECD is March 2004.

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# Appendix IV: GAO Contact and Staff Acknowledgments

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## GAO Contact

Sandra F. Bell (202) 512-8981

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## Staff Acknowledgments

In addition to the individual named above, Gabrielle M. Anderson, Herbert I. Dunn, Brian G. Hackett, Joseph W. Kirschbaum, Wendy M. Turenne, and Susan K. Woodward also made key contributions to this report.

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# Related GAO Products

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*Military Education: DOD Needs to Align Academy Preparatory Schools' Mission Statements with Overall Guidance and Establish Performance Goals.* [GAO-03-1017](#). Washington, D.C.: September 2003.

*Military Education: Student and Faculty Perceptions of Student Life at the Military Academies.* [GAO-03-1001](#). Washington, D.C.: September 2003.

*DOD Service Academies: Problems Limit Feasibility of Graduates Directly Entering the Reserves.* [GAO/NSIAD-97-89](#). Washington, D.C.: March 24, 1997.

*DOD Service Academies: Comparison of Honor and Conduct Adjudicatory Processes.* [GAO/NSIAD-95-49](#). Washington, D.C.: April 25, 1995.

*DOD Service Academies: Academic Review Processes.* [GAO/NSIAD-95-57](#). Washington, D.C.: April 5, 1995.

*DOD Service Academies: Update on Extent of Sexual Harassment.* [GAO/NSIAD-95-58](#). Washington, D.C.: March 31, 1995.

*Coast Guard: Cost for the Naval Academy Preparatory School and Profile of Minority Enrollment.* [GAO/RCED-94-131](#). Washington, D.C.: April 12, 1994.

*Military Academy: Gender and Racial Disparities.* [GAO/NSIAD-94-95](#). Washington, D.C.: March 17, 1994.

*DOD Service Academies: Further Efforts Needed to Eradicate Sexual Harassment.* [GAO/T-NSIAD-94-111](#). Washington, D.C.: February 3, 1994.

*DOD Service Academies: More Actions Needed to Eliminate Sexual Harassment.* [GAO/NSIAD-94-6](#). Washington, D.C.: January 31, 1994.

*Academy Preparatory Schools.* [GAO/NSIAD-94-56R](#). Washington, D.C.: October 5, 1993.

*Air Force Academy: Gender and Racial Disparities.* [GAO/NSIAD-93-244](#). Washington, D.C.: September 24, 1993.

*Military Education: Information on Service Academies and Schools.* [GAO/NSIAD-93-264BR](#). Washington, D.C.: September 22, 1993.

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*Naval Academy: Gender and Racial Disparities.* [GAO/NSIAD-93-54](#). Washington, D.C.: April 30, 1993.

*DOD Service Academies: More Changes Needed to Eliminate Hazing.* [GAO/NSIAD-93-36](#). Washington, D.C.: November 16, 1992.

*DOD Service Academies: Status Report on Reviews of Student Treatment.* [GAO/T-NSIAD-92-41](#). Washington, D.C.: June 2, 1992.

*Service Academies: Historical Proportion of New Officers During Benchmark Periods.* [GAO/NSIAD-92-90](#). Washington, D.C.: March 19, 1992.

*DOD Service Academies: Academy Preparatory Schools Need a Clearer Mission and Better Oversight.* [GAO/NSIAD-92-57](#). Washington, D.C.: March 13, 1992.

*Naval Academy: Low Grades in Electrical Engineering Courses Surface Broader Issues.* [GAO/NSIAD-91-187](#). Washington, D.C.: July 22, 1991.

*DOD Service Academies: Improved Cost and Performance Monitoring Needed.* [GAO/NSIAD-91-79](#). Washington, D.C.: July 16, 1991.

*Review of the Cost and Operations of DOD's Service Academies.* [GAO/T-NSIAD-90-28](#). Washington, D.C.: April 4, 1990.

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