

- » Checking out the different versions of the ASVAB
- » Figuring out what each subtest covers
- » Computing the Armed Forces Qualification Test (AFQT) score
- » Taking the ASVAB again

## Chapter **1**

# Putting the ASVAB under a Microscope

The Armed Services Vocational Aptitude Battery (ASVAB) consists of ten tests that cover subjects ranging from general science principles to vocabulary. Your ASVAB test results determine whether you qualify for military service and, if so, which jobs you qualify for. The ASVAB isn't an IQ test. The military isn't trying to figure out how smart you are. The ASVAB specifically measures your ability to be trained to do a specific job. Although you don't see the same questions in this book that appear on the test — ASVAB materials are tightly controlled items — you do see the same concepts. (Read that as “Don't waste your time memorizing the answers to these questions. Focus on the concepts instead.”)

The famous Chinese general Sun Tzu said, “Know your enemy.” To develop an effective plan of study (check out Chapter 3) and score well on the ASVAB, it's important to understand how the ASVAB is organized and how the military uses the scores from the subtests. This chapter describes the different versions of the ASVAB, the organization of the subtests, how the AFQT score is calculated, and the various services' policies for retaking the ASVAB.

## Knowing Which Version You're Taking

Regardless of the military branch you want to join, you take the same ASVAB everyone else takes. That goes for the Army, Air Force, Navy, Marine Corps, Coast Guard, and Space Force. Every test-taker gets questions from the same pool, so you and every other potential enlistee are all on equal ground.

However, the ASVAB comes in five versions, depending on where and why you take it. The varieties of the test are essentially the same; they're just administered differently. Table 1-1 boils them down.

**TABLE 1-1** Versions of the ASVAB

Version	How You Take It	Format	Purpose
Student	Given to juniors and seniors in high school; it's administered through a cooperative program between the Department of Education and the Department of Defense at high schools across the United States	Paper	Its primary purpose is to provide a tool for guidance counselors to use when recommending civilian career areas to high school students (though it can be used for enlistment if taken within two years of enlistment). For example, if a student scores high in electronics, the counselor can recommend electronics career paths. If a student is interested in military service, the counselor then refers them to the local military recruiting offices.
Enlistment	Given through a military recruiter at a Military Entrance Processing Station (MEPS) or at a satellite testing site	Usually computer, may be paper	This version of the ASVAB is used by all the military branches for the purpose of enlistment qualification and to determine which military jobs a recruit can successfully be trained in.
Enlistment Screening Test (EST)	Given at the discretion of a military recruiter for a quick enlistment qualification screening	Computer	These mini-ASVABs aren't qualification tests; they're strictly recruiting and screening tools. The EST contains about 50 questions similar but not identical to questions on the AFQT portion of the ASVAB. The test is used to help estimate an applicant's probability of obtaining qualifying ASVAB scores.
Pre-screening, internet-delivered Computerized Adaptive Test (PICAT)	Online, on your own time after receiving an access code from your recruiter	Computer	The PiCAT is an unproctored, full version of the ASVAB. You take it on your own time, but you must take a verification test at a MEPS to validate your score. The verification test typically takes 25 to 30 minutes to complete.
Armed Forces Classification Test (AFCT)	Given at installation educational centers to people already in the military through the Defense Manpower Data Center	Computer	At some point during your military career, you may want to retrain for a different job. If you need higher ASVAB scores to qualify for such retraining, or if you're a commissioned officer who wants to become a warrant officer, you can take the AFCT. The AFCT is essentially the same as the other versions of the ASVAB.

The vast majority of military applicants are processed through a MEPS, where they take the computerized format of the ASVAB (called the CAT-ASVAB, short for *computerized-adaptive testing* ASVAB), undergo a physical exam, and run through a security screening, many times all in one trip. The paper-and-pencil (P&P) version is most often given in high school and at Mobile Examination Test (MET) sites located throughout the United States. Most MET sites use paper versions of the test.

## Mapping Out the ASVAB Subtests

The computerized format of the ASVAB contains ten separately timed subtests, with the Auto & Shop Information subtest split in two. The paper format of the test has nine subtests (the Auto & Shop Information subtests are combined). The two formats differ in the number of questions in each subtest and the amount of time you have for each one. The CAT-ASVAB now often contains *tryout questions*. These questions haven't been used on an officially scored ASVAB; test-makers use your responses to them to ensure the questions are good enough to use on future versions of the test. Each tester sees 15 tryout questions in two, three, or four of the subtests. These questions

don't count toward your score, but you still have to answer them. The tryout questions are only on the computerized version of the test; they're not on the paper version. When you get tryout questions in a subtest, you get extra time to complete it.

Table 1-2 outlines the ASVAB subtests in the order that you take them in the enlistment (computerized or paper) and student (paper only) versions of the test; you can also see which chapters to turn to when you want to review that content.

**TABLE 1-2 The ASVAB Subtests in Order**

Subtest	Questions/ Time without Tryout Questions (CAT-ASVAB)	Possible Questions/ Time with Tryout Questions (CAT-ASVAB)	Questions/ Time (Paper Version)	Content	Chapter
General Science (GS)	15 questions, 12 minutes	30 questions, 25 minutes	25 questions, 11 minutes	General principles of biological and physical sciences	Chapters 10, 11, and 12
Arithmetic Reasoning (AR)	15 questions, 55 minutes	30 questions, 113 minutes	30 questions, 36 minutes	Word problems involving high school math concepts that require calculations	Chapter 9
Word Knowledge (WK)	15 questions, 9 minutes	30 questions, 18 minutes	35 questions, 11 minutes	Correct meaning of a word; occasionally antonyms (words with opposite meanings)	Chapter 4
Paragraph Comprehension (PC)	10 questions, 27 minutes	25 questions, 75 minutes	15 questions, 13 minutes	Questions based on passages (usually a couple of hundred words) that you read	Chapter 5
Mathematics Knowledge (MK)	15 questions, 31 minutes	30 questions, 65 minutes	25 questions, 24 minutes	High school math, including algebra and geometry	Chapters 6, 7, and 8
Electronics Information (EI)	15 questions, 10 minutes	30 questions, 21 minutes	20 questions, 9 minutes	Electrical principles, basic electronic circuitry, and electronic terminology	Chapter 16
Auto & Shop Information (AS)	10 Auto Information questions, 7 minutes; 10 Shop Information questions, 7 minutes	25 Auto Information questions, 18 minutes; 25 Shop Information questions, 17 minutes	25 questions, 11 minutes	Knowledge of automobiles, shop terminology, and tool use	Chapters 13 and 14
Mechanical Comprehension (MC)	15 questions, 22 minutes	30 questions, 42 minutes	25 questions, 19 minutes	Basic mechanical and physical principles	Chapter 15
Assembling Objects (AO)*	15 questions, 18 minutes	30 questions, 38 minutes	25 questions, 15 minutes	Spatial orientation	Chapter 17

\*The Assembling Objects subtest isn't part of the student version of the test.



SAMPLE CAT-ASVAB TEST SCORE REPORT										
Testing Site ID: 521342	Service: AF									
Testing Session: Date: 2013/05/18	Starting Time: 15:30									
Applicant: Jane P. Doe	SSN: 333-33-3333									
Test Form: 02E	Test Type: Initial									
Standard Scores:	GS	AR	WK	PC	MK	EI	AS	MC	AO	VE
	63	59	60	52	56	81	64	62	52	58
COMPOSITE SCORES:										
Army:	GT	CL	CO	EL	FA	GM	MM	OF	SC	ST
	118	121	128	130	127	132	134	129	128	125
Air Force:	M	A	G	E						
	91	76	83	96						
Navy/CG:	GT	EL	BEE	ENG	MEC	MEC2	NUC	OPS	HM	ADM
	117	259	234	120	185	173	235	225	177	114
Army:	MM	GT	EL							
	139	122	134							
SAMPLE CAT-ASVAB TEST SCORE REPORT										

**FIGURE 1-2:** A sample ASVAB score card used for military enlistment purposes.

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## Defining all the scores

When you take a test in high school, you usually receive a score that's pretty easy to understand — A, B, C, D, or F. (If you do really well, the teacher may even draw a smiley face on the top of the page.) If only your ASVAB scores were as easy to understand.

In the following list, you see how your ASVAB test scores result in several different kinds of scores:

- » **Raw score:** This score is the total number of points you receive on each subtest of the ASVAB. Although you don't see your raw scores on the ASVAB score cards, they're used to calculate the other scores.



WARNING

You can't use the practice tests in this book (or any other ASVAB study guide) to calculate your probable ASVAB score. ASVAB scores are calculated by using raw scores, and raw scores aren't determined by adding the number of right or wrong answers. On the actual ASVAB, harder questions are worth more points than easier questions are.

- » **Standard scores:** The various subtests of the ASVAB are reported on the score cards as standard scores. A *standard score* is calculated by converting your raw score based on a standard distribution of scores with a mean of 50 and a standard deviation of 10.



WARNING

Don't confuse a standard score with the graded-on-a-curve score you may have seen on school tests — where the scores range from 1 to 100 with the majority of students scoring between 70 and 100. With standard scores, the majority score is between 30 and 70. That means that a standard score of 50 is an average score and that a score of 60 is an above-average score.

» **Percentile scores:** These scores range from 1 to 99. They express how well you did in comparison with another group called the *norm*. On the student version's score card, the norm is fellow students in your same grade (except for the AFQT score).

On the enlistment and student score cards, the AFQT score is presented as a percentile with the score normed using the *1997 Profile of American Youth*, a national probability sample of 18-to-23-year-olds who took the ASVAB in 1997. For example, if you receive a percentile score of 72, you can say you scored as well as or better than 72 out of 100 of the norm group who took the test. (And by the way, this statistic from 1997 isn't a typo. The ASVAB is occasionally re-normed; the last time was in 2004, and the sample group used for the norm was those folks who took the test in 1997. There's no official word on when the next re-norming will happen.)

» **Composite scores (line scores):** *Composite scores* are individually computed by each service branch. Each branch has its own particular system when compiling various standard scores into individual composite scores. These scores are used by the different branches to determine job qualifications. Find out much more about this topic in Chapter 2.

## Understanding the big four: Your AFQT scores

The ASVAB doesn't have an overall score. When you hear someone say, "I got an 80 on my ASVAB," that person is probably talking about their percentile on the Armed Forces Qualification Test (AFQT) score, not an overall ASVAB score. The AFQT score determines whether you even qualify to enlist in the military, and only four subtests are used to compute it:

- » Word Knowledge (WK)
- » Paragraph Comprehension (PC)
- » Arithmetic Reasoning (AR)
- » Mathematics Knowledge (MK)

Each job in the military, from food service positions to specialty jobs in the medical field, requires a certain combination of line scores that can include the scores you get on the AFQT. The subtests that aren't part of the AFQT are used only to determine the jobs you qualify for. (See Chapter 2 for information on how the military uses the individual subtests.)



TIP

Figure out which areas to focus on based on your career goals. If you're not interested in a job that requires a great score on the Mechanical Comprehension subtest, you don't need to invest a lot of time studying for it. As you're preparing for the ASVAB, remember to plan your study time wisely. If you don't need to worry about the Assembling Objects subtest, don't bother with that chapter in this book. Spend the time on Word Knowledge or Arithmetic Reasoning. Keep in mind, though, if you don't have a desired job or aren't sure about your options, it's best to study this book and take the practice tests, focusing on all areas of the ASVAB. Doing well on each subtest will broaden your available job choices and make you a more desirable candidate.

## Calculating the AFQT score

The military brass (or at least its computers) determines your AFQT score through a very particular process:

1. **Add the value of your Word Knowledge score to your Paragraph Comprehension score.**
2. **Convert the result of Step 1 to a scaled score, ranging from 20 to 62.**

This score is known as your *Verbal Expression* or VE score.

- 3. To get your raw AFQT score, double your VE score and then add your Arithmetic Reasoning (AR) score and your Mathematics Knowledge (MK) score to it.**

The basic equation looks like this:

$$\text{Raw AFQT Score} = 2\text{VE} + \text{AR} + \text{MK}$$

- 4. Convert your raw score to a percentile score, which basically compares your results to the results of thousands of other ASVAB test-takers.**

For example, a score of 50 means that you scored as well as or better than 50 percent of the individuals the military is comparing you to.

## Looking at AFQT score requirements for enlistment

AFQT scores are grouped into six main categories based on the percentile score ranges in Table 1-3. Category III and Category IV are divided into subgroups because the services sometimes use this chart for internal tracking purposes, enlistment limits, and enlistment incentives. Based on your scores, the military decides how trainable you may be to perform jobs in the service.

**TABLE 1-3 AFQT Scores and Trainability**

Category	Percentile Score	Trainability
I	93–99	Outstanding
II	65–92	Excellent
III A	50–64	Above average
III B	31–49	Average
IV	10–30	Below average
V	1–9	Not trainable

The U.S. Congress has directed that the military can't accept Category V recruits or more than 4 percent of recruits from Category IV, although the Secretary of Defense may increase that number to 20 percent if necessary. People without high school diplomas must score at or above the 31st percentile (that is, be in Category III B or higher) to be eligible for enlistment, and even then, they must have an alternative credential, such as a General Educational Development (GED) certificate or another high school equivalency certificate. If your score falls in Category III B or anywhere in Category IV, your chances of being able to enlist are smaller (especially if other Category III B recruits beat you to it) because at least 60 percent of recruits must score above average on the AFQT.

Depending on whether you have a high school diploma or a passing score on your state's approved high school equivalency test (such as the GED), the military has different AFQT score requirements. Check out Table 1-4.

The minimum scores required in each branch can — and do — change frequently because the military has different needs at different times. For example, at the height of Operation Iraqi Freedom, the Army accepted recruits with GEDs who scored 31 on the AFQT.

**TABLE 1-4 AFQT Score Requirements**

Branch of Service	Minimum AFQT Score with High School Diploma	Minimum AFQT Score with High School Equivalency Test Certificate	Special Circumstances
Air Force and Space Force	31	50	The Air Force allows less than 1 percent of its enlistees each year to have a high school equivalency test certificate instead of a high school diploma. If you have a high school equivalency certificate, you must have at least 15 hours of college credits to gain the same eligibility as a high school graduate and wait for an applicant slot to become available.
Army	31	50	The Army sometimes approves waivers for applicants with high school equivalency test certificates and AFQT scores below 31.
Coast Guard	40	Varies	If you have a high school equivalency certificate, the minimum AFQT score doesn't apply. If your ASVAB line scores qualify you for a specific job and you're willing to enlist in that job, your recruiter may be able to put in a waiver. Very few people (about 5 percent) each year are allowed to enlist with a high school equivalency certificate.
Marine Corps	31	50	Sometimes the Marines issue waivers for people with scores below the minimum thresholds, particularly when the Corps is struggling to fill enlistment goals.
Navy	31	50	If you enlist with a high school equivalency certificate, you must have at least 15 college credits.
Space Force	60		You may be able to enlist in the Space Force with a high school equivalency certificate; in some cases, enlistees with equivalency certificates must have at least 15 college credits.

## Checking out the military's AFQT requirements for special programs

Achieving the minimum required AFQT score established by an individual branch gets your foot in the door, but the higher you score, the better. For example, if you need a medical or criminal history waiver in order to enlist, the military personnel who make those decisions are more likely to take a chance on you if they think you're a pretty smart cookie than they would be if you barely made the minimum qualifying score.



Enlistment programs are subject to change without notice based on the current recruiting needs of the service. Your recruiter can give you the most up-to-date information.

REMEMBER



TIP

If you don't know which kind of job you want to do in the military, the ASVAB helps you and the military determine your potential ability for different types of jobs. If you're in this situation, review all the chapters in this book, brushing up on the basic principles of everything from science to electronics, but focus on the four subtests that enable you to qualify for enlistment: Word Knowledge, Paragraph Comprehension, Arithmetic Reasoning, and Mathematics Knowledge. Following this plan ensures a relatively accurate appraisal of your aptitude for various military jobs.

## MILITARY OPENS COMBAT ROLES TO WOMEN

Jobs that were traditionally open only to male members of the U.S. Armed Forces are now open to women — but it took 378 years for the military to change the way it does business.

The first militias in the New World began organizing in 1636, and men were the only ones who served. Even after June 14, 1775, the official “birthday” of the U.S. Army, the military denied women the opportunity to enlist. However, females sometimes traveled with the troops to act as nurses, laundresses, and cooks if they could prove their usefulness to troop commanders.

History occasionally reveals a woman who disguised herself as a man to join the fight between 1776 and 1948. (During the Civil War, a nominal number of females served as spies while others continued to fight on the front lines disguised as men.)

Congress passed the Women’s Armed Services Integration Act on June 12, 1948, which gave women the right to enlist during peacetime and to collect veteran benefits.

Sixty-seven years later, on December 3, 2015, Secretary of Defense Ash Carter ordered the full integration of women in the Armed Forces. Under that order, all military occupational specialties are now open to women — including ground combat roles and special operations, such as Navy SEALs, Army Special Forces and Rangers, and Air Force Special Tactics.

New, gender-neutral job titles replaced traditional titles such as “artilleryman” and “reconnaissance man.” Now those jobs are referred to as *artillery technician* and *reconnaissance Marine*.

## Do-Over: Retaking the ASVAB

An AFQT score between 0 and 9 tells the military that you’re not trainable, so no branch of the service accepts people who score in that range. Even if you score higher than that, you can fail to achieve a score high enough to enlist in the service branch you want. This means you need to work on one (or more) of the four core areas: Mathematics Knowledge, Arithmetic Reasoning, Paragraph Comprehension, and Word Knowledge. Parts 2 and 3 of this book are specifically designed to help you improve your scores on these four subtests.

When you’re sure you’re ready, you can apply (through your recruiter) to take the ASVAB. After you take the ASVAB for the first time, you can retake the test after one month (taking the ASVAB in high school does count for retest purposes). After the first retest, you must wait another month to test again. From that point on, you must wait at least six months before taking the ASVAB again.

You can’t retake the ASVAB on a whim or whenever you simply feel like it. Each of the services has its own rules concerning whether it allows a retest, and I explain them in the following sections.



REMEMBER

ASVAB test results are valid for two years, as long as you aren’t in the military. In most cases, after you join the military, your ASVAB scores remain valid as long as you’re in. In other words, except in a few cases, you can use your enlistment ASVAB scores to qualify for retraining years later.

## U.S. Army retest policy

The Army allows a retest in one of the following instances:

- » The applicant's previous ASVAB test has expired.
- » The applicant failed to achieve an AFQT score high enough to qualify for enlistment.
- » Unusual circumstances occur, such as if an applicant, through no fault of their own, is unable to complete the test.



REMEMBER

Army recruiters aren't authorized to have applicants retested for the sole purpose of increasing aptitude area scores to meet standards prescribed for enlistment options or programs.

## U.S. Air Force and U.S. Space Force retest policy

For the U.S. Air Force, the intent of retesting is for an applicant to improve the last ASVAB scores so the enlistment options increase. Before any retest is administered, the recruiting flight chief must interview the applicant in person or by telephone and then give approval for the retest.

Here are a few other policies to remember:

- » The Air Force doesn't allow retesting for applicants after they've enlisted in the Delayed Entry Program (DEP).
- » Current policy allows retesting of applicants who aren't holding a job/aptitude area reservation and/or who aren't in DEP but already have qualifying test scores.
- » Retesting is authorized when the applicant's current line scores (mechanical, administrative, general, and electronic) limit the ability to match an Air Force skill with their qualifications.

## U.S. Navy retest policy

The Navy allows retesting of applicants

- » Whose previous ASVAB tests have expired
- » Who fail to achieve a qualifying AFQT score for enlistment in the Navy

In most cases, individuals in the Delayed Entry Program (DEP) can't retest.

## U.S. Marine Corps retest policy

The Marine Corps authorizes a retest if the applicant's previous test has expired. Otherwise, recruiters can request a retest if the initial scores don't appear to reflect the applicant's true capability, considering the applicant's education, training, and experience.



REMEMBER

For the Marine Corps, the retest can't be requested solely because the applicant's initial test scores didn't meet the standards prescribed for enlistment options or programs.

## TRACING THE TESTING TRAIL

In 1948, Congress made the Department of Defense develop a uniform screening test to be used by all the services. The Defense Department came up with the Armed Forces Qualification Test (AFQT). This test consisted of 100 multiple-choice questions in areas such as math, vocabulary, spatial relations, and mechanical ability. The military used this test until the mid-1970s. Each branch of the service set its own minimum qualification (AFQT) score.

When the military decides to do something, it often acts with the lightning speed of a snail carrying a 30-pound rucksack. In the 1960s, the Department of Defense decided to develop a standardized military selection and classification test and to administer it in high schools. That's where your old buddy, the ASVAB, came from. The first ASVAB test was given in 1968, but the military didn't use it for recruiting purposes for several years. In 1973, the draft ended, and the nation entered the contemporary period in which all military recruits are volunteers. In 1976, the ASVAB became the official entry test used by all services.

The ASVAB remained unchanged until 1980, when it underwent its first revision. The subtest areas remained the same, but several of the questions were updated to keep up with changes in technology.

In 1993, the computerized version was released for limited operational testing, but it didn't begin to see wide-scale use until 1996. The questions on the computerized version of the ASVAB were identical to the questions on the paper version. It wasn't until the end of 2002 that the ASVAB finally underwent a major revision. Two subtests (Coding Speed and Numerical Operations) were eliminated, and a new subtest (Assembling Objects) was added to the computerized version. Also during the 2002 revision, all the questions were updated, and the order of the subtests was changed. The revised ASVAB was first rolled out in the computerized format, and the paper versions of the test were updated during the next year. Today, the Department of Defense is considering adding new subtests, including one called "Complex Reasoning" and some form of a cyber test to produce a "computational thinking" composite score. The Department of Defense currently updates the computerized version of the ASVAB on a rolling basis.

## U.S. Coast Guard retest policy

For Coast Guard enlistments, six months must have elapsed since an applicant's last test before they may retest solely for the purpose of raising scores to qualify for a particular enlistment option.

The Coast Guard Recruiting Center may authorize retesting after one calendar month has passed from an initial ASVAB test if substantial reason exists to believe the initial test scores or subtest scores don't reflect an applicant's education, training, or experience.

