

Final Report: Street-to-Fleet Study

Volume I: Street-to-Fleet for the Enlisted Force

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A handwritten signature in black ink, appearing to read "Donald J. Cymrot". The signature is written in a cursive style with some loops and flourishes.

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Introduction and summary

Over the past several years, the Marine Corps has committed considerable resources to the development of the Total Force Data Warehouse (TFDW). This Oracle-based system allows Marine Corps analysts to look at the force historically and to do very detailed analyses of what it looks like today. As its primary data source, the system uses snapshots drawn from Headquarters Master Files of the Marine Corps at particular points in time.

The TFDW can answer a variety of questions that Marine Corps planners require but not such “street-to-fleet” questions as:

- What enlisted recruit characteristics are associated with successful adaptation to the Marine Corps? In particular, what characteristics are associated with the successful completion of bootcamp and the first term of service?
- What officer characteristics are associated with retention? Where are the critical retention points in an officer’s career?

In short, there were no historical files beginning with enlisted accession cohorts or officer year groups that allowed the analyst to follow these Marines over their careers. The purpose of the Street-to-Fleet study was to identify the best historical data that could be found and to build accession-based files, for Marine Corps and enlisted personnel, organized by fiscal year of entry into the Marine Corps.

On the enlisted side, CNA has developed both a historical SSN-based accession file and two databases that are Windows NT compatible. These databases, which begin with FY 1979 accessions, are called MCAR (Marine Corps attrition reasons) and MCAID (Marine Corps attrition interactive database).¹ The interactive databases allow the

1. Because of the number of attrition reasons, we decided to focus one database on attrition reasons and one on accession characteristics and noncategorized attrition. This decision was made with the study sponsors, and it considerably improved the run time for the databases.

user to examine non-end-of-active-service (non-EAS) attrition through 72 months of service.

On the commissioned officer side, CNA has built an event-based officer accession file that begins with The Basic School (TBS) classes in FY 1980. This file traces the officer's career from TBS to the completion of training in an occupational specialty and full duty at the first duty station. It records all promotions and the characteristics of the officer at the time of promotion, as well as information at the time of separation.

In the two volumes of this final report, we detail the databases we have assembled for the enlisted (volume I) and for the commissioned officers (volume II). We also report analyses we have done with these databases and the procedures we have developed for updating them.

Analyses of enlisted accession, attrition, and retention

Before we turn to the Street-to-Fleet enlisted databases, let's briefly look at how we constructed these databases and some of the analyses that we have done with them.

CNA has received accession data for regular, enlisted Marines since FY 1979. The earliest data were from a system called recruit accession module (RAM). When the automated recruit management system (ARMS) replaced RAM, it was decided to construct something in the same format as the RAM data (called GRAND-RAM) for both CNA and the manpower analysis section (MA) in Manpower and Reserve Affairs. For a variety of reasons, the GRAND-RAM was discontinued in FY 1996. CNA was able to obtain historical ARMS data from FY 1992 onward. Thus, CNA's accession information comes from RAM/GRAND-RAM data for FY 1979–1991 accessions and from ARMS data for FY 1992–2000 accessions.

CNA takes these accession data and matches them, Social Security Number (SSN) by SSN, to separation information. From these data, as well as some information in the Headquarters Master Files (HMF), we build the accession files that form the inputs for our databases.

In addition to the databases described in volume I of this final study report, CNA is providing the Marine Corps Street-to-Fleet data that provided the input for the databases. The Street-to-Fleet data are in two files, one for the FY 1979–1991 accession period and one for the FY 1992–2000 accession period. Where possible, on the FY 1992–2000 file, we have included time-to-train information, as well as the separation and accession information. In addition, CNA is providing the entire ARMS file, arranged by SSN, for the FY 1992–2000 accession period.

MCRD attrition

We compute MCRD attrition as a separation from Parris Island or San Diego within the first 12 months of service. Allowing 12 months catches the recycles, which usually add about a percentage point to the attrition that occurs within the regular bootcamp time frame.

The Marine Corps Recruiting Command (MCRC), and the Recruit Depots, also calculate MCRD attrition. The CNA and MCRC calculation methods, however, are different;² thus, the attrition rates calculated under the two methods also differ (although they are usually quite close). How do the two methods calculate attrition?

- MCRC and the recruit depots use aggregate data to calculate “events” within the period. Thus, MCRC calculations for FY 1999 will be the FY 1999 separations from the MCRDs divided by the FY 1999 accessions.
- CNA calculates individual attrition for each Marine, SSN by SSN. CNA calculations for FY 1999 MCRD attrition use all the accessions who “stepped on the yellow footsteps” in FY 1999 as the denominator for the attrition rate. We then follow these Marines accessed in FY 1999 to see who attrited at the MCRD. The CNA method is often identified as the accession cohort method.

How, then, do the two methods differ? First, although they share the same denominator, the numerators of the two calculations differ. MCRC, by using FY 1999 attrition events from MCRD, will include recruits who accessed in FY 1998 but did not attrite until FY 1999. CNA, on the other hand, watches each recruit who entered in FY 1999; some of these recruits will not attrite until FY 2000.

Both methods have advantages. The MCRC/MCRD method is very timely; one can calculate MCRD attrition for FY 1999 as soon as FY 1999 is completed. With the CNA method, one has to wait into the year 2000 to see if the FY 1999 accessions successfully completed

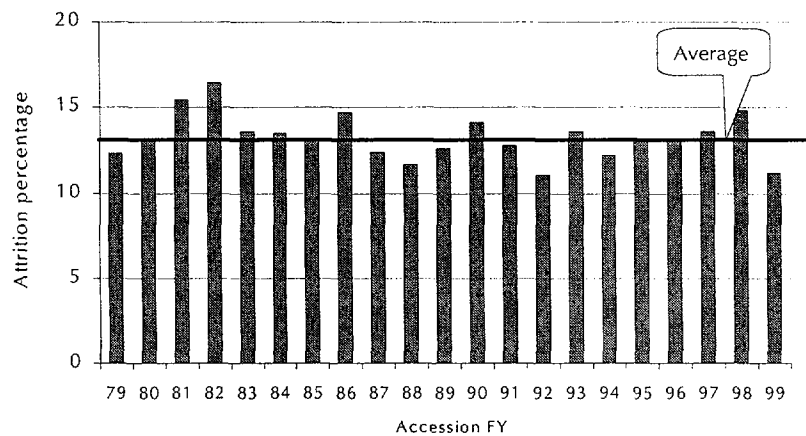
2. Neither is right or wrong. They are just different. Each method has advantages and disadvantages.

bootcamp. Thus, on the timeliness criterion, the MCRC/MCRD method is superior. Although the CNA method loses on timeliness, it wins on the analytic side. Only by watching recruits individually can one tie accession characteristics to subsequent attrition behavior.

MCRD attrition rates over time

Figure 1 looks at the male MCRD attrition rates for each accession fiscal year since FY 1979. Over the period, the average MCRD attrition rate for male regular recruits was 13.6 percent. Attrition was below the historical average for FY 1999 accessions, as it will be for FY 2000 accessions.³

Figure 1. Male MCRD attrition rates^a

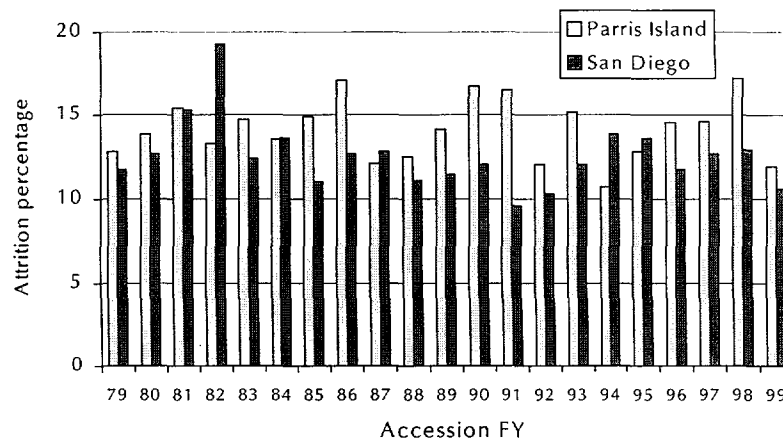


a. Data are for male regulars only. Source: MCAID database.

The Marine Corps has two MCRDs: Parris Island and San Diego. Figure 2 compares MCRD attrition at these two depots.

3. We have all the FY 2000 accessions in our database, but MCRD attrition for these accessions will not be complete until we have separation data through at least March 2001. Since the database has separation information through December 2000, one can analyze 3-month MCRD attrition for FY 2000 accessions.

Figure 2. Male MCRD attrition rates at the two recruit depots^a



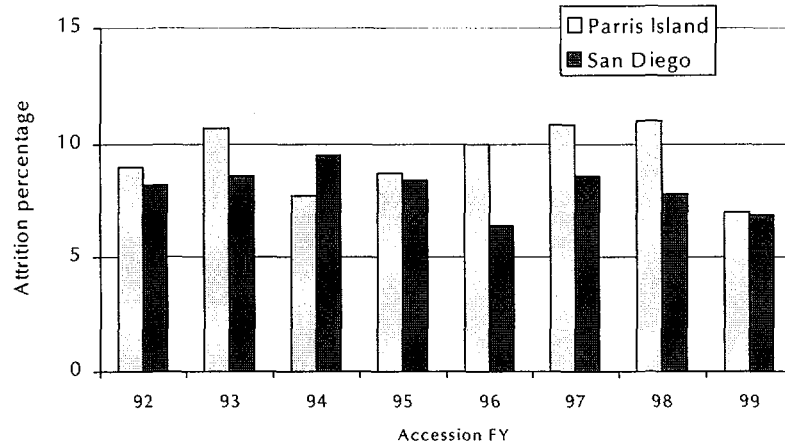
a. Data are for male regulars only. Source: MCAID database.

It may be surprising to those who have not looked at these data before that the MCRD attrition rates for regular males are often quite different from depot to depot. And, in some years the rates are very similar. For FY 1999 accessions, the rates are close, as we expect they will be for FY 2000 accessions. Usually the attrition rate at Parris Island is higher than that at San Diego, but that has not always been the case.

The differing attrition rates at the two depots for accessions in the same year are *not explained* by measurable quality differences. In figure 3, we restrict the comparison to attrition rates to our most top-quality male regular recruits—those who were accessed as seniors and shipped as high school diploma graduates, test in the top half of the country in ability tests, have had at least 3 months in the delayed entry program, and met the retention weight-for-height standard at accession. Again, these are our very highest quality and lowest attrition recruits.⁴

4. The “contracted as seniors” information is available only for accessions from FY 1992 to the present.

Figure 3. MCRD attrition for very-high-quality male regular recruits^a

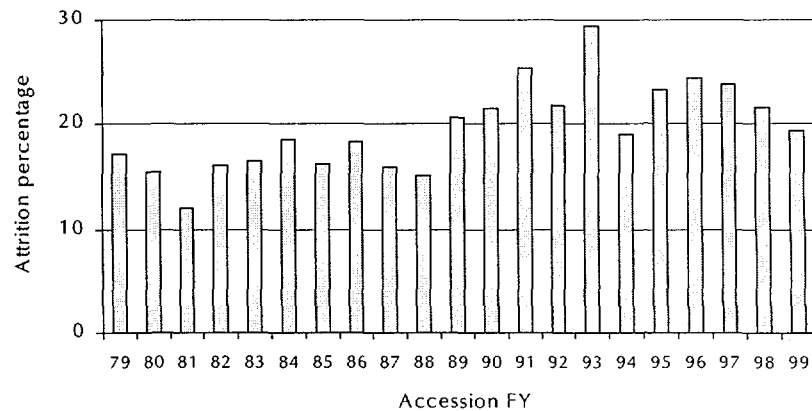


a. Members of this group were recruited as seniors, tested in the top half of the country in the ability test, had at least 3 months in the DEP, and met the retention weight-for-height standard at accession.

MCRD attrition rates over time for female regular recruits

Female accessions train only at MCRD, Parris Island. In the decade of the 1990s, as female training became considerably tougher, MCRD attrition rates for female recruits rose. In the most recent years, however, these attrition rates have begun to come down, as we show in figure 4.

Figure 4. MCRD attrition rates for female regular recruits



MCRD attrition rates by recruit characteristics

There is a significant body of work on recruit characteristics that are most likely to be associated with successful completion of bootcamp and the first term of service [1–8]. Most of this work has been done for male recruits. Here, we summarize characteristics that historically have been tied to success in the Corps:

- High school diploma graduates, particularly those who are recruited as seniors⁵
- Three or more months in delayed entry (DEP) before entry into the Corps
- Meet the retention weight-for-height standard at accession
- Enter in the summer—June, July, August, or September (JJAS)
- Hispanic ethnic background.

Other characteristics associated with success include those entering with Armed Forces Qualification Test (AFQT) scores in top half of this nationally-normed test and the absence of enlistment waivers.⁶

Seasonality

The Marine Corps' goal is to enlist high school graduates. Consequently they focus recruiting efforts in the high schools, and it's logical for those recruits to ship in the summer after high school graduation. Recruiters have also found it easier to recruit quality accessions during this time, and our research has shown that recruits accessed in the summer months have lower bootcamp attrition. The two reasons for this lower attrition are that (1) summer recruits are usually of better quality and better prepared for bootcamp than

5. Tier I recruits are primarily high school seniors. The Marine Corps has maintained and successfully achieved its accession goal of 95 percent Tier I recruits.

6. These characteristics are less strongly associated with successful completion of bootcamp or the first term of service than are the characteristics described in the bullets. AFQT scores, however, have been very important in predicting job performance [9–11].

recruits who enter at other times of the year and (2) all quality types seem to have lower MCRD attrition in the summer months.⁷ Table 1 looks at this phenomenon for FY 1999 male regular accessions in October, November, December, and January (ONDJ); February, March April, and May (FMAM); and JJAS.

Table 1. MCRD attrition rates for male regular recruits

	MCRD attrition rate (%)	
	Parris Island (PI)	San Diego (SD)
Highest quality (Tier I and AFQT >= 50th percentile) ^a		
ONDJ	11.7	9.4
FMAM	12.2	11.5
JJAS	7.9	8.4
All others		
ONDJ	17.1	12.5
FMAM	16.8	14.4
JJAS	11.5	10.6

a. CNA definition of Tier I excludes those with 1 semester of college and adult education certificates.

We highlighted the extremely low MCRD attrition rates in JJAS, both for the highest quality and for all other recruits.

Currently the Marine Corps is shipping about half of its accession in JJAS. This accession phasing should help recruiters find high-quality recruits and should also help to keep MCRD attrition low. However, it will probably cause delays in the training pipeline and an increase in the patients, prisoners, trainees, and transients (P2T2) line. Shifting accessions into the summer months, however, is necessary if the Marine Corps is to maintain the high quality of its accessions.

7. We cannot scientifically determine why this is so. We suspect, however, that the presence of such a large proportion of quality recruits in the summer creates the kind of positive attitude that makes for success.

Preservice smoking and MCRD attrition

We obtained data from a survey questionnaire given at both MCRDs in the April 1999 through January 2000 period.⁸ This sample of almost 10,000 Marine Corps recruits provides us with the first opportunity to see if there is any relationship between preservice smoking and successful completion of bootcamp.⁹

After almost 20 years of decline, youth smoking increased in the 1990s. About one-third of young people now smoke—clearly, too big a group to exclude from the recruitable population. In terms of race and ethnicity, white youth are more likely to be smokers than are Hispanic or black youths [12].

From our recent sample of almost 10,000 recruits, it appears that Marine Corps accessions are less likely to smoke than the overall youth population:

- For male recruits
 - 50 percent reported they never smoked, and 14 percent said they rarely smoked (64 percent overall)
 - 11 percent reported they smoked 1 to 5 cigarettes per week
 - 25 percent reported smoking daily
- For female recruits
 - 60 percent reported they never smoked, and 11 percent said they rarely smoked (71 percent overall)
 - 12 percent reported they smoked 1 to 5 cigarettes per week
 - 18 percent reported smoking daily.

For our analysis of MCRD attrition, we focused on males. In the time period of the survey, the overall male MCRD attrition rate was

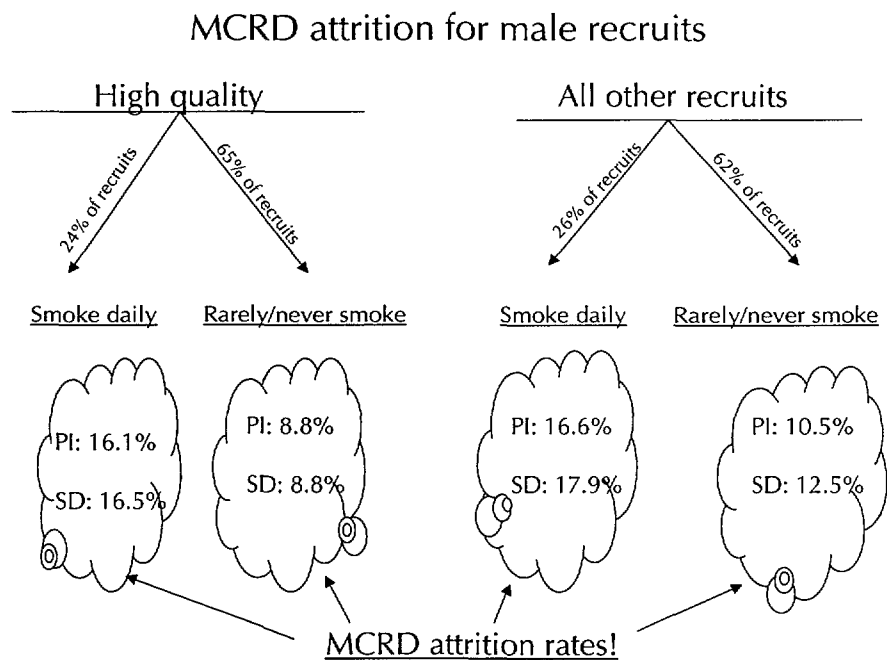
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8. Our colleagues, Federico Garcia and James Gasch, included questions on preservice smoking in a questionnaire they were doing for the Office of the Secretary of Defense on recruit educational backgrounds.
 9. Earlier work with Navy accessions showed very high Navy bootcamp attrition rates for those who reported smoking one or more packs per day before entering bootcamp [12].

11.5 percent. But, there were very large differences in the MCRD attrition rates by smoker-status:

- 9.5 percent of male recruits who never smoked (4,763) or who rarely smoked (1,298) attrited from MCRD
- 16.2 percent of male recruits who smoked daily (2,364) attrited from MCRD.

These findings were sufficiently intriguing for us to explore this phenomenon further. Figure 5 looks at the proportion of smokers among high-quality and all other recruits, and then at the MCRD attrition behavior. For male recruits who reported smoking daily before coming to bootcamp, the attrition rates are very high and *do not vary* by quality category. This means that the entire difference in the attrition rates between high-quality and all other recruits is found in the attrition behavior of nonsmokers.

Figure 5. Male MCRD attrition rates: smoking status and recruit quality^a



a. High-quality recruits are Tier I in educational background with AFQT scores in the top 50th percentiles. CNA removes the small number of adult education holders and 1-semester college recruits from Tier I; because of their historically high attrition behavior, we place these recruits in the category of "all other recruits."

Finally, we further refined the definition of high-quality recruits. Thus, we looked only at recruits contracted as seniors and shipped as high school diploma graduates, with AFQT scores of the 50th percentile or higher, with 3 or more months in the DEP, and who met the retention weight-for-height standard at accession. Even for these recruits there are substantial differences in MCRD attrition rates by preservice smoking status. Only 6.0 percent of these recruits who reported never, or hardly ever, smoking attrited from bootcamp. For the daily smokers, the MCRD attrition rate was 9.8 percent.

How can we reduce MCRD attrition rates for preservice smokers? This is a very hard question. Presumably one would want to start with stressing smoking cessation while recruits are in the pool program. These recruits want to succeed as Marines. Perhaps by educating them as to the past MCRD attrition rates for smokers, we can convince some of them to stop smoking before entering bootcamp. To aid in quitting, nicotine replacement strategies could be considered for the pool programs, as well as in the first forming week at the MCRDs.

MCRD male attrition in FY 1999

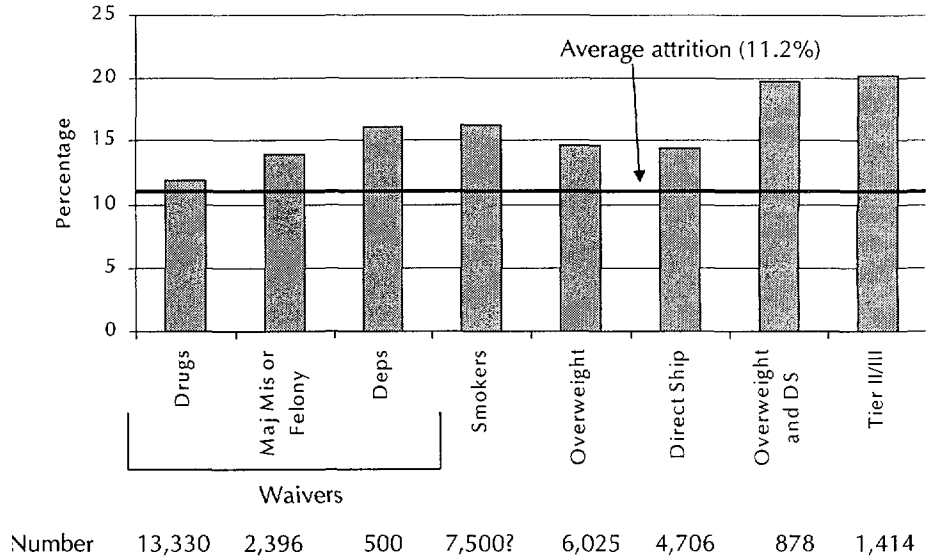
Let's now look quickly at the FY 1999 MCRD attrition rates for categories of regular male recruits with historically high attrition. Figure 6 shows the number of male recruits in each of these high-attrition categories.

The high-attrition categories are as follows: three types of enlistment waivers (drugs, major misdemeanors or felonies, and dependents), preservice smokers, recruits who do not meet the retention weight-for-height standard, direct ship recruits, recruits who are both overweight and direct ships, and, finally, Tier II/III recruits.¹⁰ The highest attrition categories are still the Tier II/III recruits; these are restricted to no more than 5 percent of Marine Corps accessions. In terms of overall numbers of losses, however, the preservice smokers with 16.2 percent MCRD attrition are at the top of the list.¹¹

10. Tier II/III recruits are primarily general education diploma (GED) holders and high school dropouts.

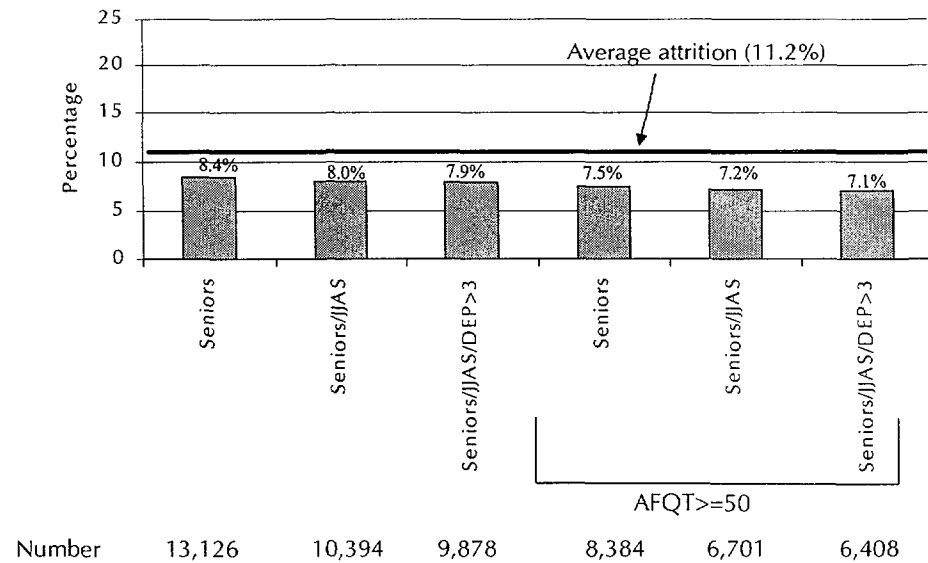
11. We are estimating the number of preservice accessions who are smokers. We use the 25 percent rate of smoking observed in the earlier sample and estimate that about 7,500 male accessions are smokers.

Figure 6. FY 1999 MCRD attrition rates for male regulars with characteristics historically associated with high attrition rates



Now let's turn to the characteristics historically associated with low MCRD attrition rates. We show these in figure 7.

Figure 7. FY 1999 MCRD attrition rates for males regulars with characteristics historically associated with low attrition rates

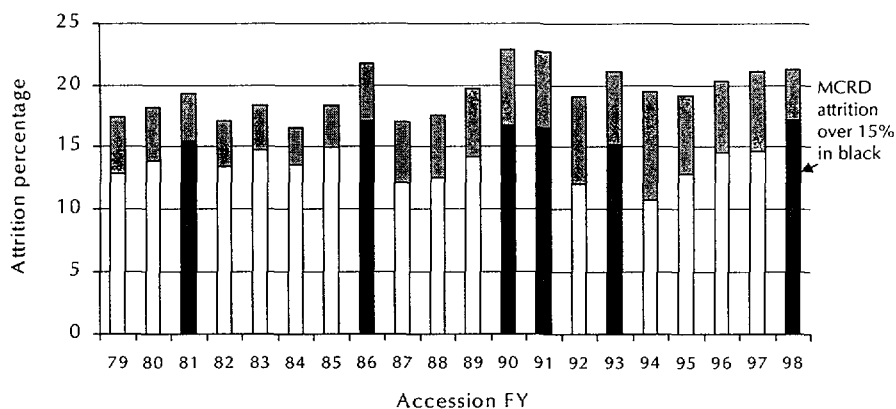


Does MCRD attrition make a difference?

Does it make a difference if average attrition rates at the MCRDs are high or low in a particular year? It could be that, if MCRD attrition is low, subsequent attrition will be high—that is, the attrition is just being postponed. Fortunately, that has not been the case in the Marine Corps. Lower attrition at the MCRD has *not* meant higher attrition later.¹²

Let's look at 18-month attrition, separating out the attrition that occurred at the MCRD. We'll first look at regular males who trained at Parris Island. Figure 8 shows the 18-month attrition stovepipes with MCRD attrition shown as the bottom of each stovepipe. If MCRD attrition was over 15 percent in that year, the MCRD portion of the stovepipe is shown in black. Otherwise, it is shown in white. As is clear from figure 8, when MCRD attrition at Parris Island exceeded 15 percent, overall 18-month attrition was usually well over 20 percent. The only exception to this occurred back in FY 1981.

Figure 8. Male MCRD and 18-month attrition rates: Parris Island male regulars^a

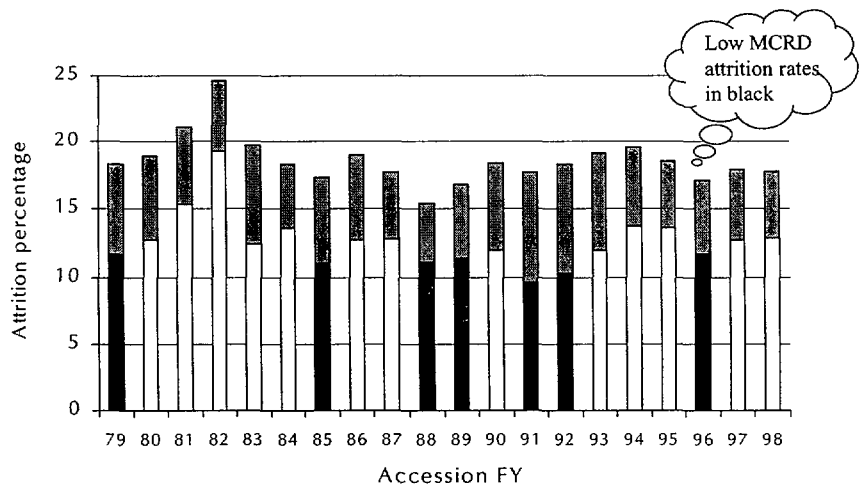


a. Bottom part of stovepipe is MCRD attrition; top portion is rest of attrition to 18 months of service.

12. See [13] for earlier work on this topic.

We can look at the same thing for male regulars trained at MCRD, San Diego (figure 9.) Here, because it provides a clearer picture of this set of numbers, we show the attrition rates that are *below* average in black. MCRD attrition rates that are over the average are shown in white. It's evident from the figure that lower MCRD attrition at San Diego is also associated with lower attrition for the full 18 months of service.

Figure 9. Male MCRD and 18-month attrition rates: San Diego male regulars^a



a. Bottom part of stovepipe is MCRD attrition; top portion is rest of attrition to 18 months of service.

First-term attrition

Over the last two decades, Marine first-term enlistment contracts have been for 3, 4, 5, or 6 years. In most years, however, most Marines have enlisted for one of two contract lengths. In FY 1979, slightly over one-third of the contracts were for 3 years and virtually all the rest were for 4 years.¹³ By the mid-1980s, 3-year initial enlistment contracts had practically disappeared. By 1985, slightly over 80 percent of first-term enlistment contracts were for 4 years and almost 15 percent were for

13. There were a small number of 6-year contracts (less than 1 percent).

6 years. FY 1987 accessions marked the largest percentage of 6-year initial enlistment contracts, slightly over 21 percent. Six-year enlistment contracts then began to decline; by 1995, less than 2 percent of the first-term contracts were for 6 years. In recent years, between 80 and 85 percent of first-term contracts have been for 4 years, with the remaining percentage being for 5 years. CNA analyses have generally favored longer enlistment contracts, believing that the Marine Corps got more "tooth" out of the longer contracts [14].

In general, for contracts of 4 or more years, we define first-term attrition as that occurring in the first 45 months of service (see table 2).

In our previous analyses, we have found that longer enlistment contracts are usually associated with lower attrition rates. That is also true for the FY 1995 and FY 1996 accessions shown in table 2. While the overall 45-month attrition rate was 31.9 percent, the 45-month attrition rate for the roughly 10 percent of accessions with initial contracts of 5 years was only 25.6 percent.¹⁴

We have consistently found that recruits who meet the retention weight-for-height standard at the time of accession have lower attrition. Here, the MCRD attrition rates is 6.2 percentage points lower and the 45-month attrition rate is 6.9 percentage points lower.¹⁵

Recruits who enter through the Delayed Entry Program (DEP) tend to have lower attrition. We define direct ships as those who ship in the month that they signed their contract, and we compare these recruits with those who shipped in the next or the following month (1-2 months in DEP) with those with 3 or more months in the DEP. For male accessions in these years, we find virtually no difference between direct ships and 1-2 months in DEP, but considerably lower attrition for those with 3 or more months in the DEP. MCRD attrition is about

14. Work that is beyond the scope of this study is probably required to understand why these 45-month attrition rates for 5-year obligors were so low. We believe they are mainly in aviation specialties, specialties that have been found in the past to have lower attrition rates than those in ground occupations.

15. Appendix A provides a table with these standards.

Table 2. MCRD and first-term (45-month) attrition rates for male regulars accessed in FY 1995 and FY 1996

Characteristic	Percentage	
	MCRD attrition rate	45-month attrition rate ^a
Overall	13.1	31.9
Contract length		
4-year	13.3	32.6
5-year	11.2	25.6
Retention weight-for-height standard		
Met at accession	12.0	30.7
Didn't meet	18.2	37.6
DEP status		
Direct ship	16.5	38.9
1-2 months in DEP	16.3	37.3
3 or more months in DEP	11.1	28.4
Educational background		
Senior ^b	9.9	26.7
Workforce ^c	14.2	37.4
Tier I other ^d	20.9	46.9
Tier II/III	22.3	52.2
Race/ethnic		
White	13.9	33.1
Black	12.8	35.2
Hispanic	13.9	23.1
Other	10.4	26.4
Season		
FMAM	16.0	35.4
JJAS	10.8	28.1
ONDJ	14.2	34.7

a. This includes MCRD attrition.

b. Contracted as senior and shipped as high school diploma graduate.

c. Tier I but not senior and not adult education or 1-semester college.

d. Adult education or 1-semester college.

5 percentage points lower for this group and 45-month attrition is about 9 percentage points lower.

Marine Corps policy requires that at least 95 percent of recruits have a Tier I educational background.¹⁶ Based on historical Marine Corps experience and some recent research, we divided the DOD-defined Tier I recruits into three distinct categories: those recruited as seniors, Tier I recruits that we call “grads,” and those with educational backgrounds of adult education or 1-semester college. We correspond those with TierII/III recruits. As table 2 shows, these educational background categories sharply delineate attrition.

FY 1995–1996 male accessions were 13 percent black, 12 percent Hispanic, and 71 percent white; 4 percent belonged to other race/ethnic categories. Both Hispanics and those of other race/ethnic backgrounds stand out with their very low attrition rates. The finding of particularly low attrition rates for Hispanic recruits is well known, but only in recent years have we had sufficient numbers of other race/ethnic categories to reliably categorize their attrition. Thus, this finding for low attrition rates for recruits with other race/ethnic backgrounds is a new one.

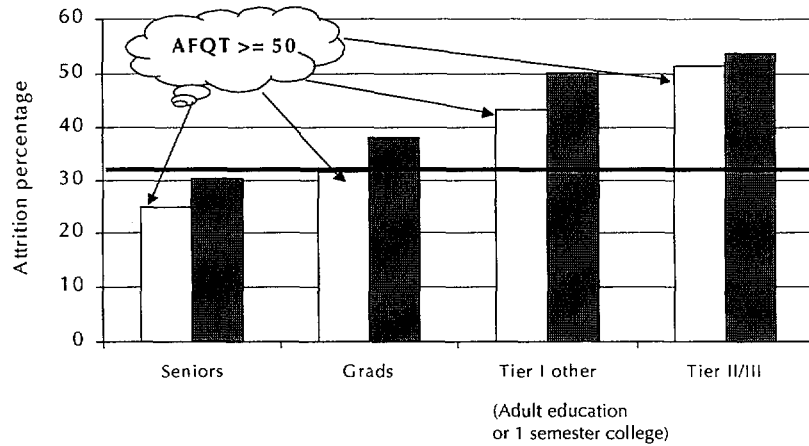
Finally, we look at the season in which the recruit began MCRD. The 45-month attrition rates follow the pattern previously discussed for MCRD attrition. In particular, recruits entering in the summer, in JJAS, have significantly lower first-term attrition rates.

Quality has often been defined by education and AFQT scores. Figure 10 uses the educational categories we established in table 2, but separates the attrition of those male recruits scoring in the top half of the ability distribution (AFQT score in the 50th percentile or higher) from those with lower scores.

Figure 11 shows the same information for female recruits entering in FY 1995 and 1996. Average 45-month attrition for these recruits was 48.2 percent. As with the male accessions, however, there are sharp attrition differences between those in the different educational backgrounds.

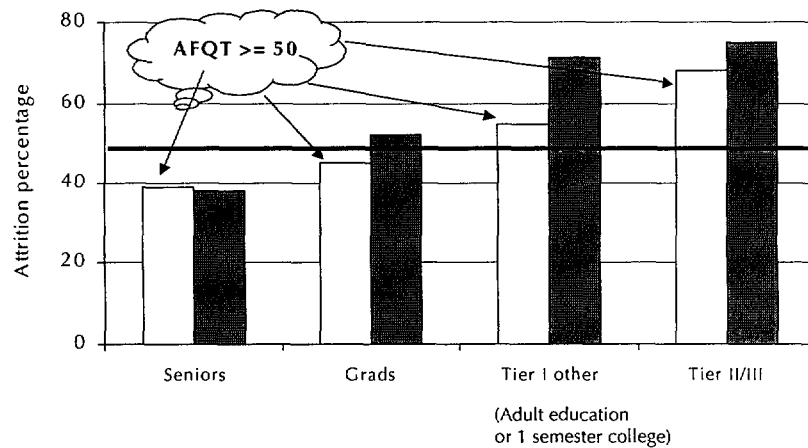
16. DOD establishes the education codes in Tier I.

Figure 10. 45-month non-EAS attrition rates: male regular accessions in FY 1995–1996^a



a. The white bars represent recruits with AFQT scores in the 50th or greater percentile. The dark bars represent recruits with AFQT scores below the 50th percentile. We divided DOD Tier I recruits into three categories: seniors (those contracted as seniors and shipped as high school diploma graduates), grads (the rest of Tier I except adult education and 1 semester college), and Tier I other (adult education and 1 semester college).

Figure 11. 45-month non-EAS attrition rates: female regular accessions in FY 1995–96^a



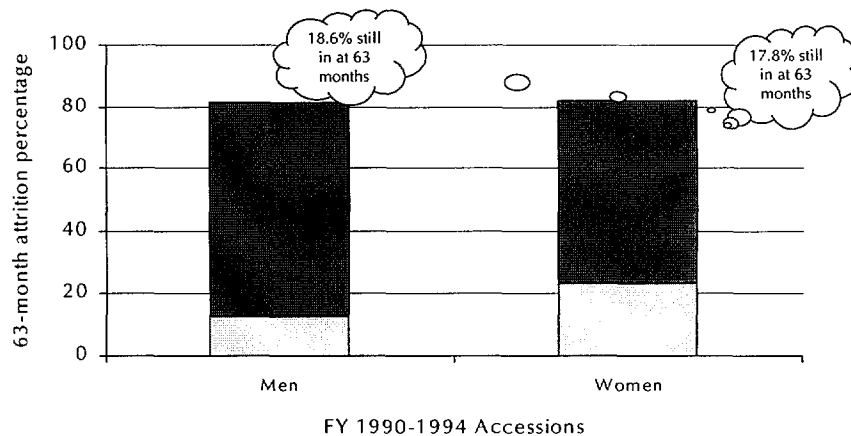
a. The white bars represent recruits with AFQT scores in the 50th or greater percentile. The dark bars represent recruits with AFQT scores below the 50th percentile. We divided DOD Tier I recruits into three categories: seniors (those contracted as seniors and shipped as high school diploma graduates), grads (the rest of Tier I except adult education and 1 semester college), and Tier I other (adult education and 1 semester college).

Retention beyond the first term of service

Despite the fact that female Marine Corps accessions have substantially higher MCRD attrition than male accessions, the long-term retention of female Marines has usually been as high as (or higher than) that of their male counterparts. For this to be so, the post-bootcamp attrition (both non-EAS and EAS) of female Marines must be substantially lower than that of males.

We looked at all male and female regular accessions in FY 1990–1994. We wanted to follow them through the first reenlistment point. We picked 63 months of service.¹⁷ Even though bootcamp attrition was 23.3 percent for the female Marines (12.8 percent for the male Marines), by 63 months of service the EAS and non-EAS attrition rates were 81.4 percent for the men and 82.2 percent for the women. We show this in figure 12.

Figure 12. EAS and non-EAS attrition at 63 months of service



17. We wanted to use the most recent accession data possible to analyze long-term retention, but we also wanted to observe EAS attrition. At 63 months of service, virtually all FY 1990–1994 accessions have had a first-term EAS. We used MCAID for this analysis.

What does it mean that, after bootcamp, female Marines stay in the Corps at even greater rates than males? We have always interpreted this behavior to mean that female Marines have found good career opportunities and chances to Excel in the Marine Corps. In other words, if female Marines did not find opportunities to build solid careers in the Corps, we would not observe this retention behavior.

Let's turn now to a discussion of the databases we used for these analyses.

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MCAR and MCAID databases

For the Street-to-Fleet study, we created two PC Windows databases for Marine Corps enlisted accessions:

- MCAR (Marine Corps attrition reasons)
- MCAID (Marine Corps attrition interactive database).

We experimented first with just one database, but its size made the tabulations much too slow. Moreover, we knew that the database would grow over the years, making the tabulations even slower. After discussions with the study sponsors and with our study advisory committee (SAC), we decided to make two databases—one that focused on reasons for attrition (MCAR) and another (MCAID) that focused on a richer set of accession characteristics.¹⁸

Each of these databases has 22 years of accession data for Marine Corps regulars.¹⁹

18. When installing a new version of MCAID or MCAR on the PC, the user must go to the control panel and use the “add/delete programs” to remove any earlier versions. This procedure is very fast, but it is necessary to close all applications during installation.

19. The data include all separations through December 2000. Thus, 3-month attrition for FY 2000 accessions can be analyzed.

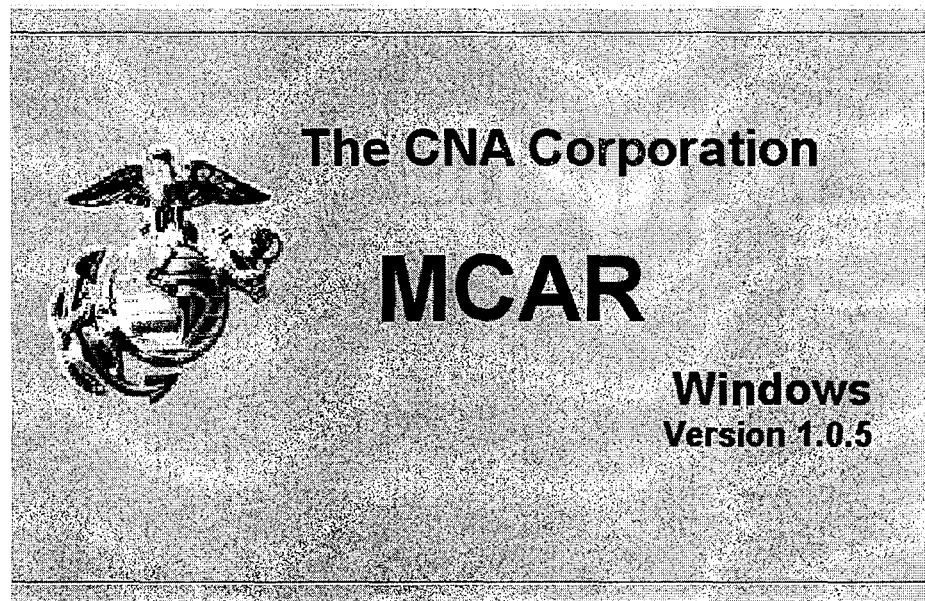
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Using MCAR

Getting started

Clicking on the MCAR icon on your desktop brings the front page of MCAR into view (figure 13).

Figure 13. MCAR front page

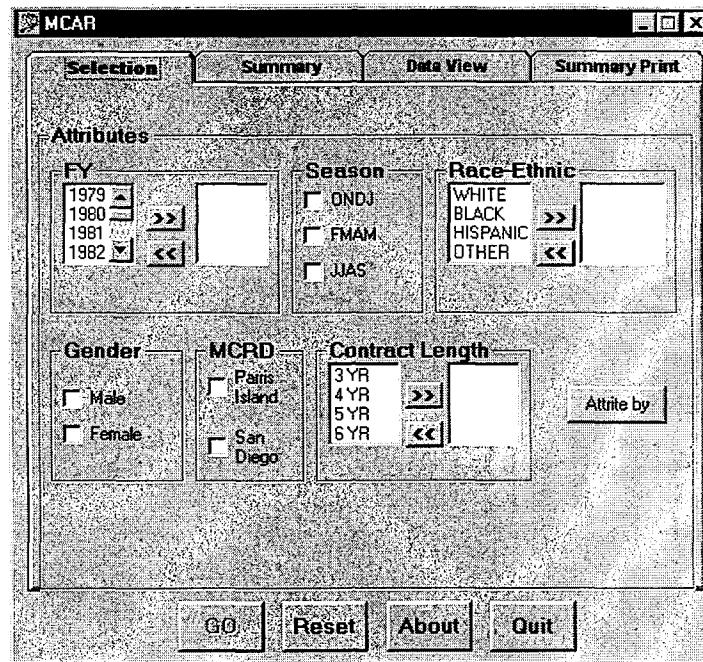


Clicking on it again makes it disappear for a few seconds before the selection screen of inputs appears (figure 14). The selection screen is one of four tabs: selection, summary, data view, and summary print.

The selections on the screen are accession year(s), length of first-term contract, gender, race/ethnic background, MCRD attended, and accession season. Accession seasons are October, November, December, and January (ONDJ), February, March, April, and May

(FMAM), and June, July, August, and September (JJAS).²⁰ After the selections are made by the user, the user clicks on the “atrrite by” button, and the time periods that can be selected appear.²¹

Figure 14. Selection screen of inputs



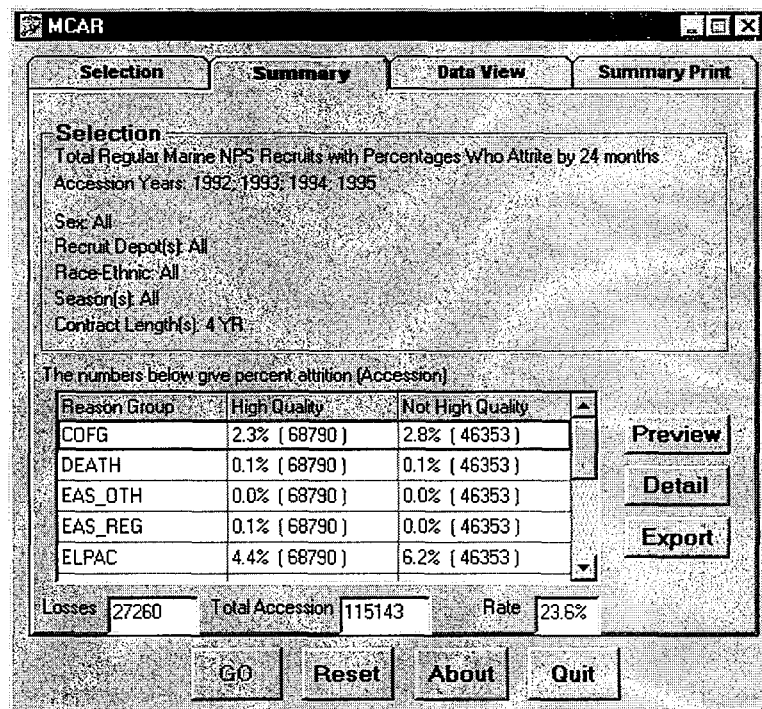
20. Accession planning is based on these three time periods. Because accession phasing over the three seasons is not even, many other aspects of Marine Corps planning are affected.

21. The choices—made after careful discussions with our sponsors—are 3, 6, 12, 24, 37, 39, 49, 51, 61, 63, or 73 months. The Marine Corps has used 3-, 4-, 5-, and 6-year contracts over the years. One might think that all end-of-service (EAS) separations would be completing exactly the number of months in the contract (that 49 months—completing 48 months and attriting before completing 49 months—would have all the EAS separations). Unfortunately, that is not the case because some EAS separations are delayed. Thus, the selections of 39, 51, and 63 months are to allow the user to pick up all the EAS separations.

Which selections are available depends on the most recent accession year to be analyzed. For example, if FY 1999 is included in the selection, the maximum time period for which attrition can be observed is 12 months, given that the separation data are now current through September 2000.

For this example, we selected accession years 1992 through 1995, both recruit depots, all race/ethnic categories, all seasons, and 4-year contract lengths. We picked 24-month attrition; this means that the Marine attrited before completing 24 months of service. After the attrition months are selected, the user clicks on the GO button. The database program then moves from the selection screen to the summary screen where the summary table for the selection is found (see figure 15).

Figure 15. Summary screen^a



a. Pressing the Preview button opens the summary print page, which can be viewed and printed. Clicking on the Summary Print tab at the top of this page will not result in a summary print. The user must click on Preview first.

The user can print the table from this summary screen by selecting Preview. This moves the user to the summary print page. The user prints from this page. The table identifies all the attributes of the chosen population (in this example, accession years FY 1992 through FY 1995, both genders, all race/ethnic groups, all accession seasons, and 4-year contract lengths). It will show the overall 24-month loss rate (23.6 percent), the total accessions (115,143), and the total losses (27,260). Loss rates are identified by attrition reason²² and are divided into high-quality and not-high-quality accessions. The accession quality definitions are:

- High quality: AFQT category I-III A (testing in the 50th percentile or higher on the AFQT) and our definition of Tier I that does not include the educational backgrounds of adult education or 1 semester of college.²³
- Not high quality: All other recruits.

Exporting the data

After examining the summary and printing the summary table, the user may want to export the data for further analyses.²⁴ Selecting the Export button on the summary screen shown in figure 15 produces a “specify export file name” window. The default name for this file in this window is the number of months selected for the attrition analysis and the file type is comma-delimited (here, the complete default file name is *attriteby24.csv*). The top of the window has the default location in which the file is to be saved—namely, in the MCAR folder in the program drives on the C drive. We change this, saving all our MCAR runs in a new folder we have created for this purpose.

22. See appendix A for separation codes in each separation reason category.

23. Recruits with educational backgrounds of adult education or 1 semester of college have generally had much higher attrition rates than other Tier I educational categories.

24. Although the study tasking was for a database that produced summary tables, we were able to both satisfy the study tasking and provide an even richer tool for further analyses, with the ability to export the data.

The file looks exactly like an Excel file (see table 3 for a sample). Because this file is under 66,000 lines (the limit for the current version of Excel), we can open it directly in Excel. Then we use “save as” to save it as *attriteby24.xls*.²⁵

Our Excel file has the following variables: year, sex, MCRD, contract (length of obligation), season, attrition reason group, quality, attrition period, DEP greater than or equal to 3 months, race/ethnic background, and contracted as a senior (senior). All these variables identify the characteristics row of grouped data. In brief, the Excel file is arranged so that each line of the file is a particular category of Marines with identified attributes (education, senior, DEP, etc.). Each line also contains three counts of the number of Marines who fit these characteristics:

- How many accessions?
- How many of these accessions attrited at bootcamp?
- How many of those accessions attrited by the number of months selected (in our case, 24 months). Here, this variable is *attriteby24*.

Table 3 shows some of the rows in this file. Note that every Marine who matched the selection criteria is represented in the file. Note also that there are only attrition counts for the number of accessions that attrited at MCRD or by 24 months. This file, then, can only be used to analyze bootcamp attrition²⁶ or 24-month attrition. If the user wants to analyze 3-month attrition, the user should go back to MCAR, make those selections, and export another Excel file (*attriteby3*).

25. It is easier to have it as an Excel file because the csv file type does not support multiple pages. If the file contains many years of data, it may well have more than 66,000 lines. In this case, the file can only be analyzed by Excel as an external data file. See appendix B.

26. Because MCRD attrition is not tied to a specific attrition month but could occur in any of the first 12 months, we have included it as a variable in all of the MCAID/MCAR selections. Remember that our definition of MCRD attrition is any attrition from the MCRD MCCs (016 or 017) within the first 12 months of service.

Table 3. Example of part of an exported file^a

Yr	Sex	MCRD	Con- tract	Season	Race	Reason	Senior	BC seps	Qual.	DEP >=3	Acces- sion	Attrite by24
94	F	PI	4	FMAM	B	COFG	0	1	High	1	1	1
94	F	PI	4	FMAM	W	Erron	0	2	Not	0	3	3
94	F	PI	4	JJAS	W	COFG	1	0	High	1	5	0
94	M	SD	4	ONDJ	H	EAS_reg	1	0	Not	0	6	6
94	M	SD	5	JJAS	W	EAS_reg	1	1	High	1	23	0
94	M	SD	4	JJAS	W	ELPAC	0	1	Not	1	5	5
94	M	SD	4	JJAS	W	Fraud	0	0	High	0	13	0
94	F	PI	4	ONDJ	W	COFG	1	0	High	0	9	9
94	F	PI	4	ONDJ	W	Phydis	0	1	Not	0	15	15
94	F	PI	5	FMAM	H	Miscon	1	0	High	1	7	0
94	M	SD	4	FMAM	B	Miscon	1	0	High	1	5	0

a. Note that many of variables have values in them (for example, sex has the value of F or M). Other variables, such as senior and DEP>=3, are flags; values of 1 indicate "true" and values of 0 indicate "false." For example, a 1 in senior means that the Marine was recruited while a senior, whereas a value of 1 in DEP>=3 means that the recruit spent 3 or more months in the DEP.

Next we will go through some examples of how these Excel files can be further used to analyze attrition for the selected group.

Using pivot tables in Excel to analyze files produced by MCAR

The next couple of pages show examples of pivot tables that can be used to further explore attrition. Anyone who is not familiar with pivot tables should take the time to learn how to do them. They are quite easy to use and don't involve any detailed Excel knowledge.

To use the pivot table option, all columns in the Excel file must have a header, as they do in MCAR and MCAID. To start, click on the left-most cell of the data sheet (the one that is northwest of A1). That should highlight all data. Then, go to the pull-down Data option and select pivot table. Pick "next," and again pick "next," and then "lay-out." A screen will appear that allows the user to move everything around to customize the table.

There are four basic choices: page, row, column, and data. After dragging a variable into the pivot table area, clicking on it gives lots of choices: sum, count, etc. Here it is important to remember how the

Excel file is arranged. Each line of the file is a particular category of Marines with identified attributes (education, senior, DEP, etc.). Each line also contains three counts of the number of Marines with the attributes described in the line:

- Number of accessions (called accessions)
- Number attrited at MCRD²⁷
- Number of Marines attrited by the number of months attrition selected.

Aside from analyzing bootcamp attrition, each Excel file should only be used to analyze attrition for the number of months selected.

Let's look at a pivot table that looks at accession year, season, and DEP greater than 3 months. These classifiers are then used to get attrition rates by using the attriteby24 variable and the accession variable. The user wants the attriteby24 variable and the accession variables as sums to be able to sum up the counts that are in each line of the file.²⁸ The layout for this pivot table is shown in figure 16.

After we are satisfied with the pivot table, we click on OK at the bottom of the screen. After we've got the pivot table, we can calculate a new variable for the attrition rate, specifically a new variable for the 24-month attrition rate. To do this, put the cursor on a cell in the pivot table and then, on the pivot screen menu, pull down on the pivot table that is on the upper left of the screen menu. Select "formulas" and then "calculated field." We show this in figure 17.²⁹ We use the "insert field" to insert the names into the formula. This new variable is called "sum of" whatever the user puts in the name field. For example, it would be "sum of field1" if the user did not overwrite the name field. Figure 18 shows part of the output of the pivot table.

27. Attrited within the first 12 months of service at MCRD, PI, or MCRD, SD.

28. Use of the count function in pivot tables would result in just the number of lines that fit the category.

29. Appendix B provides more information on how to compute a new variable.

Figure 16. Pivot table and pivot chart wizard: Layout

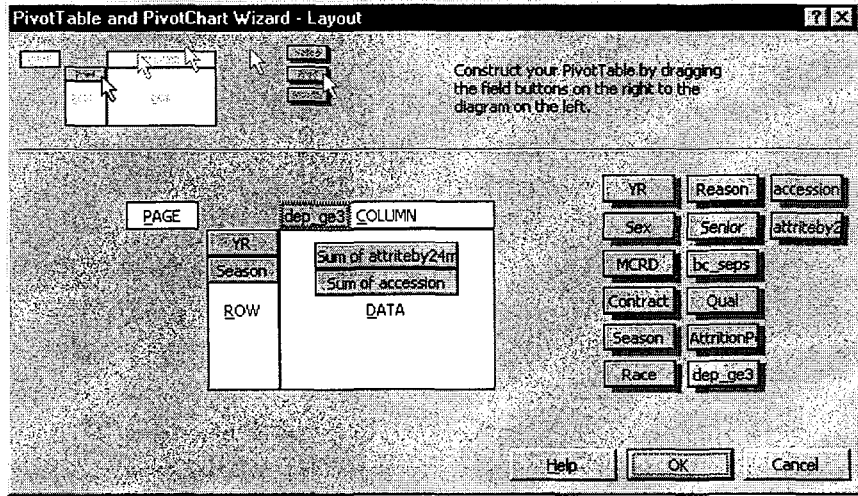
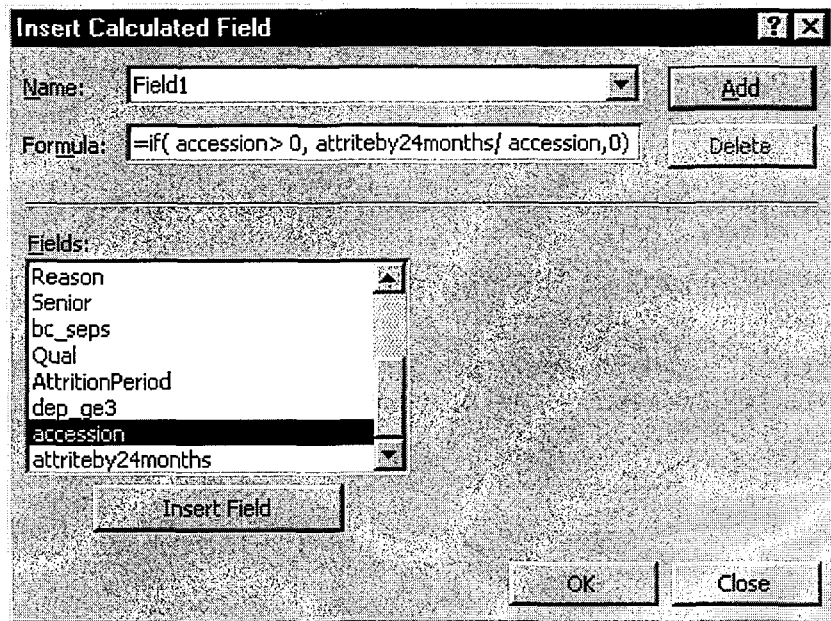


Figure 17. Making a new variable: Insert calculated field^a



a. To find out more about the formula function and putting calculated fields into Excel pivot tables, we refer the reader to an Excel manual.

Figure 18. Example of Excel pivot table^a

YR	Season	Data	dep_ge3		Total
			0	1	
1992	FMAM	Sum of attriteby24months	732	1,096	1,828
		Sum of accession	2,765	4,547	7,312
		Sum of attrition rate	26.5%	24.1%	25.0%
	JJAS	Sum of attriteby24months	465	1,683	2,148
		Sum of accession	1,833	7,997	9,830
		Sum of attrition rate	25.4%	21.0%	21.9%
	ONDJ	Sum of attriteby24months	375	1,517	1,892
		Sum of accession	1,522	7,237	8,759
		Sum of attrition rate	24.6%	21.0%	21.6%
1992 Sum of attriteby24months			1,572	4,296	5,868
1992 Sum of accession			6,120	19,781	25,901
1992 Sum of attrition rate			25.7%	21.7%	22.7%

a. Note the dep_ge3 variable is shown as a 0,1 variable (false or true).

Figure 18 shows only one year of the pivot table. As can be seen from the table, recruits with time in the DEP of at least 3 months have lower attrition than other recruits. This is particularly true for recruits who enter in the summer or the fall.

Using the attrition reason categories with pivot tables in Excel

As we have stated before, one does not want to look at attrition rates for anything other than bootcamp separations or the number of months selected in the attriteby selection for the Excel file. This also holds for any analysis of attrition reasons.

There are two basic ways to analyze separation reasons:

- Attrition percentage: the percentage of the accessions that left for a particular attrition reason. This calculation is done by dividing the number attrited for a particular reason by the total number of accessions.
- Reason percentage: the percentage of the separations that left for a particular attrition reason. This calculation is done by dividing the number attrited for a particular reason by the total number of separations.

First, we look at attrition reasons for MCRD separations. To do this we constructed a pivot table with year and reasons as the row variables and “bc_seps” as the data element. In this example, we didn’t use a column variable.³⁰ We show the example with FY 1994 accession data in figure 19. The grey part of the figure comes directly from the pivot table in Excel. Both the attrition percentages and the reason percentages are our calculations. Overall 12.9 percent of FY 1994 accessions with 4-year contracts attrited from bootcamp; the main attrition reasons were entry-level performance and conduct (ELPAC) and erroneous or fraudulent enlistments.

Figure 20 shows similar information for male FY 1996 accessions with 4-year contracts. Once again, the grey part of the figure is pivot table information; the white background presents our calculations.³¹

-
30. We’ve found it difficult to use a column variable when analyzing attrition reason. One needs to be able to do the calculations next to the columns, and it is not possible to write within a pivot table.
31. We urge the user to be careful using the separation reason variable. The field can only be accurately used for MCRD separations or for separations for the number of months of attrition represented in the file.

The footnote to figure 19 should also help to clarify the meaning of the separation reason variable for those who did not separate in the period of analysis.

Figure 19. Using Excel pivot table to find attrition reasons for MCRD attrition: 1994 accessions with 4-year contracts

YR	Reason	Data	Total	Attrition percentage	Reason percentage
1994	COFG	Sum of bc_seps	74 *	0.3%	1.9%
		Sum of accession	1040 **		
	DEATH	Sum of bc_seps	0 *	0.0%	0.0%
		Sum of accession	86 **		
	EAS_OTH	Sum of bc_seps	0 *	0.0%	0.0%
		Sum of accession	700 **		
	EAS_REG	Sum of bc_seps	0 *	0.0%	0.0%
		Sum of accession	13814 **		
	ELPAC	Sum of bc_seps	1294 *	4.4%	33.9%
		Sum of accession	1376 **		
	ERRON	Sum of bc_seps	920 *	3.1%	24.1%
		Sum of accession	1158 **		
	FRAUD	Sum of bc_seps	1189 *	4.0%	31.1%
		Sum of accession	1294 **		
	MISCONDT	Sum of bc_seps	15 *	0.1%	0.4%
		Sum of accession	3303 **		
	OTHER	Sum of bc_seps	0 *	0.0%	0.0%
		Sum of accession	1 **		
	PHYDIS	Sum of bc_seps	325 *	1.1%	8.5%
		Sum of accession	2545 **		
	PREGPAR	Sum of bc_seps	0 *	0.0%	0.0%
		Sum of accession	128 **		
	UNK	Sum of bc_seps	0 ***		
		Sum of accession	3923 ***		
	UNSAT	Sum of bc_seps	5 *	0.0%	0.1%
		Sum of accession	183 **		
1994	Sum of bc_seps		3822 *	12.9%	100.0%
1994	Sum of accession		29551		
Total	Sum of bc_seps		3822		
Total	Sum of accession		29551		

*Left at MCRD for the reason provided

**Left after MCRD for the reason provided

***Still in Marine Corps as of September 2000, (last update of file).

Figure 20. 49-month attrition reasons: 1996 accessions with 4-year contracts

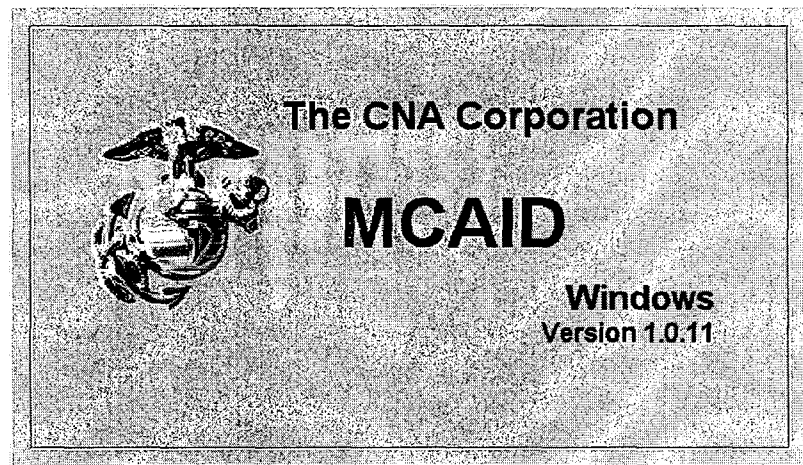
Reason	Data	Total	Attrition percentage	Reason percentage
COFG	Sum of attriteby49months	1132 *	3.7%	5.3%
	Sum of accession	1138 **		
DEATH	Sum of attriteby49months	80 *	0.3%	0.4%
	Sum of accession	81 **		
EAS_OTH	Sum of attriteby49months	445 *	1.5%	2.1%
	Sum of accession	462 **		
EAS_REG	Sum of attriteby49months	11006 *	35.9%	51.8%
	Sum of accession	12064 **		
ELPAC	Sum of attriteby49months	1135 *	3.7%	5.3%
	Sum of accession	1136 **		
ERRON	Sum of attriteby49months	1183 *	3.9%	5.6%
	Sum of accession	1183 **		
FRAUD	Sum of attriteby49months	1474 *	4.8%	6.9%
	Sum of accession	1475 **		
MISCONDT	Sum of attriteby49months	3179 *	10.4%	15.0%
	Sum of accession	3286 **		
PHYDIS	Sum of attriteby49months	1474 *	4.8%	6.9%
	Sum of accession	1518 **		
PREGPAR	Sum of attriteby49months	13 *	0.0%	0.1%
	Sum of accession	13 **		
UNK	Sum of attriteby49months	0 ***		
	Sum of accession	8177 ***		
UNSAT	Sum of attriteby49months	137 *	0.4%	0.6%
	Sum of accession	140 **		
Total Sum of attriteby49months		21258	69.3%	100.0%
Total Sum of accession		30673		

Note: *separated by 49 months, **separated after 49 months, ***still in Corps Sept '00

Using MCAID

Clicking the MCAID icon on your desktop brings the front page of MCAID into view (figure 21). Clicking on it again makes it disappear for a few seconds before showing the selection screen (figure 22).

Figure 21. MCAID front page

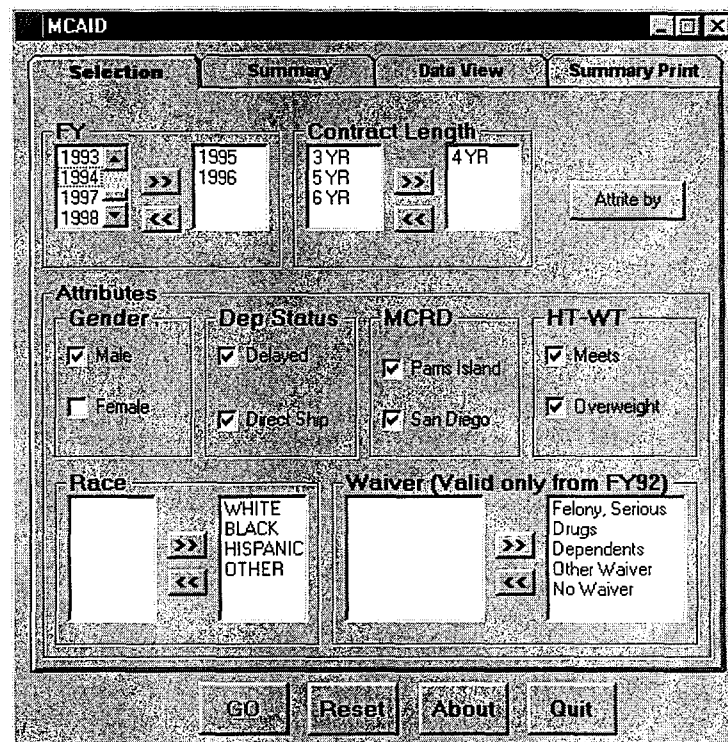


The selections on the screen are accession year (FY), length of first-term contract (contract length), gender, delayed entry pool or direct ship accession (DEP status),³² MCRD, meets (or didn't meet) the retention weight-for-height standard (HT_WT), race/ethnic

32. This is the CNA definition of DEP. Shipping in a month after signing the contract makes a person a DEP accession. Direct-ship (DS) accessions ship in the month they sign their contracts. If the data are exported to an Excel file, there is an additional DEP variable—DEP for 3 or more months or not.

background (race), and enlistment waiver (waiver).³³ After making the selections, the user clicks on the “attrite by” button and the time periods that are available appear.³⁴

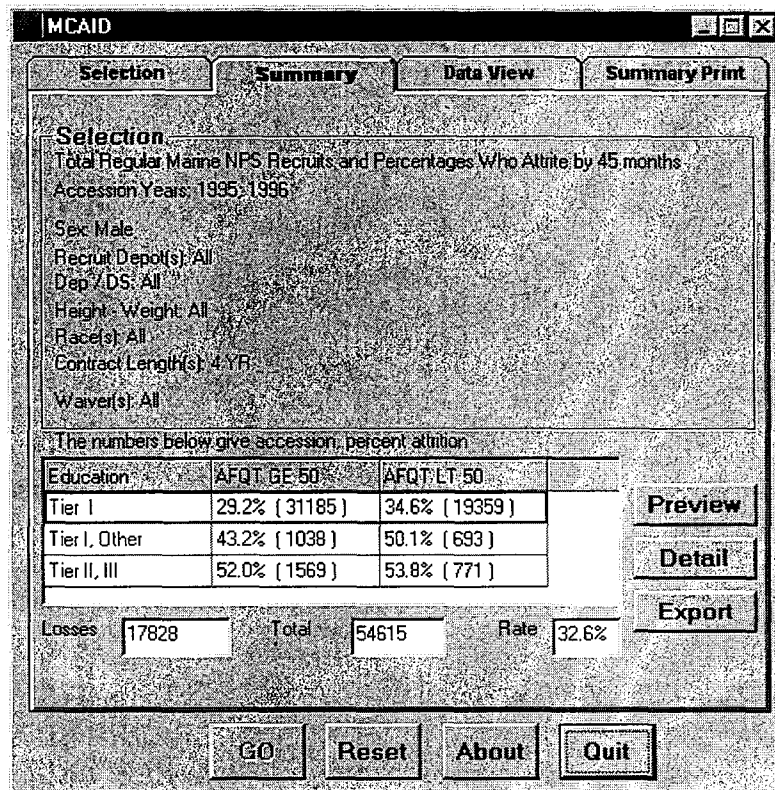
Figure 22. An example of the MCAID selection screen



33. The waiver categories are dependents, drug, felony (includes serious misdemeanor), no waivers, or another type of waiver. Some Marines entered with more than one waiver. For this variable, we ranked the waivers as felony, drugs, dependents, other waiver, no waiver, and gave the Marine the first category that applied.

34. These are months, from 1 to 73. The maximum months given in the “attrite by” selection is automatically calculated by the program; it is determined by the most recent year selected.

Figure 23. Example of summary screen for a MCAID run^a



a. Pressing the Preview button opens the summary print page, which can be viewed and printed. Clicking on the Summary Print tab at the top of this page will not result in a summary print. The user must click on Preview first.

For the examples shown in figure 22 on the selection screen and on figure 23 on the summary screen, we selected male 1995 and 1996 accessions with 4-year contracts, both delayed and direct-ship accessions, both recruit depots, both those who met and didn't meet the weight-for-height standard, all race/ethnic categories, and all waiver categories. After clicking on the "attrite by" button on the menu screen (figure 22), we selected 45 months. At this point, the GO button is activated and we clicked it. The database program then moves from the selection screen to the summary screen where the summary table for the selection is found.

The user can print the table from this summary screen by selecting preview. This moves the user to the summary print page where the user selects print.

The summary screen shows that we have 54,615 accessions that fit this category and that the 45-month attrition rate is 32.6 percent. The table also shows the attrition rates and number of accessions by education category and AFQT percentiles. These rates varied from 29.2 percent for Tier I recruits with AFQT scores of 50 or above, to over 50 percent for the Tier II and Tier III recruits.

Variable or attribute descriptions in MCAID

Table 4 briefly describes the variables or attributes in MCAID, and the number of missing observations through FY 1999.

Table 4. Attributes, descriptors, or variables in MCAID

Variable	Description	Missing observations
Year	FY of accession	None
Gender	Male or female	21 in FY79-91 None in FY92-99
MCRD	Parris Island or San Diego	1 in FY79-91 394 in FY92-99
Contract	3, 4, 5, or 6 years	362 in FY79-91 111 in FY92-99
DEP	Delayed entry or direct ship (shipped in month signed contract)	3,172 in FY79-91 None in FY92-99
Race	White, black, Hispanic, or other	None in FY79-91 18 in FY92-99
Height/Weight (H/W)	Meets or doesn't meet the in-service weight-for-height standard, see text	52 in FY79-91 202 in FY92-99
Months	Number of months, see text	None
Senior	Contracted as a senior	None
BC_separation	Separated at bootcamp. MCC is 016 or 017 and separated within 1st 12 months of service	None
Waiver	Waivers in this order: felony/serious misdemeanor, drugs, dependents, other type of waiver, or no waiver	None
Dep_ge3	In delayed entry program 3 or more months	3,172 in FY79-91 and none in FY92-99
Education	See text	None
MG	AFQT greater than or equal to 50 or not	None

One of the items in table 4 is the number of missing observations. To put the number of missing observations in perspective, there are over 750,000 accessions in the MCAID and MCAR databases. Thus, the number of missing observations is very small. If a user picks a particular category (e.g., Hispanic), missing observations on the race/ethnic variable are clearly not included. If, however, all race/ethnic categories are selected, any race/ethnic observations with missing are included in the tabulations. We now turn to a fuller discussion of some of the variables or attributes than is provided by table 4.

Educational categories in MCAID

Tier categorization provided by DOD: Tier I, Tier II, and Tier III

Tier I recruits have the following educational credentials: high school diploma graduate, associate degree, nursing degree, BA or BS, MA or MS, post-Master's, doctorate, first professional degree, completed 1 semester of college or adult education.

Tier II recruits are primarily GEDs, but the category also includes certificates of completion, completed 12th grade and received certificate indicating attendance, correspondence high school, home schooling,³⁵ occupational program certificate, or certificate of attendance.

Tier III recruits have less than a high school diploma and are usually referred to as dropouts.

Current Marine Corps policy mandates that 95 percent of accessions must be Tier I, meaning the DOD Tier I definition. In our educational categorization in MCAID, we extract from Tier I those recruits with educational backgrounds of adult education or 1 semester of college. These we call "Tier I other." We did this based on historical attrition behavior of these two categories of recruits. We group Tier II and

35. For a congressionally mandated experiment, home-schoolers were reclassified for a period of 5 years, starting in 1999, as Tier I accessions. For MCAID, we have kept home-schoolers in Tier II. Any analysis of home-schoolers, however, would necessitate the SSN-based files and restricting the analysis to those with an "H" in educational certificate field.

Tier III accessions together, both because their numbers are so small and because historically their attrition behavior has been similar.

DOD Tier I

Called Tier I in MCAID

Senior: These are Marines who were contracted as seniors and shipped as high school diploma graduates. Research has shown that this group has unusually low attrition. This categorization is available only from FY 1992 onward because we do not have educational status at contracting information for recruits before FY 1992. When the data from MCAID are exported to a spreadsheet, these “seniors” can be analyzed separately.

“Grad”: These recruits are the rest of Tier I, except for recruits whose educational credentials are adult education or 1 semester of college. Recruiters refer to them as the “grad market” to distinguish them from the “senior market.” These latter two groups have historically had very high levels of attrition, and are separated out.

Called Tier I other in MCAID

Adult ed/1 semester college: These recruits have educational credentials of adult education or 1 semester of college.

DOD Tier II/III: These are identified the same way (Tier II/III) in MCAID.

These recruits are primarily GEDs, although there are some dropouts and a few others from Tier II categories.

Bootcamp separations

As in MCAR, the variable for bootcamp separations (*bc_sep*) is a count of the bootcamp separations for the category of recruits represented by a row of data in the file. In both cases, since bootcamp separations are sometimes delayed—particularly for Marines who are injured or who must interrupt training for some other reason—we define bootcamp separations as those separations that occur within

the first 12 months of service from MCRD, PI (MCC of '016') or MCRD, SD (MCC of '017').

Months

The MCAID and MCAR databases were designed to monitor attrition through 72 months of service. *For the first 72 months of service*, the months variable is calculated as follows:

- For those who have separated, calculate months by subtracting the ADBD from the separation date.
- For Marines who are still in the Corps as of the last file update (currently September 2000), the months variable is the difference between the ADBD and September 2000.

For Marines who are still in the Corps at 73 or more months of service, or who separated after 73 months of service, the variable has the value of 73.

Trying to do attrition calculations by using the months variable is bound to cause numerous errors. The MCAID file should only be used for bootcamp attrition or for the number of months selected in the “attrite by” for the particular the database run.

Weight-for-height standard

The retention weight-for-height standard is provided in a table in appendix A. The variable is called HW and values in HW are “overweight” and “meets.” We use the retention weight-for-height standard primarily because it has been constant over a long period. Enlistment weight-for-height standards have usually been expressed as some percentage of the retention standard.

Exporting MCAID data and pivot tables

The procedures for exporting data in MCAID and using these data in pivot tables are the same as the procedures discussed for the MCAR database. We refer the reader to that discussion, as well as to appendix B for the discussion of large files.

When users export data for further analysis, it make sense to include additional information in the file name. The program starts with the file name *attritebyxx* where xx is the number of months selected for the analysis of attrition. We usually include in our file names:

- Whether the data are from MCAID or MCAR
- The fiscal years of the data
- Any specifics (if the data do not include all the values of all the variables for the fiscal year/years).

We list below examples of file names we have used for our csv data files:

- *MCAID_attriteby45_9596*
- *MCAR_attriteby12_79_99*
- *MCAID_attriteby36_males_90_95*.

Excel files have a limit of about 66,000 lines. To analyze larger files, we keep the file as a csv file that has no line limit. We then analyze these files as external files within Excel. Appendix B explains how to do this. We have found the pivot tables we can do and re-do with these files to be extremely powerful analytic tools.

Appendix A: Separation reason categorization, retention weight-for-height table, and enlistment waiver codes

Separation reasons

End-of-active-service (EAS) separations

EAS_REG: These are regular EAS losses.

EAS_OTH: These include early outs, reduction in force (RIF), high-year tenure separations (HYT), no future service (NFS), and voluntary separation incentive (VSI)/selective separation bonus (SSB) separations. Note that most MC computer programs group these two EAS categories together.

Non-end-of-active-service (non-EAS) separations

Recruit separations

Fraudulent enlistments: According to the codes' manual, these fraudulent enlistment separations should only be given to recruits at the MCRDs. However, recruit separation codes, such as fraudulent enlistments, are sometimes used after MCRD.

Erroneous Enlistments: According to the codes' manual, these erroneous enlistment separations should only be given to recruits at the MCRDs. However, recruit separation codes, such as erroneous enlistments, are sometimes used after MCRD.

Entry-level performance and conduct (ELPAC): According to the codes' manual, these ELPAC enlistment separations should only be given to recruits at the MCRDs. However, recruit separation codes, such as ELPACs, are sometimes used after MCRD.

Other non-EAS separations

Convenience of the Government (COFG): Convenience of the government separations fall into the following categories: SECNAV, conscientious objector, alien, sole survivor, hardship, marriage, security, physical condition - not disability (PCND), mental (personality disorder), accepting commission, voluntary transfer to another branch, or failure to obtain commission.

Pregnancy/Parenthood: These are defined as COFG separations, but we have separated them out. Analysts wanting all COFG separations should combine these separations with the above category (COFG).

Physical Disability: These separations include those separations to the retired list (permanent and temporary disability), separations with severance pay, separations for conditions that existed prior to entry (EPTE), physical disability separations with misconduct, separations to prevent further injury, not physically qualified, and other physical disability separations.

Misconduct: These separations include those for alcohol, civilian offenses, deserters, drugs, general and special court martials, homosexuality, minor disciplinary infractions (MDI), pattern of misconduct (POM), serious offenses, sexual perversion, unauthorized absences, and other types of misconduct.

Unsatisfactory performance: Unsatisfactory performances separations are for weight, performance, unsanitary habits, or unsuitability.

Death: These are deaths.

Other: There are very few of these. They are basically miscoded SDNs (one digit, etc.).

Specific separation codes

We include below a listing of all Marine Corps individual separation codes and the associated attrition reason category.

End of active service, normal end of contract (EAS REG)

'JBK1','XBK2','LBK1','XBK1','VBK2','VBK1','MBK1','MBK5','KBK1','KBK2','LBM1','JBM1','MBM1','KBM1','MVF4','LBK2','KHCG','KFG1','KFG2','KHC1'-'KHC7','MBK2','MBK3','KBK3','MBK4'

End of active service, other (EAS OTH)

'MCF1','MCF2','MCF3','MCF4','KCF3','KCF1','MCG1','KDM4','MDM1','MDM2','MDM3','MDM4','MDM5','MDM6','KDM1','KDM3','RCC1','JCC4','JCC3','JCC2','JCC1','LCC3','LCC4','MCC1','KCC1','LDM2','LDM3','KGB1','JGH3','JGH1','JND3','KND1','JGH2','GGH1','KND2','KND3','NBD1','RBD1','KCA1','KCB1','KBD1','JNF3'

Fraudulent (FRAUD)

'JDA1','JDA2','JDA3','JDA4','JDA5','JDA6','YDA1','HDA1','GDA1','GDA2','GDT1','YDT1','JDT1','HDT1','KDT1','KDU1','GDU1','YDU1','HDU1','JDU1','JFB1','YFB1','YCP1','JCP1','KCP1','JFC9'

Erroneous (ERRON)

'GFC1','JFC2','JFC3','JFC4','JFC5','JFC6','JFC7','JFC8','GFC7','LFC1','YFU1','JFU1','JFW1','YFA1','JFA1','HFC1','YFC1','JFC1','KDS1','KDS2','YDN1','YKN2','YDN2'

Entry-level performance and conduct (ELPAC)

'JGA1','JGA2','JGA3'

Death (DEATH)

'8211'-'8691'

Convenience of the government (COFG)

KCK1','MCK1','KCM1','JCM1','MCQ1','KCQ1','MDB1','KDB1','MDC1','KDC1','JDK1','HDK1','KDK1','JFF1','JFF2','JFF4','KFF1','MFF1','JFG1','JFG2','LFG1','GFV1'...'GFV7'
'HFX1','JFX1','GFX2','KFX1','KGM1','KGM2','KGN1','MGP1','KGP1','MGQ1','MGU1','KGX1','KHD1','JHD1','JFV1'-'JFV7','GFX1','JFG3'-'JFG9','KFV1','KFV2','KBJ2','KHE1','HFV1','JDJ1','JGB3','JHF1','JNF1','JNF2','KBJ1','KFF2','KFF3','KFG4','KFG5','MFG1','MFG2','MND1'

Physical disability (PHYDIS)

'VFJ1','WFJ1','SFJ1','VFK1','SFK1','WFK1','JFR1'-
 'JFR3','JFL1','JFL2','JFM1','KFM1','JFN1','JFN2','JFN3','KFN1','JFP1','J
 FQ1','JFQ2','WFQ1','HFT1','JFT1','GFT1','RFJ1','RFK1','JFM2','JFM3

Misconduct (MISCONDT)

'KFS1','JJA1','JJB1','JJC1'-
 'JJC3','JJD2','JJD1','JJE2','JJE1','HKA1','GKA1','JKB1','GKB1','HKB1',
 HKD1','GKD1','JKD1','JKF1','HKF1','GKF1','PKF1','HKK1','GKK1','H
 KH1','GKL1','HKL1','HKM1','GKM1','HKN1','JKN1','JRA1','JRB1','JR
 C1','JJB3','GKN1','JKQ1','HKQ1','GKQ1','RNC1','SNC1','YPA1','HPC
 1','JPC1','GPD1','HPD1','JPD1','YPB1','HRA1','KRA1','GRA1','GRB1',
 HRB1','KRB1','GRC1','KRC1','HRC1','GKC3','GKE1','GKG1'-GKG8',
 'GKH1','JMG1','GPB1','GPC1','JKK1','JPB1','JJB2','JKC1','JKC2','JKC3'
 ',JMX1','JKA1','JKL1','JKG1','JKG9','JKJ1','HKE1','JKH1','HKKI','JPB4',
 'GMG1','KNL1'

Unsatisfactory performance (UNSAT)

'GCR1','LCR1','HCR1','HHJ4','HHJ3','GHJ3','GHJ4','JHJ4','JCR1','JH
 J1','GHJ1','HHJ1','HCR2','JHJ3','GMB1','JMB1','GHJ2','HHJ2','JHJ2',
 JMD1','JNC1','JPM1','GMB2','GMD1','GMJ1','GML1','GMP1','JMJ1','J
 MH1','GKJ1','JML1','JMP1'

Pregnancy or parenthood (PREGPAR)

'KDF1','MDF1','KDG1','LDG1','JDG1','MDG1','HDG1','GDG1','KDH1

Retention weight-for-height standard

Table 5 gives the standards of weight and height for both men and women.

Table 5. Retention weight-for-height standard

Height (inches)	Weight (pounds)	
	Men	Women
58		121
59		123
60	140	125
61	145	127
62	150	130
63	155	134
64	160	138
65	165	142
66	170	147
67	175	151
68	181	156
69	186	160
70	192	165
71	197	170
72	203	175
73	209	
74	214	
75	219	
76	225	
77	230	
78	235	

Enlistment waiver codes

The FY 1992–2000 ARMS data use the enlistment waiver codes that are shown in tables 6 and 7 and the moral waiver codes shown in table 8. DOD had instructed that a new all-service enlistment waiver coding scheme be put into effect in June 1999, but the Marine Corps

obtained permission to use its earlier coding scheme until the new accession system, MCRIS, is in place.³⁶

The ARMS database has three places where enlistment waivers can be given (at contract, at shipping, and at the depot). Each place has three positions for a 3-digit waiver code, as well as one position for a 3-digit moral waiver and one position for a 2-digit moral code. Thus, there are 15 different fields that need to be checked to establish waiver status. Because enlistment waivers are not carried onto to Marine Corps personnel files, it has sometimes been difficult to find codebooks that describe the individual codes. Thus, we detail the coding scheme in this final Street-to-Fleet report.

Table 6 shows the first and second digits of the waiver codes used in ARMS; the third digit refers to the conferring authority and is shown in table 7. Table 8 shows the moral waivers. These codes are unique to the Marine Corps and remained the same over the period.

36. We have verified that none of the new DOD enlistment waiver codes have been used in ARMS. The Marine Corps is coding FY 2001 accessions into both ARMS and MCRIS, using the enlistment waiver codes appropriate to each. ARMS is expected to be fully terminated by the fall 2001.

Table 6. First and second digits of 3-digit waiver code (codes used in ARMS)

First digit of code		Second digit of code	
Code	Explanation of code	Code	Explanation of code
A	Age, min/max limitation	Y	Not applicable
B	Limit on dependents - dependency	Y	Not applicable
C	Mental qualifications - basic enlistment	Y	Not applicable
D	Moral qualifications - police involvement	A	Minor traffic offenses
D	Moral qualifications - police involvement	B	Minor non-traffic offenses, three to five
D	Moral qualifications - police involvement	C	Minor non-traffic offenses, six to nine
D	Moral qualifications - police involvement	D	Serious offenses
D	Moral qualifications - police involvement	E	Felony (adult)
D	Moral qualifications - police involvement	F	Felony (juvenile/youthful offender)
D	Moral qualifications - police involvement	G	Pre-service illegal use of drugs
D	Moral qualifications - police involvement	H	Pre-service alcohol abuse
D	Moral qualifications - police involvement	P	Drug use in DEP
D	Moral qualifications - police involvement	S	Serious traffic offenses
E	Prior Service	Y	Not applicable
H	Physical qualification	Y	Not applicable
J	Sole surviving member	Y	Not applicable
K	Education	Y	Not applicable
L	Alien	Y	Not applicable
M	Moral/Drug Qualifications	A	Minor traffic offenses
M	Moral/Drug Qualifications	B	Minor non-traffic offenses, three to five
M	Moral/Drug Qualifications	C	Minor non-traffic offenses, six to nine
M	Moral/Drug Qualifications	D	Serious offenses
M	Moral/Drug Qualifications	E	Felony (adult)
M	Moral/Drug Qualifications	F	Felony (juvenile/youthful offender)
M	Moral/Drug Qualifications	G	Pre-service illegal use of drugs
M	Moral/Drug Qualifications	H	Pre-service alcohol abuse
M	Moral/Drug Qualifications	P	Drug use in DEP
M	Moral/Drug Qualifications	S	Serious traffic offenses
P	Skill requirement (minimum program qualifications)	Y	Not applicable
X	Other, not elsewhere classified (MREP)	A	Pilonidal cyst/pilonidal sinus
X	Other, not elsewhere classified (MREP)	B	Hemorrhoids
X	Other, not elsewhere classified (MREP)	C	Undescended testicle, unilateral
X	Other, not elsewhere classified (MREP)	D	Varicocele
X	Other, not elsewhere classified (MREP)	E	Hydrocele
X	Other, not elsewhere classified (MREP)	F	Inguinal hernia, unilateral
X	Other, not elsewhere classified (MREP)	G	Under minimum weight by not more than 10%
X	Other, not elsewhere classified (MREP)	H	Undescended testicle and inguinal hernia, same side
X	Other, not elsewhere classified (MREP)	I	Inguinal hernia and varicocele/hydrocele, same side
X	Other, not elsewhere classified (MREP)	J	Simple goiter
X	Other, not elsewhere classified (MREP)	K	Deviated nasal septum with airway obstruction
X	Other, not elsewhere classified (MREP)	L	External otitis
X	Other, not elsewhere classified (MREP)	M	Hyperactilia (hands and feet)
X	Other, not elsewhere classified (MREP)	N	Cystic acne, likely to benefit from antibiotic/Accutane therapy
X	Other, not elsewhere classified (MREP)	O	Gynecomastia, simple,not associated with or a result of endocrinopathy
X	Other, not elsewhere classified (MREP)	P	Ingrown toenail(s)
X	Other, not elsewhere classified (MREP)	Q	Orthopedic hardware requiring removal to meet military entrance standards (requires radiographic evidence of firm bony union)
X	Other, not elsewhere classified (MREP)	R	Phimosiis - when circumcision is required for hygienic reasons
X	Other, not elsewhere classified (MREP)	S	Hypertrophic tonsils and adenoids with airway obstruction
X	Other, not elsewhere classified (MREP)	T	Nasal polyps with airway obstruction
X	Other, not elsewhere classified (MREP)	U	Abdominal wall hernia - only primary hernias, no incisional hernias
Y	Not applicable	Y	Not applicable

Table 7. Third digit of 3-digit code (codes used in ARMS)

Code	Explanation of code
A	Commandant of the Marine Corps
B	Commanding General, Marine Corps Recruiting Region
C	Marine Corps District
D	Recruiting Station
G	MEPS
X	Selected Marine Reserve unit (I&I/CO of MARTD)
Y	Not applicable

Table 8. Two-digit moral code (valid entire period)

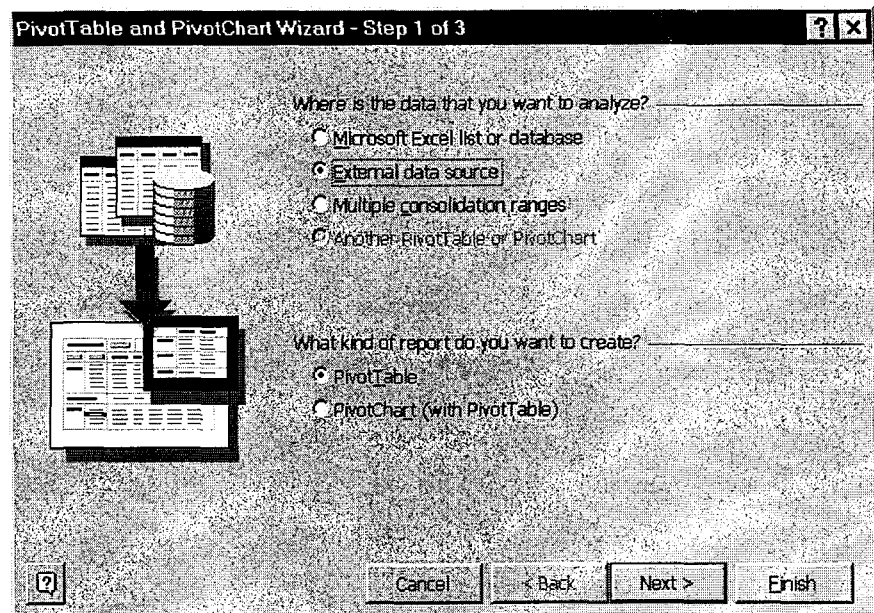
<u>Code</u>	<u>Explanation of code</u>
1F	Felony
2A	Probation in excess of 2 years court imposed incarceration, and/or hit and run traffic violations
2B	Probation for more than 1, but not more than 2 years: 10 or less nonfelony offenses, and/or DWI
2C	Probation up to and including 1 year, minor traffic violations, and/or 6 or less nonfelony offenses
3D	Drug involvement - nonfelonious
3E	Drug involvement - marijuana/hashish usage in excess of 10 times or in the 90 days preceding application for enlistment
3F	Drug involvement - felonious
CC	Clean

Appendix B: Keeping the exported file as a CSV file

Currently, Excel files have a limit of 66,000 lines. Sometimes that is not enough space. For example, if the user wanted all the accession years in MCAID for an analysis of attrition over a particular time period, the data would not fit into the maximum size for Excel.³⁷

In this appendix, we explain how to do pivot tables in Excel using an external comma-delimited file (csv file). After exporting a file from MCAR or MCAID, go to Excel and select “New.” Open a blank, new Excel file, and use the scroll-down data menu to select pivot table (figure 24).

Figure 24. Pivot table screen (step 1 of 3) in Excel

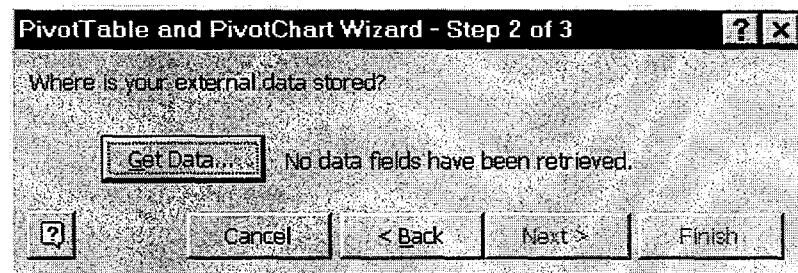


37. Trying to read a csv file of more than 66,000 lines in Excel produces only an incomplete read. Keep data externally in a csv file and follow the instructions here.

Choose external data source and pivot table, as shown in figure 24. Then, select next.

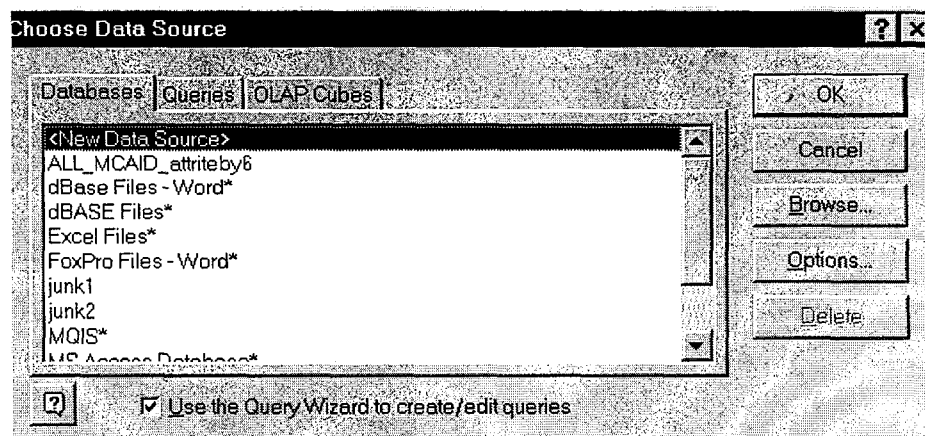
The pivot table and pivot chart wizard - Step 2 of 3 - screen shown in figure 25 will appear. Select “get data.”

Figure 25. Pivot table and pivot chart wizard: Step 2 of 3



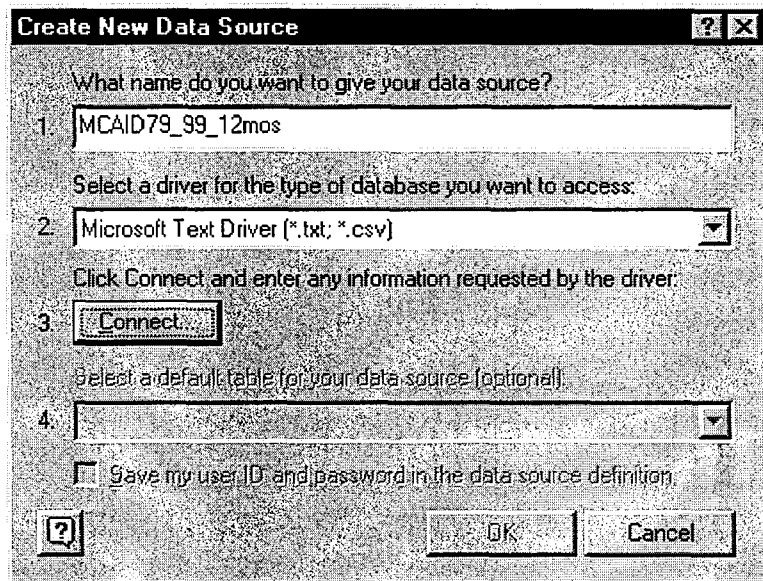
The “choose data source” screen (figure 26) is next. This screen asks the user to verify that the data source is new. Make certain that the “use query wizard” box at the bottom of the screen is selected. Then, click “OK.”

Figure 26. Choose data source screen



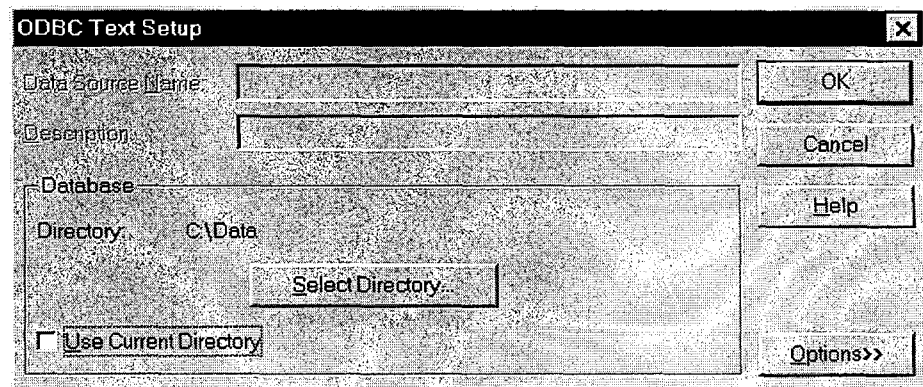
The next prompt is to enter a name (see create new data source screen shown in figure 27). It is probably good to name the data source with the years and selected attrition months in the dataset. Use the pull-down menu on the second choice to select *.txt,*.csv. Click on connect.

Figure 27. Create new data source



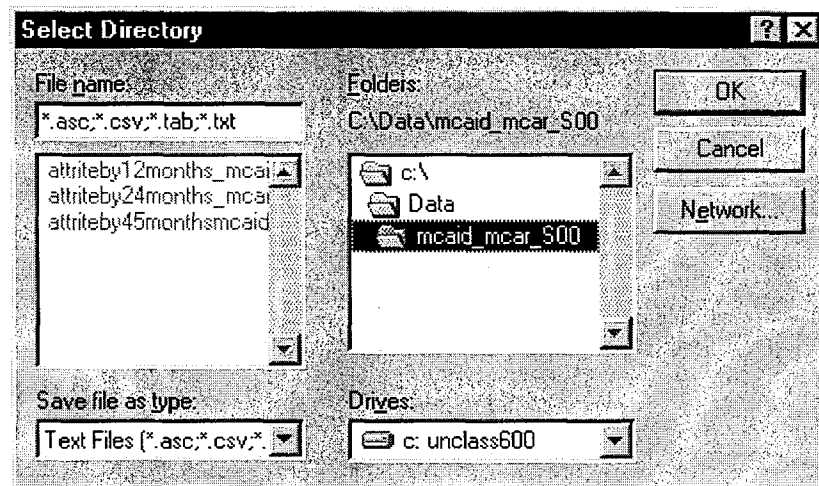
The next screen (figure 28) is the open data base connectivity (ODBC) screen. The “use current directory” box will probably be selected; unselect this box and click on “select directory.” It probably will automatically go to the next screen; if not, click on OK.

Figure 28. ODBC text setup screen



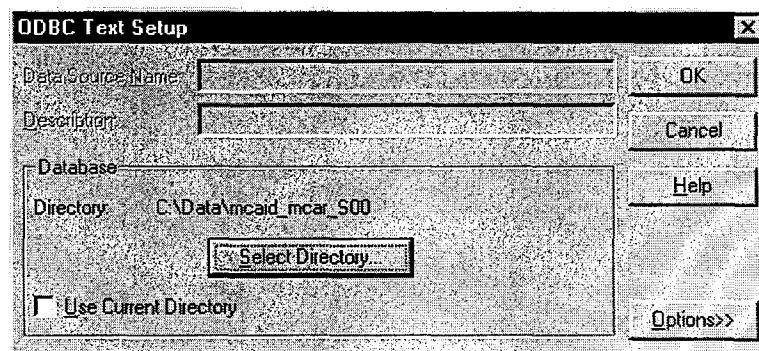
The next screen is the select directory screen for the csv file input (figure 29). Under the file name box (this is really file type), the csv selection should appear. If it is not there, select it from the list. Then, in the middle of the screen, locate the folder where the input csv file resides. Our file is on our C drive under data/mcaid_mcar_S00 as shown in figure 29.³⁸ After specifying file location, click on OK.

Figure 29. Select directory screen



Click "OK" on the select directory screen, and the ODBC text setup screen will appear again. Note under directory that it should now say where the user's file is located. Ours is in mcaid_mcar_S00 under data on the C drive. Click on OK when finished (see figure 30).

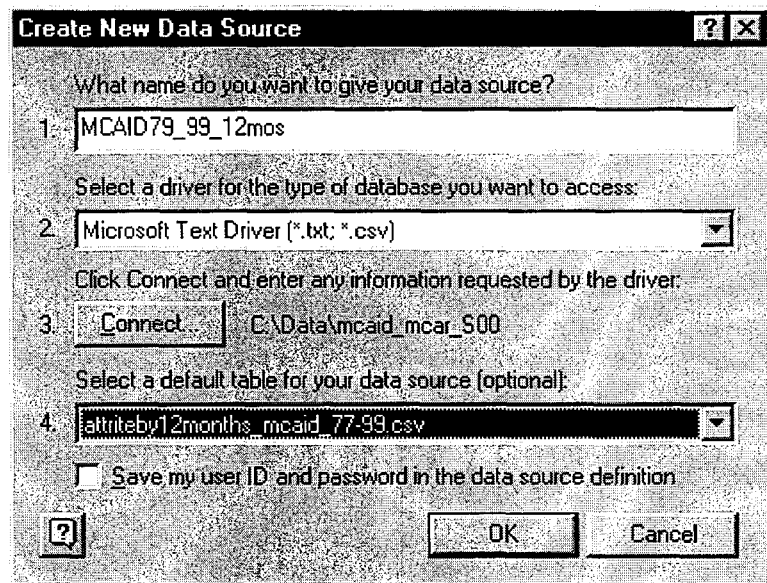
Figure 30. Second viewing of ODBC text setup screen



38. The user may need to click on these folders to get the correct location of the csv file.

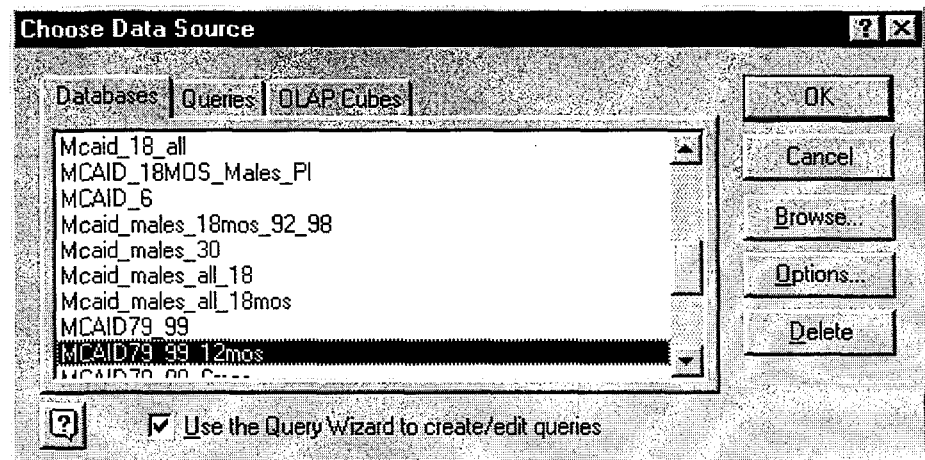
Next, the create new data source screen appears again (figure 31). The first two items were completed when this screen was used to “connect” to the user’s data; now it is time to fill in the fourth item on the screen. Scroll down with the arrow and the database name (selected by the user) should be there. Select it. Then click on OK.

Figure 31. Second viewing of the create new data source screen



The choose data source screen is next (figure 32); the database name should appear. Make sure the query wizard is checked, and click OK.

Figure 32. Choose data source sheet



Figures 33 and 34 are two screens that allow the user to choose the variables (called columns in the query) for the dataset. To work with all the variables, click on the > bar. Once the variables appear on the right, the Next button is activated. When satisfied with the variable selection, click Next. Figure 34 shows the screen after all the variables are selected.

Figure 33. Query wizard: choose columns

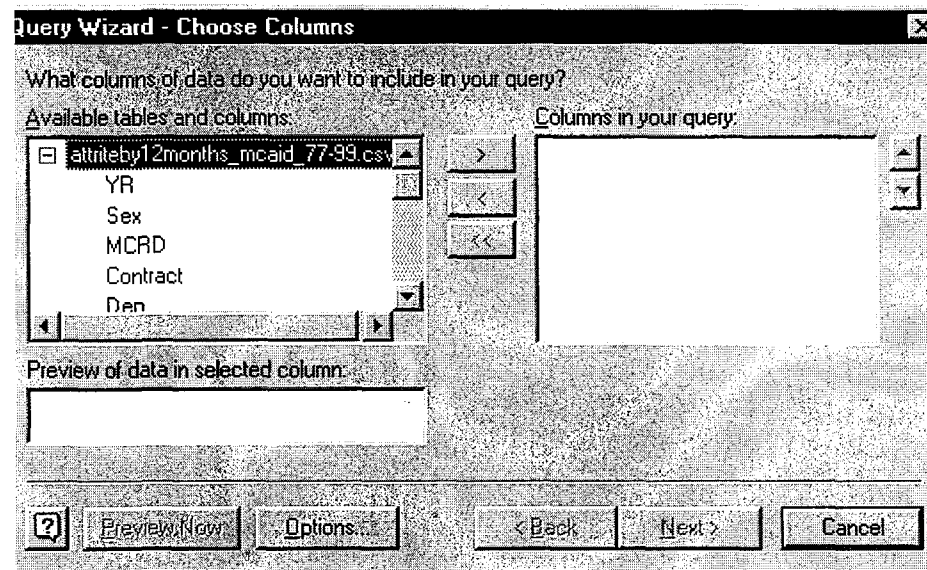
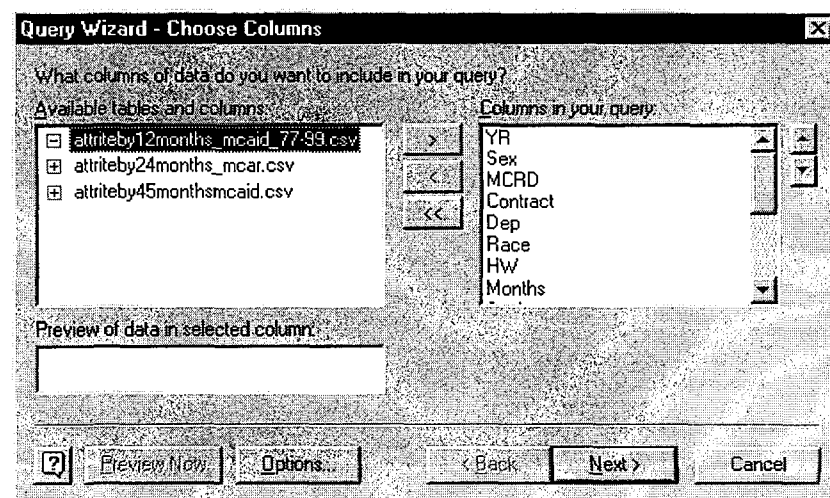


Figure 34. Query wizard - after columns are chosen



We now go through two screens (figures 35 and 36) where we just click next because we do not want the data filtered or sorted.

Figure 35. Query wizard: Filter data

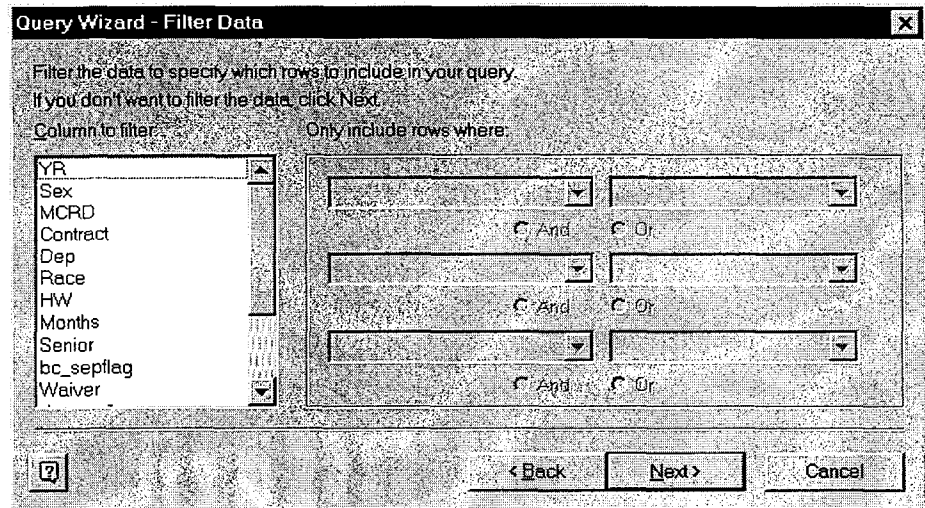
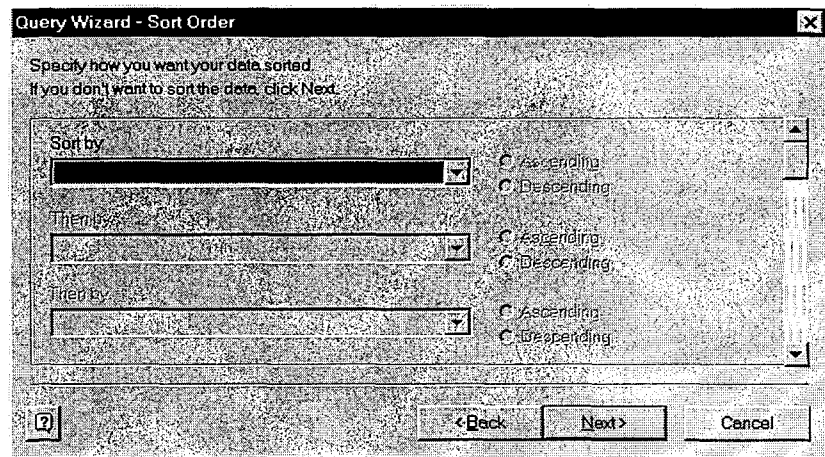


Figure 36. Query wizard: Sort order



On the “Query wizard finish” screen shown in figure 37, we select “return data to Microsoft Excel” and then click on finish. The next screen that appears is the pivot table and pivot chart wizard, step 2 of 3, screen (figure 38). Here we click on Next.³⁹

Figure 37. Query wizard: Finish

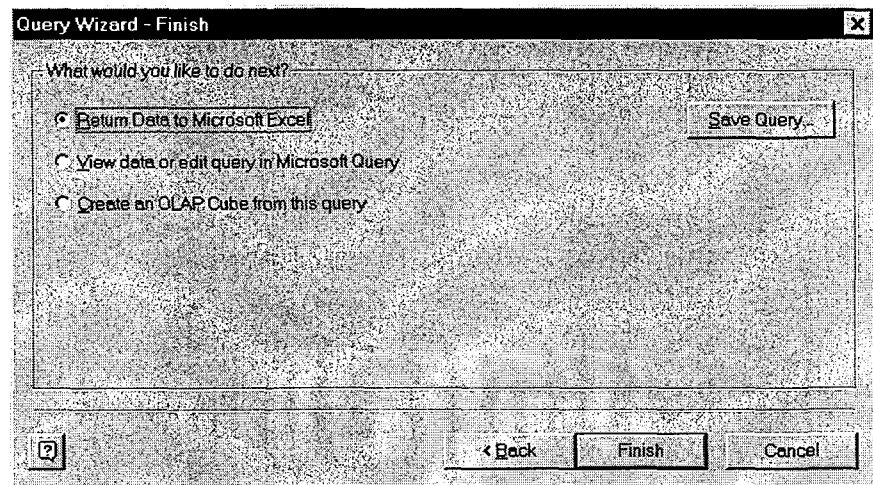
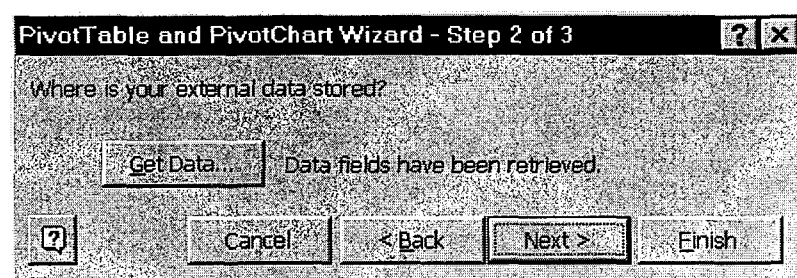


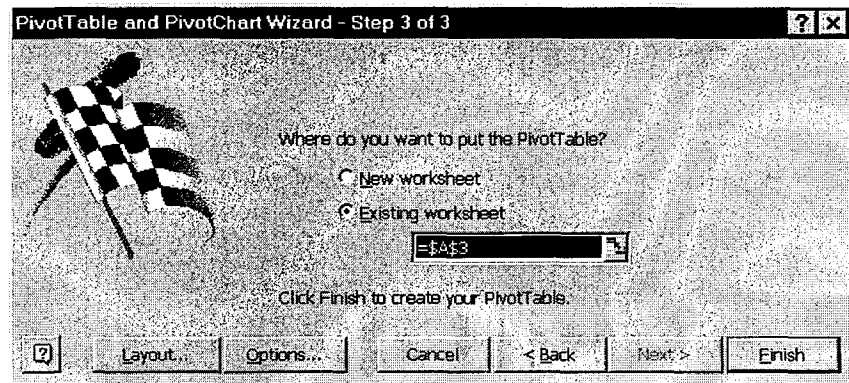
Figure 38. Pivot table and pivot chart wizard: Step 2 of 3



39. Clicking on Get Data at this point will bring up a query on the screen. To go back to this window, go to the file menu and select the choice of “return data to Microsoft Excel.”

The step 3 of 3 of the pivot table and pivot chart wizard screen now appears (figure 39). We want the data to appear on our new worksheet (the existing worksheet) selection.⁴⁰ Select Layout (going to finish at this point results in a display that is too small to read). After selecting layout, the screen with the pivot table layout will appear.

Figure 39. Pivot table: Step 3 of 3



The screen on figure 40 shows the layout the user has to work with for the pivot table. Remember that the only fields that will go in the Data area are attriteby (as a sum) and accession (as a sum).

Figure 41 shows how we initially arranged the pivot table. We put a number of variables under page.⁴¹ That means that initially we will have all categories of each of these variables, but we can later—without redoing the pivot table—use the different pull-down menus on the variables to restrict the sample. We put the waiver variable on the row, and the education and mental group variables as the columns. In the data portion of the pivot table, we have our data variables

40. Make a note of where this screen says the pivot table will start (A3) because that position is helpful. If the pivot table layout disappears from the screen on a pivot table in process, clicking on the cell (A3 here) should bring it back.

41. To put variables on the table, just drag them.

Figure 40. Pivot table: Layout

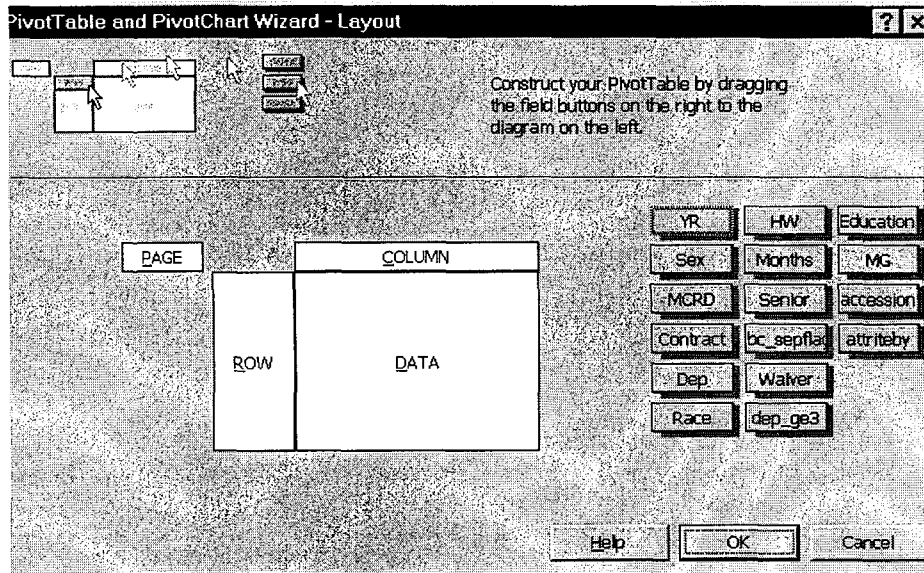
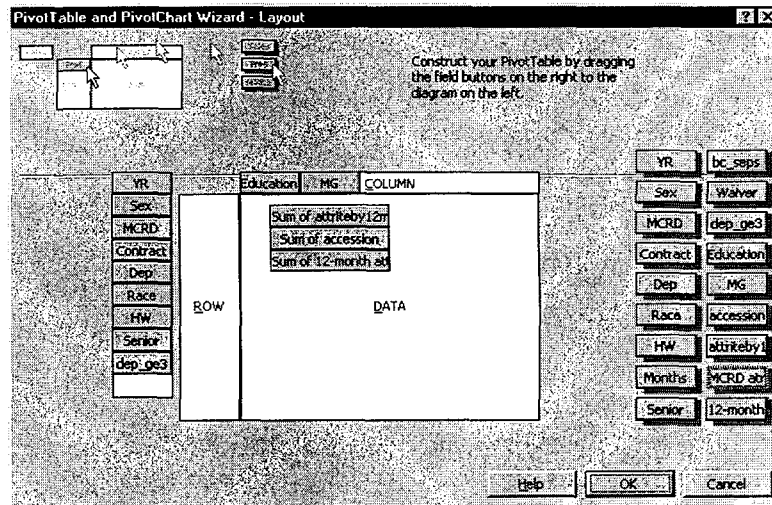


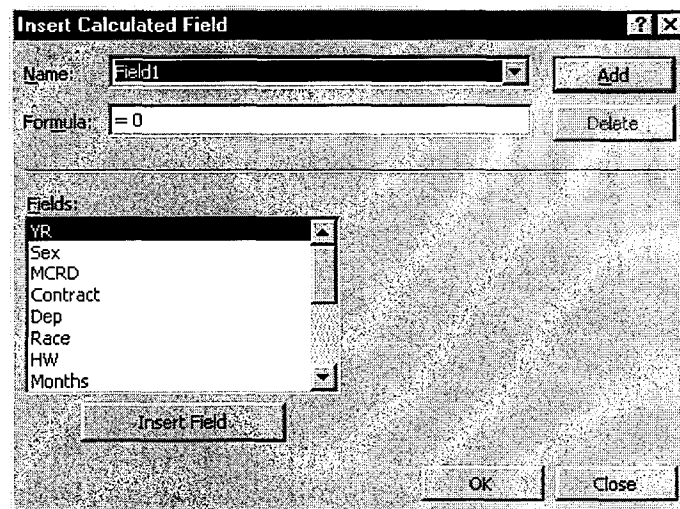
Figure 41. Pivot table and pivot chart wizard: Layout



(attriteby12 and accession). Note that these are specified as sums.⁴² We also have a new variable called 12-month attrition rate. We create that.⁴³ When satisfied with the pivot table construction, click on OK at the bottom of the screen.

How does one create new variables? Put the cursor on a cell in the pivot table. On the pivot screen menu, pull down on pivot table (upper left of screen menu). Select “formulas” and then “calculated field.” All the variables in the pivot table will be listed below the box that contains the formula (see figure 42).

Figure 42. Insert calculated field



42. If they say anything but “sum of,” click on the button and get the “sum” selection.

43. One creates new variables after making a pivot table, so let’s first complete the pivot table before turning to a discussion of how to create variables.

Here's the formula we used:

=if(Accession>0,atriteby12/accession,0).

We used "insert field" after we selected the variables for the formula.⁴⁴ We used the name field to call this new variable "12-month attrition rate." Figure 43 shows how the pivot table looks with the new field in it.⁴⁵

Figure 43. Pivot table with new field

The screenshot shows an Excel PivotTable with the following data:

Waver	Data	Tier I		Tier I Total	Tier I, Other		Tier I, Other Total	Tier II, III		Tier II, II
		AFQT GE 50	AFQT LT 50		AFQT GE 50	AFQT LT 50		AFQT GE 50	AFQT LT 50	
Dependent	Sum of atriteby12months	593	448	1,041	45	50	95	49	23	
	Sum of accession	3,163	2,140	5,303	222	156	378	177	75	
	12-month attrition rate	18.7%	20.9%	19.6%	20.3%	32.1%	25.1%	27.7%	30.7%	
Drugs	Sum of atriteby12months	9,426	6,278	15,702	405	312	717	808	404	
	Sum of accession	56,820	32,310	89,130	1,873	1,111	2,984	2,908	1,292	
	12-month attrition rate	16.6%	19.4%	17.6%	21.6%	28.1%	24.0%	27.8%	31.3%	
Felony, S	Sum of atriteby12months	3,004	1,922	4,926	276	144	420	266	122	
	Sum of accession	17,582	9,544	27,126	1,150	579	1,729	968	391	
	12-month attrition rate	17.1%	20.1%	18.2%	24.0%	24.9%	24.3%	27.6%	31.2%	
No Waive	Sum of atriteby12months	9,736	5,821	15,557	282	207	489	517	263	
	Sum of accession	71,619	34,474	106,093	1,277	775	2,052	1,946	923	
	12-month attrition rate	13.6%	16.9%	14.7%	22.1%	26.7%	23.8%	26.6%	28.5%	
Other Wa	Sum of atriteby12months	2,093	1,019	3,112	101	47	148	117	57	
	Sum of accession	13,993	5,397	19,390	395	190	585	435	156	
	12-month attrition rate	15.0%	18.9%	16.0%	25.6%	24.7%	25.3%	26.8%	36.5%	
UNK	Sum of atriteby12months	31,965	26,893	57,824	397	192	589	877	834	1
	Sum of accession	219,727	157,035	376,762	1,670	769	2,439	41,592	36,930	7
	12-month attrition rate	14.5%	16.5%	15.3%	23.6%	25.0%	24.1%	21.6%	24.2%	
Total Sum of atriteby12months		56,817	41,345	98,162	1,506	952	2,458	10,735	9,803	2
Total Sum of accession		382,904	240,900	623,804	6,687	3,680	10,167	48,017	39,767	8
Total 12-month attrition rate		14.8%	17.2%	15.7%	22.9%	26.6%	24.2%	22.4%	24.7%	

44. No spaces are allowed between "=(if(". Note also that one cannot put a period at the end of the formula field.

45. We also used various features of Excel to show the attrition rate as a percentage, to put commas in the accession and attrition numbers, etc.

An Excel file with a pivot table that uses external data allows the user to rearrange the pivot table at will. Since we put all the years and variables from MCAID into the external csv file, there will be no reason to re-do this work *for 12-month attrition rates* until the MCAID database is updated.

To change the layout of the pivot table, drag the fields around or go to the third icon on the left-hand side of the pivot table (pivot table wizard) and click on that. The screen shown in figure 39 (pivot table, step 3 of 3) will appear. Select layout and then construct an entirely new pivot table. The new pivot table can be put on a new sheet or on top of the old pivot table (erasing the old pivot table).

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Appendix C: Updating MCAR and MCAID⁴⁶

The CD contains four folders: MCAR, MCAID, documents (including this research memorandum), and UPDATE. This appendix discusses what is in the UPDATE folder and the update procedures. The update folder contains three files:

- Newdata.mdb
- Update files
 - UpdateMCAID.mdb
 - UpdateMCAR.mdb.

Inside the update files are the following procedures or queries:

- Queries for deleting old data
 - DeleteOldData(MCAID)
 - DeleteOldData(MCAR)
- Queries for checking new data
 - CheckMCAR
 - CheckMCAID
- Queries for appending new data
 - AppendNewData(MCAR)
 - AppendNewData(MCAID).

46. If the user has win98 or winNT, the initial installation just involves running the appropriate exec (MCAID.exe or MCAR.exe). If the user has only win95, DCOM95 must first be run before the programs are installed. This only needs to run once; it is not necessary to run it for updates. DCOM95 is on the CD.

Steps in the updating procedure

1. The updated data for MCAID/MCAR⁴⁷ comes from the file named SSNfile. It needs to be imported into the database newdata.mdb using the specification file.⁴⁸

From this point on, you are updating one of the two databases:

2. Verify that the links are correct.

- For MCAID: the links between updateMCAID.mdb and newdata.mdb
- For MCAR: the links between updateMCAR.mdb and newdata.mdb.

3. Delete the old data you no longer want.

- For MCAID: Run the DeleteOldData(MCAID) query
- For MCAR: Run the DeleteOldData(MCAR) query.

This query may need modification if you are updating fewer years than at the last update. For example, currently FY 1979 through FY 1993 are complete. In this step, then, one would delete data for FY 1994 through FY 2000, because these are the years that will be updated.

4. Check the incoming data.

- For MCAID: Run the CheckMCAID query
- For MCAR: Run the CheckMCAR query.

5. Add the new data.

47. A single data set is used to update the two databases.

48. If there has been a change in the format of the raw data, the user will have to change the specification file.

The specification file is inside the newdata.mdb and is available when the text file with the new data are imported. Inside the database the new data are called SSNfile.

- For MCAID: Run the AppendNewData(MCAID) query
- For MCAR: Run the AppendNewData(MCAR) query.

6. Fix the year table (YRtbl) to reflect the new information.

- For MCAID: Change the YRtbl to reflect the new number of months (nummos) for which attrition can be observed. Table 9 shows the nummos for each accession year at each update point.
- For MCAR: Change the YRtbl to reflect the attrition period that can be observed. Table 10 shows the values for the separation category ID and table 11 shows the values that should be put in the YRtbl at each update point. Note that this variable that you are working with is called attr_lim in the database.

Table 9. MCAID length of service (LOS), in months

YRID	YR	LOS: As of separation update at date								
		Sep00	Dec00	Mar01	Jun01	Sep01	Dec01	Mar02	Jun02	Sep02
01	1979	73	73	73	73	73	73	73	73	73
02	1980	73	73	73	73	73	73	73	73	73
02	1981	73	73	73	73	73	73	73	73	73
04	1982	73	73	73	73	73	73	73	73	73
05	1983	73	73	73	73	73	73	73	73	73
06	1984	73	73	73	73	73	73	73	73	73
07	1985	73	73	73	73	73	73	73	73	73
08	1986	73	73	73	73	73	73	73	73	73
09	1987	73	73	73	73	73	73	73	73	73
10	1988	73	73	73	73	73	73	73	73	73
11	1989	73	73	73	73	73	73	73	73	73
12	1990	73	73	73	73	73	73	73	73	73
13	1991	73	73	73	73	73	73	73	73	73
14	1992	73	73	73	73	73	73	73	73	73
15	1993	73	73	73	73	73	73	73	73	73
16	1994	72	73	73	73	73	73	73	73	73
17	1995	60	63	66	69	72	73	73	73	73
18	1996	48	51	54	57	60	63	66	69	72
19	1997	36	39	42	45	48	51	54	57	60
20	1998	24	27	30	33	36	39	42	45	48
21	1999	12	15	18	21	24	27	30	33	36
22	2000	0	3	6	9	12	15	18	21	24
23	2001	-	-	-	-	0	3	6	9	12
24	2002	-	-	-	-	-	-	-	-	0

Table 10. MCAR months of service separation categories

Separation category ID	Months of service completed		Attrite by ^a
	>= to	< than	
01	0	3	3
02	3	6	6
03	6	12	12
04	12	24	24
05	24	37	37
06	37	39	39
07	39	49	49
08	49	51	51
09	51	61	61
10	61	63	63
11	63	73	73
12	b		

a. This is the value that will show on the MCAR screen.

b. This category includes all Marines who have not attrited (are still in the Marine Corps) as well as Marines who attrited after 73 months of service.

Note that the Database follows Marines through the completion of the 72nd month of service. Since the database for FY 1979 through FY 1993 accession is complete (no further updates required), all Marines in separation category 12 for those accession years either attrited *after* completing 72 months of service or they are still in the Corps. For recent accession years, however, category 12 includes active Marines at a variety of months of service.

Table 11. MCAR length of service (LOS), in months^a

YRID	YR	Separation Month category (months)								
		Sep00	Dec00	Mar01	Jun01	Sep01	Dec01	Mar02	Jun02	Sep02
01	1979	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
02	1980	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
02	1981	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
04	1982	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
05	1983	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
06	1984	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
07	1985	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
08	1986	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
09	1987	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
10	1988	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
11	1989	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
12	1990	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
13	1991	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
14	1992	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
15	1993	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
FY 1979 through FY 1993 are complete. Updates are only required for FY 1994 and later years										
16	1994	11 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)	12 (73)
17	1995	9 (61)	10 (63)	10 (63)	10 (63)	11 (73)	12 (73)	12 (73)	12 (73)	12 (73)
18	1996	7 (49)	8 (51)	8 (51)	8 (51)	9 (61)	10 (63)	10 (63)	10 (63)	11 (73)
19	1997	5 (37)	6 (39)	6 (39)	6 (39)	7 (49)	8 (51)	8 (51)	8 (51)	9 (61)
20	1998	4 (24)	4 (24)	4 (24)	4 (24)	5 (37)	6 (39)	6 (39)	6 (39)	7 (49)

Table 11. MCAR length of service (LOS), in months^a (continued)

YRID	YR	Separation Month category (months)								
		Sep00	Dec00	Mar01	Jun01	Sep01	Dec01	Mar02	Jun02	Sep02
21	1999	3	3	3	3	4	4	4	4	4
		(12)	(12)	(12)	(12)	(24)	(24)	(24)	(24)	(24)
22	2000	0	1	2	2	3	3	3	3	4
		(0)	(3)	(6)	(6)	(12)	(12)	(12)	(12)	(24)
23	2001	-	-	-	-	0	1	2	2	3
						(0)	(3)	(6)	(6)	(12)
24	2002	-	-	-	-	-	-	-	-	0
										(0)

a. Figure 5 provides information on the separation month category ID. MCAR tracks attrition through 72 months of service. The first 11 separation month categories reflect periods in which attrition occurred (for example, the first category is attrition with less than 3, but more than 0, months completed). The last separation category, 12, is a catch-all. It includes 2 basic groups: Marines who attrite in the 73rd or later month and Marines who are still in the Corps. These Marines could have been in the Corps any number of months. Adding the Marines in each of the 12 categories for any accession year will produce the total number of accessions for that year.

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