Trends in the Training Recruits Receive Before Their First Fleet Assignments

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As part of CNA's support to the Navy's Training and Education integrated Warfare Architecture (T&E IWAR) team, N81 asked CNA to examine trends in the initial training that recruits receive before their first fleet assignments. The task was to look for trends that may indicate potential problem areas, to help predict future training requirements, or to provide insights for exploring alternative training philosophies. This annotated briefing describes our findings.

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Trends in the Training Recruits Receive Before Their First Fleet Assignments

CNA Support to the Training & Education IWAR Team

As part of CNA's support to the Navy's Training and Education Integrated Warfare Architecture (T&E IWAR) team, N81 asked CNA to examine trends in the initial training that recruits receive before their first fleet assignments. The task was to look for trends that may indicate potential problem areas, to help predict future training requirements, or to provide insights for exploring alternative training philosophies. This annotated briefing describes our findings.

Issues

- How long does it take recruits to reach their first fleet assignments?
  - How much of this time is spent in training?
  - What kind of training do they receive?
- What percentage of recruits make it to the fleet?
  - Where does most attrition occur?
- What is the Navy's return on this initial training investment?
  - How much time do sailors spend in the fleet relative to the time they spend getting to the fleet?

In examining the training that recruits receive before their first fleet assignments, we looked at three major issues.

The first was the time it takes recruits to reach their first fleet assignments. We sought to answer the following questions: Has this time increased, decreased, or stayed the same? Do the trends differ among recruits with different initial obligations? How much of this time do recruits actually spend in training, and what types of training do they receive?

The second issue was how many recruits make it to the fleet (or, conversely, how many leave the Navy before their fleet assignments). Here we focused on the following questions: Has pre-fleet attrition increased, decreased, or stayed the same? Where in the initial training program does most attrition occur? Does the amount and timing of attrition differ by obligation?

The third issue was what the Navy gets in return for its initial training investment. Although there are several aspects to this issue, we looked at it in terms of the time sailors spend in the fleet relative to the time they spent getting to the fleet. We realize that this does not address all the benefits of this training; however, it does provide a useful measure for analyzing the amount of training recruits should get up front.

Data Source

- CNA's Street-to-Fleet (STF) database
- Integrates accession, personnel, and training data:
  - Accession data from DMDC and CNRC
    - Data for FY90 through FY98
  - Personnel data from the EMR file
    - Data for FY90 through June 1999
  - Training data from NITRAS
    - Course data for FY93 through FY98

The data source for our analysis was CNA's Street-to-Fleet (STF) database. This unique database combines accession, personnel, and training data. It follows each recruit from bootcamp, through initial schooling, and into the fleet.

The accession data, which come from the Defense Management Data Center (DMDC) and Commander Naval Recruiting Command (CNRC), include the rating, program, and length of contract under which each recruit enlisted. The current version contains data on all non-prior-service accessions who entered the Navy from FY90 through FY98.

The personnel data, which come from BUPERS' Enlisted Master Record (EMR) file, include career data, such as rate obtained, date of full-duty status, and, if applicable, date of and reason for separation. The current version of STF contains personnel data through June 1999.

The training data, which come from NITRAS, contain a historical record of the individual courses each recruit took. It tells, for each course, whether the recruit graduated or failed. It also contains the time each recruit spent under instruction, awaiting instruction, awaiting transfer, and in an interrupted instruction status.[1] The current version contains data on courses that were completed between the beginning of FY93 and the end of FY98.

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1. Awaiting instruction (AI), awaiting transfer (AT), and interrupted instruction (II) are categories of not-under-instruction (NUI) time.

How Long Does It Take Recruits To Reach Their First Fleet Assignments?
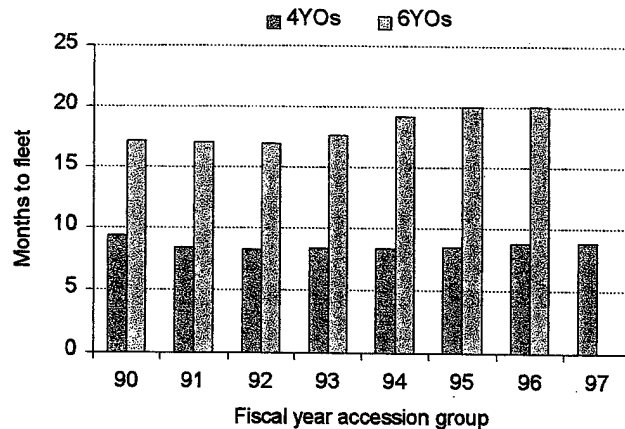
Time increasing for 6YOs but staying the same for 4YOs

The first issue we looked at was the time it takes recruits to reach the fleet. In general, this time depends on the recruit's initial training program, which, in turn, depends on the rating selected and the length of contract (or initial obligation) signed. Ratings that require long training programs require long (i.e., 5- or 6-year) obligations. For this reason, when examining time to the fleet, we looked at two groups of recruits: those who signed 4-year contracts (4YOs) and those who signed 6-year contracts (6YOs).[1] We excluded accessions who enlisted as GENDETs from both groups.

This chart shows the average time (in months) it took recruits to reach the fleet. The red columns represent 4YOs and the blue columns represent 6YOs. During the 1990s, the time for 4YOs to reach the fleet has remained fairly constant, ranging from 8.3 to 9.4 months.

The story is different for 6YO recruits. For those who entered from FY90 to FY93, time to the fleet averaged about 17 months per recruit. Between FY93 and FY95, however, this time increased to 20 months per recruit and remained at that level for FY96 recruits.[2] This suggests that the more recent 6YO accessions received more training before their first fleet assignment than their counterparts at the beginning of this decade.

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1. We grouped recruits based on their obligations at the time they enlisted. We did not account for recruits whose obligations changed because they were reclassified at bootcamp or failed their original training program and were sent elsewhere with different obligations.

2. Because some of the FY97 accessions were still in training at the time of the most recent STF database update, we could not calculate the average time for this accession year group.

How Do 4YO Recruits Spend Their Time Getting to the Fleet?
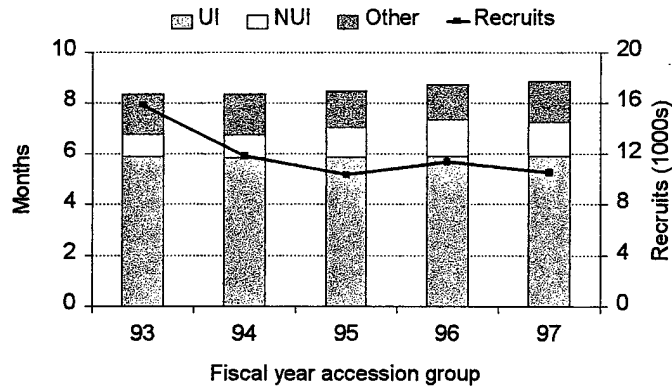
About 70% of the time spent under instruction

In addition to simply looking at the total time it took recruits to reach the fleet, we wanted to know how this time was spent. Using the STF training data, we divided this time into three categories:

- Time spent at school in training (i.e., under instruction (UI))

- Time spent at school but not in training (i.e., not under instruction (NUI))

- Time spent not at school ("other" time).[1]
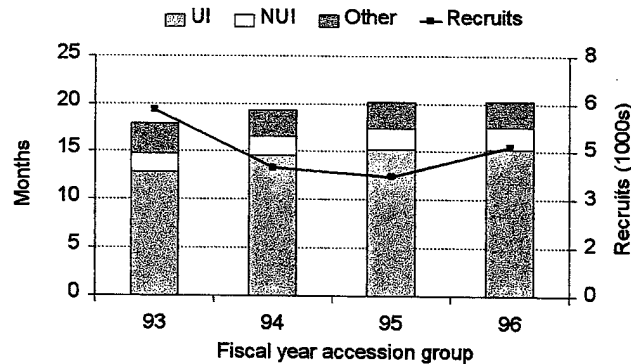
This chart shows the average time for these three categories for 4YO recruits who made it to the fleet.[2] It also shows the number of these recruits in each accession year group. Although the total time increased slightly (8.1 to 8.9 months) over this period, UI time stayed constant at a little under 6 months. This is somewhat remarkable considering that the length of initial training programs varies significantly by rating and that the proportion of recruits entering each rating changes over time. Most of the increase in total time was the result of an increase in NUI time, which rose from 27 days per recruit for FY93 accessions to 41 days per recruit for FY96 accessions.

On average over this 5-year period, 4YO recruits spent about 70 percent of the total time to reach the fleet at school under instruction.

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1. We calculated the time not at school by subtracting the time at school (i.e., sum of UI and NUI time) from the total time it took to reach the fleet. This "other" time represents travel time, leave, and, perhaps, training that was not captured at the individual student level in NITRAS.

2. The training data in the STF database go back only to FY93, so this chart shows data for FY93 to FY97 accessions.

How Do 6YO Recruits Spend
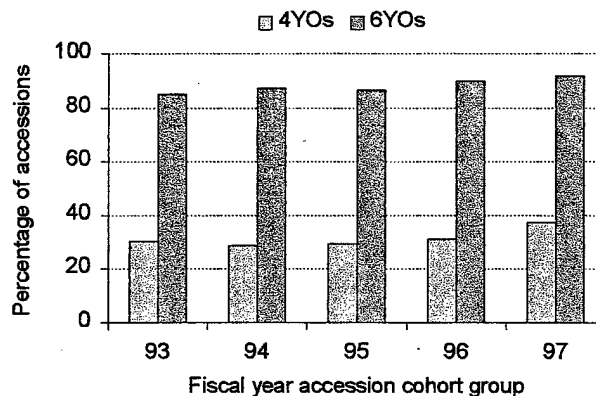Their Time Getting to the Fleet?

- About 75% of the time spent at school under instruction
- 25% (5 months) spent not at school or at school but NUI

This chart shows the average time for each category for 6YO recruits who reached the fleet. From FY93 to FY96, total time to the fleet increased by about 2.5 months.[1] Unlike the 4YOs, most of this increase resulted from an increase in UI time, which rose from an average of 12.8 to 15.2 months per recruit. This confirms that the FY95-96 6YO recruits received more training before their first fleet assignments than their counterparts at the beginning of the decade.

On average over this 4-year period, 6YO recruits spent about 75 percent of the total time to reach the fleet at school under instruction. Although this is higher than that for 4YOs, because of their long training programs, the average 6YO recruit still spent nearly 5 months not in training. Even if we subtract out 2 months for leave (assuming recruits can spend 30 days each year), this still leaves about 3 months when they were not in training (of which a little over 2 months was NUI time). Multiplying this by the FY96 6YO accession total (about 5,000) reveals that these accessions spent about 1,250 man-years of time before reaching the fleet when they were not in training.

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1. Recall from an earlier slide that this time also increased between FY92 and FY93.

6

Who Receives Training After A-School?

```
                    4YOs    6YOs
        100
    Percentage of accessions
         80
         60
         40
         20
          0
              93     94     95      96     97
              Fiscal year accession cohort group
```

Nearly all 6YOs (85% - 92%) and about a third of 4YOs

All non-prior-service accessions start their initial training at bootcamp. All recruits, except those who enlist as GENDETs, go to A-school training after bootcamp.[1] Following A-school, recruits go either to the fleet or to more training. In most cases, this follow-on training is to earn a Navy Enlisted Classification (NEC).
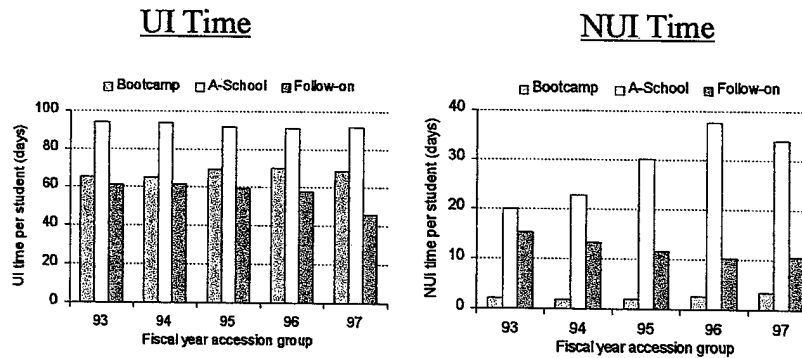
The likelihood that a recruit will go through follow-on training before his or her first fleet assignment depends on the recruit's rating and obligation. For some ratings (e.g., Avionics Technicians), nearly everyone goes through some level of follow-on training. For others, almost no one goes. Still others lie in between. Most recruits who sign a 6-year contract (regardless of rating) are promised some level of follow-on training after A-school.

This chart shows the percentage of 4YO and 6YO recruits who went through follow-on training. We defined follow-on training as any course—that was not an A-type or R-type course—that a recruit completed before reaching the fleet. The data confirm that nearly all 6YOs go through follow-on training. Furthermore, this percentage has increased over this 5-year period.

As expected, far fewer 4YOs went through follow-on training. Before FY97, only about a third of 4YO recruits received follow-on training. This percentage, however, increased for FY97 accessions to almost 40 percent.

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1. Recruits who enlisted in the Targeted A-School Program (TASP) went first to the fleet and then to A-school. The number of recruits who came in under this program, however, was small.

How Much of Each Type of Training
Do 4YO Recruits Receive?

UI Time
NUI Time

Bootcamp ☐ A-School ☐ Follow-on

Left chart (UI Time): UI time per student (days), 0–100. Fiscal year accession group 93, 94, 95, 96, 97.

Right chart (NUI Time): NUI time per student (days), 0–40. Fiscal year accession group 93, 94, 95, 96, 97.

- Spent most time in A-school training
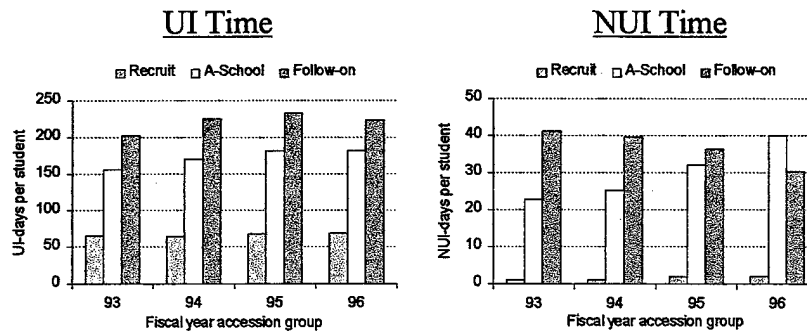- Substantial increase in A-school NUI time

Next, we looked at how much time recruits spent in each type of training.

The chart on the left shows the average time 4YO recruits spent under instruction for each type of training. The columns represent bootcamp (blue), A-school training (yellow), and follow-on—primarily NEC—training (red). The average time is based only on those recruits who went through that type training (as opposed to the entire year group).

4YOs spent most UI time at A-school (average of 96 days), and this time has stayed constant during this period. Bootcamp was next (65-70 days) with UI time increasing slightly. The lowest average was for follow-on training, which has decreased since FY94. Comparing these data with the pervious slide, we see that, although more FY97 recruits went through follow-on training, the average UI time was shorter.

The chart on the right shows the average NUI time for 4YO recruits who went through each type of training. From FY93 through FY96, NUI time at A-school almost doubled, increasing from 20 days to 38 days. It went down, however, to 32 days for FY97 recruits. On the other hand, NUI time at follow-on training decreased over this period. One reason for this may be that students are spending more of the time between A-school and follow-on training at the A-school (awaiting transfer) than at the follow-on school (awaiting instruction).

How Much of Each Type of Training
Do 6YO Recruits Receive?

UI Time — NUI Time

- Spent most time in follow-on training
- Substantial increase in A-school NUI time

This slide shows the same data for 6YO recruits. The chart on the left shows that 6YOs who went through follow-on training spent more UI time there than at A-school (by an average of almost 50 days per recruit). It also shows that the average UI time has increased for both these types of training. Combining this with earlier data that showed more 6YOs going through follow-on training tells us that the amount of training 6YOs receive has increased over this time period; more went through follow-on training, plus their UI time for each type of training increased.

The right-hand chart shows trends in NUI time for 6YOs. They parallel those for 4YOs (increasing at A-school while decreasing at follow-on training), except that the average time for follow-on training is much greater.

How Many 4YO Recruits Leave the Navy Before Their First Fleet Assignments?
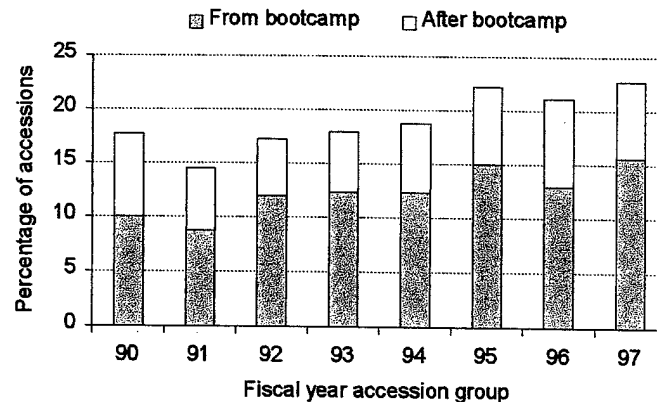
Rise in bootcamp attrition caused increase in pre-fleet attrition

The second major issue we looked at was how many recruits leave the Navy before reaching the fleet. These recruits never serve time in the fleet and represent a waste of both recruiting and training resources.

This chart shows the percentage of 4YO recruits (by accession year) who left the Navy before their first fleet assignments. The blue portion of each column represents recruits who left from bootcamp, and the yellow portion represents those who left after bootcamp (i.e., from A-school or follow-on training).

The percentage of 4YO recruits who left the Navy before reaching the fleet increased during the 1990s from about 17 percent for FY90 recruits to almost 23 percent for FY97 recruits.[1] Most of these recruits (60 to 70 percent) left from bootcamp. In fact, it was the increase in bootcamp attrition (from 10 to 15 percent) that caused the total attrition to increase. Because most recruits left from bootcamp, the good news here—if there is any—is that the Navy did not invest a lot of training in them.

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1. The drop in 1991 was most likely a result of Desert Storm.

How Many 6YO Recruits Leave the Navy Before Their First Fleet Assignments?
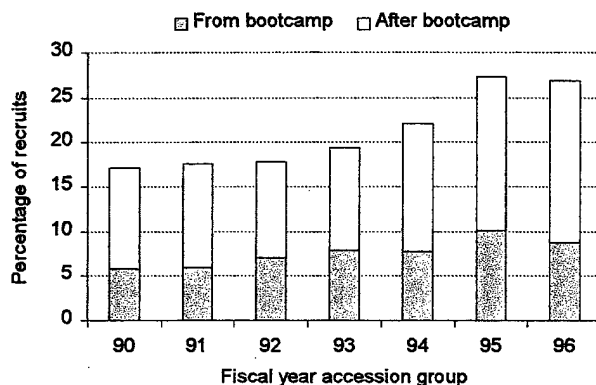

Over a quarter of the 6YOs in FY95-96 never reached the fleet

This chart shows the percentage of 6YO recruits who left the Navy before reaching the fleet. This percentage increased substantially during the 1990s, rising from 17 percent for FY90 recruits to 27 percent for FY96 recruits. Nearly all this increase occurred between FY92 and FY95.

Unlike 4YOs, most 6YOs left after bootcamp. In addition, most of the increase in total attrition was the result of the increase in after-bootcamp attrition—although bootcamp attrition did increase from 6 to 10 percent.

We found this trend disturbing because 6YOs are generally among the best and the brightest recruits. Yet over a quarter of the 6YO recruits in FY95-96 never reached the fleet. Although these rates compare favorably to attrition rates for the recruits with shorter obligations (at the 2-year point), the Navy invests less in the training of these other recruits and, on average, they probably have less potential. Because of the high pre-fleet attrition rate for 6YO, the Navy may want to rethink its strategy of offering so much up-front training to these recruits.

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Cohort History - 4YO Recruits
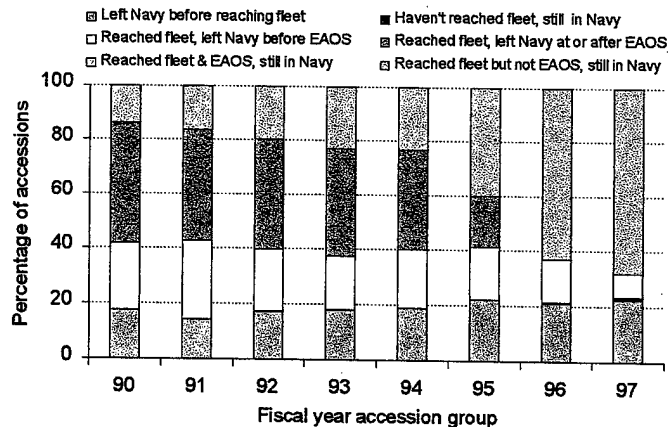
40% of 4YO recruits left the Navy before their initial EAOSs

The third major issue we looked at was the payback the Navy gets for its investment in the initial training of recruits. Although there are several ways to measure the benefits of training, we chose to measure this payback as the ratio of time recruits spent in the fleet to the time they spent getting to the fleet. To compute this measure, we divided each accession year group into six subgroups of recruits:
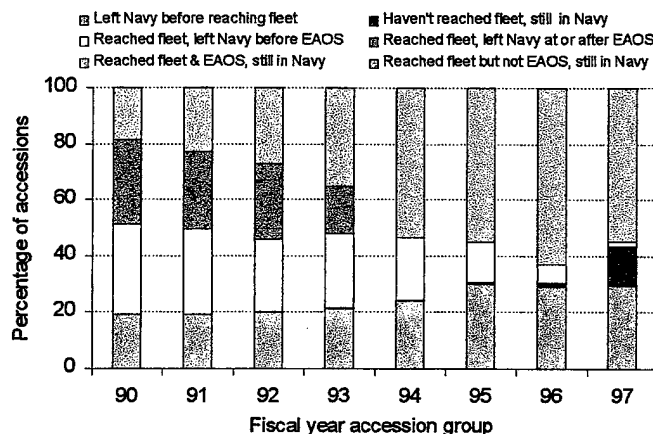
- Never reached the fleet and have left the Navy (blue)
- Never reached the fleet but are still in the Navy (purple)
- Reached the fleet and left before their initial EAOSs (yellow)
- Reached the fleet and left at or after their initial EAOSs (red)
- Reached the fleet and their initial EAOSs and are still in the Navy (green)
- Reached the fleet but not their initial EAOSs and are still in the Navy (tan).

This slide shows the breakout of 4YO recruits into these six subgroups. For FY90 recruits, 18 percent never reached the fleet (blue), 22 percent left before they reached their EAOSs (yellow), 50 percent left at or after their EAOSs (red), and 15 percent were still in the Navy as of June 1999 (green).

Most FY96 and FY97 accessions fall into the last category—reached the fleet but not their EAOSs and are still in the Navy (tan). With time, the yellow category for these years will grow because some of these sailors will leave before their EAOSs.

On average over the first half of this decade, about 40 percent of 4YO recruits never reached their initial EAOSs. What's interesting is that this percentage has stayed relatively constant, even though the percentage that never reached the fleet fluctuated (from 15 to 22 percent).

Cohort History - 6YO Recruits

Almost half the 6YOs left the Navy before their initial EAOSs

This chart shows the breakout for 6YO recruits. Because of their longer initial obligations, over half the recruits for FY94 to FY97 fall into the last category—reached the fleet but not their EAOSs and are still in the Navy (tan). In addition, 15 percent of the FY97 cohort falls into the category—never reached the fleet but are still in the Navy (purple). Looking at FY90 through FY93, we see that almost half these recruits left the Navy before reaching their initial EAOSs.

Cohort History - GENDETs
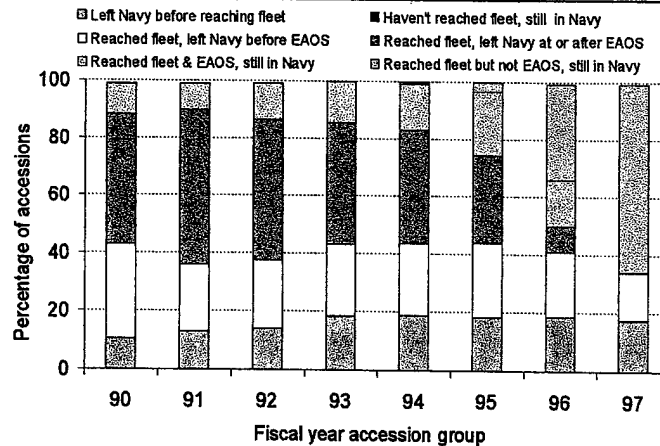
About 40% of GENDETs left the Navy before their EAOSs

This chart shows the data for GENDET recruits. Although most of these recruits had 4-year obligations, some entered with 2-, 3-, and 6-year obligations. The percentage that left before the end of their initial EAOSs is similar to that of other 4YO recruits (about 40 percent).

Return on Initial Training

☐ 4YOs ☐ 6YOs
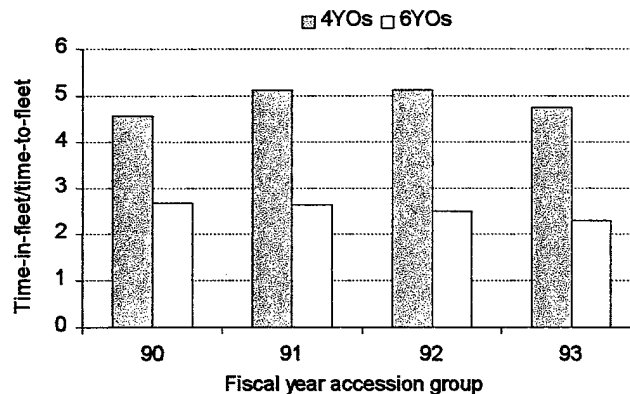
Return on training investment almost double for 4YOs

This slide shows the return on initial training for 4YOs (blue) and 6YOs (yellow). It plots the ratio of the time recruits spent in the fleet to the time they spent getting to the fleet. In calculating the total time to get to the fleet for each cohort group, we included the time for all recruits—even those who never reached the fleet. We calculated time in the fleet by totaling all the time recruits spent in the Navy after reaching the fleet—even though some of this time could have been spent in additional training.

We realize this ratio is only an approximation. Because some recruits from these year groups are still in the fleet, the total fleet time will increase, as will the ratio. On the other hand, not all the time sailors spend in the Navy after reaching the fleet should be considered time in the fleet. Some sailors, for example, go back to school for additional training.

Nonetheless, this measure is still useful for comparing the return on 4YO and 6YO recruits. The above chart shows that the return on 4YOs is almost double that for 6YOs. For example, for FY91 recruits, the Navy got 5 months of fleet time for every 1 month of initial training time for 4YOs but only 2.6 months for 6YOs. Furthermore, because both pre-fleet attrition and average time to the fleet increased after FY93 for 6YOs, we expect their ratio to decrease, which, in turn, will increase the difference between the two groups.

At first, we found these results somewhat surprising; we expected 6YOs to have a higher ratio because of their longer obligations. The reason they don't is that they have much longer initial training programs (average of 20 months), which leads to higher pre-fleet attrition. This higher attrition coupled with the longer training time (even for those who left before reaching the fleet) greatly outweighs the longer initial obligation.

Although initial training requirements ultimately depend on manpower requirements—specifically, the jobs these recruits are expected to perform during their initial fleet assignments—in light of these findings, the Navy may want to reevaluate how much up-front training is absolutely necessary. Could some of this training be given later in a sailor's career?

Summary

- Initial training time has increased for 6YOs and remained constant for 4YOs
- Nearly all 6YOs and about a third of 4YOs received training after A-school and before their first fleet assignments
- Percentage of recruits who left the Navy before reaching the fleet has increased for both 4YOs and 6YOs
    - Over a quarter of 6YO recruits in FY95-96 never reached the fleet
    - Increase for 4YOs due to increase in bootcamp attrition
- Return on training (as measured by time-in-fleet/time-to-fleet) almost twice as great for 4YOs as for 6YOs
    - Higher pre-fleet attrition and longer training programs for 6YOs outweigh their longer obligations

In our investigation of the initial training that recruits receive before their first fleet assignments, we found that the amount of training that 6YOs receive increased from 1990 to 1996, whereas the amount for 4YOs stayed the same. In looking at the types of training recruits received, we found that nearly all 6YOs and only a third of 4YOs received follow-on training (primarily NEC training) after A-school.

The percentage of recruits who left the Navy before their first fleet assignments increased during the 1990s. For 6YOs, it increased from 17 percent for FY90 recruits to 27 percent for FY95 and FY96 recruits. In other words, over a quarter of these recruits in FY95 and FY96 left the Navy before reaching the fleet. Most left from A-school or follow-on training (i.e., after bootcamp). The increase for 4YOs was not as severe (from 17 percent for FY90 recruits to 23 percent for FY97 recruits) and was caused primarily by an increase in bootcamp attrition.

We used the ratio of the time recruits spent in the fleet to the time they spent getting to the fleet as a measure of the payback the Navy gets in return for its investment in the initial training of recruits. We found that the return on 4YOs is almost double that for 6YOs. On average, the Navy got almost 5 months of fleet time for every 1 month of initial training time for 4YOs but only about 2.5 months for 6YOs. Higher pre-fleet attrition coupled with significantly longer training times (even for those who left before reaching the fleet) for 6YOs greatly outweigh their longer initial obligations.

Caveats

- Analysis does not reflect recent initiatives to reduce length of initial training programs and NUI time
  - Training reengineering
  - Quota management office
  - NTRS and NTQMS
- Most of these initiatives affect only FY98 and later year groups
- Because FY98 is the last year of training data in the STF database, we were able to examine 4YOs only through FY97 and 6YOs only through FY96

We need to point out that the Navy has implemented several initiatives over the past few years that are aimed at reducing the length of initial schoolhouse training and reducing the amount of NUI time that students experience in these programs. Training reengineering efforts have reduced the length of training programs by revising curricula, infusing new technology, and applying distance learning options. The creation of a quota management office and the development of new ADP systems—the Navy Training Reservation System (NTRS) and the Navy Training Quota Management System (NTQMS)—will allow the Navy to better manage the flow of recruits through their initial training programs and, thus, reduce NUI time.

Because most of these initiatives are new or recently implemented, their effects won't be seen until FY98-99 and later year groups. Unfortunately, the current version of the STF database contains training data only for courses completed by the end of FY98; thus, we were unable to examine the FY98-99 year groups for 4YOs and the FY97-99 year groups for 6YOs.

Distribution list

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