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COST AND BENEFIT ANALYSIS OF ALTERNATIVES TO THE NAVAL RESERVE OFFICER TRAINING CORPS FLIGHT PHYSICAL SCREENING PROCESS

by

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September 2000

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This thesis determined the optimal pre-commissioning flight physical site for every NROTC unit and used derived attrition information to estimate the cost of the current screening system, as well as the two selected alternatives. Further, all three screening options were compared against each other utilizing a cost-benefit analysis.

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ABSTRACT

Questions have arisen concerning the efficiency of the Naval Reserve Officer Training Corps (NROTC) flight physical screening process. This study analyzed two alternative means to aeronautically assess these individuals: restructuring the pre-commissioning flight physical and opening the Aviation Certification Evaluation and Screening (ACES) program to all NROTC aviation candidates. A detailed description of the current NROTC aviation screening system, quantification and analysis of flight physical attrition rates, and recommendations for streamlining the overall process are also provided.

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I. INTRODUCTION

A. BACKGROUND

The Department of the Navy entity responsible for determining if aviation candidates are physically qualified to serve as a pilot or flight officer is the Naval Operational Medical Institute (NOMI). The specific office within NOMI that makes these determinations is Code 26, Physical Evaluations.

To NOMI's credit, the end result of their aviation medical screening process is accurate; however, questions have arisen regarding its efficiency. Perhaps the major apprehension is that the current system can become very expensive when there are discrepancies between pre-commissioning and NOMI flight physical results. Often enough to cause concern, a potential aviator will pass the pre-commissioning physical, report to Pensacola, and be found not physically qualified by NOMI. This creates a large—wasteful—personnel-relocation expense for the Navy; in addition to the relocating costs, the salaries of the transitioning officers should also be considered an expense.

Ensigns reporting to flight school earn their commissions from one of three communities: just under 40% come from the United States Naval Academy (USNA), just over 40% come from the Naval Reserve Officer Training Corps (NROTC), and roughly 20% are commissioned through Officer Candidate School (OCS) [navaltx.navy.mil/cnatra/programs.htm]. According to several individuals within NOMI, ensigns commissioned through the NROTC program pose the greatest burden on the screening system. The objective of this thesis is, therefore, to ascertain means through which the NROTC aviation screening process can be made more cost-effective.

B. PURPOSE

This thesis critically assesses the costs associated with screening NROTC aviation candidates. Secondly, the study presents alternative options available to NOMI to screen these individuals. The study then identifies the costs and benefits associated with implementing these options.

C. SCOPE

This thesis will provide recommendations for increasing the efficiency of the initial Naval aviation medical screening process. It presents a cost-benefit analysis of alternative means to conduct pre-commissioning flight physicals for NROTC midshipmen and officer candidates. Analyzing the screening of aviation candidates from the United States Naval Academy and OCS was deliberately excluded from this study; these officer programs were excluded because of their centralized structure. The NROTC program, on the other hand, doesn't have a centralized structure. Candidates from this program come from one of fifty-seven units at colleges across the United States, completing their pre-commissioning physicals at approximately 150 different facilities (CAPT Deakins, 31 MAY 00 email). Because of the numerous facilities used for the pre-commissioning physicals, a standardized level of quality (pertaining to the flight physical) has been extremely hard to maintain and follow—producing questionable discrepancies between pre-commissioning and NOMI flight physical results.

D. RESEARCH QUESTIONS

1. Primary Research Question

How much does the inefficiency of NOMI's NROTC aviation medical screening process cost and how might this process be improved?

2. Secondary Research Questions

a. How does NOMI currently screen NROTC midshipmen for entrance into the Naval aviation community?

b. How frequently is an individual that passed their pre-commissioning flight physical found not physically qualified for aviation service by NOMI?

c. Considering the DoN's infrastructure, what medical facilities have flight surgeons capable of giving a pre-commissioning flight physical?

d. What would be the costs and benefits of changing NOMI's current screening system?

E. METHODOLOGY

This thesis will mainly evaluate the primary mission of NOMI's Code 26 Office, as it pertains to screening NROTC aviation candidates. The information needed to conduct this study will be drawn from correspondence with individuals within NOMI's command, and a literary search of texts, magazines, publications, and all other library resources relevant to the topic. After understanding NOMI's mission, objectives, and screening process, attrition rates between the pre-commissioning and NOMI physicals will be determined; these rates will be calculated as follows:

1. Identifying how many NROTC candidates pass the pre-commissioning physical and are sent to Pensacola, FL for flight training.
2. Identifying how many NROTC commissioned ensigns are found not physically qualified for aviation at the NOMI flight physical.

Lastly, alternatives to the current system will be formulated (with their costs determined) and a cost-benefit analysis will be constructed to compare these alternatives.

F. ORGANIZATION OF STUDY

The reader has now been introduced to the background of the subject matter this thesis addresses, the purpose and scope of this study, the primary and secondary

questions to be answered, and the methodology followed throughout the thesis. The study will be organized as the outline below illustrates.

I. Introduction
II. An Overview of the Naval Operational Medical Institute
III. Attrition Analysis of the NROTC Aviation Screening Process
IV. Cost-benefit Analysis of Alternatives to the NROTC Aviation Screening Process
V. Conclusion and Recommendations

II. AN OVERVIEW OF THE NAVAL OPERATIONAL MEDICAL INSTITUTE

A. COMMAND HISTORY

The command history presented below is intended to clarify the meaning, name, and purpose of the Naval Operational Medical Institute as it transitioned through the years; the information was obtained from NOMI's website [www.nomi.navy.mil/comhist.htm].

Training of Naval flight surgeons dates back to 1921. From 1926 to 1934, the Navy shifted its flight surgeon training from the US Army School of Aviation Medicine to its own Naval Medical School, Washington, D.C. The Army then again assumed the responsibility for the training program in 1934 at its School of Aviation Medicine, Randolph Field, TX.

On 20 NOV 1939, the mission of the Medical Department, Naval Air Station, Pensacola, FL was amended to include training Naval flight surgeons. Then, in OCT 1946, the Secretary of the Navy officially established the School of Aviation Medicine. On 18 AUG 1965, the School of Aviation Medicine was renamed the US Naval Aerospace Medical Institute (NAMI).

On 7 DEC 1992, the Secretary of the Navy authorized changing the official name of this Institute to the Naval Aerospace and Operational Medical Institute (NAOMI); the name change was authorized to reflect more accurately the mission and functions of the command as a resource serving all Naval warfare specialty communities. Just over four years later, the Bureau of Medicine and Surgery authorized the Naval Aerospace and Operational Medical Institute to change its name to the Naval Operational Medical

Institute (NOMI). Once again, the change was enacted to more accurately represent the vision, responsibility, and daily actions of this Naval command.

According to LCDR Savoia-McHugh, a flight surgeon formerly stationed at NOMI's headquarters, there are offices within NOMI that still have a NAMI designation (NAMI Codes 42 and 26 are synonymous with NOMI Codes 42 and 26); NAMI is also currently referred to as BUMED 236 (26 APR 00 email).

B. MISSION AND RESPONSIBILITIES

Overall, NOMI's Code 26 (Physical Evaluations Department) is responsible for determining if aviation candidates are aeronautically qualified. The mission of NOMI's Code 26 Office is to:

1. Provide support for the NOMI Strategic Plan through support and consultative services for operationally related Naval medical matters worldwide.
2. Provide medical evaluations including diagnosis, medical management and disposition, of general and special duty applicants and designated referred personnel.
3. To provide training for Aviation Medical Personnel who will serve all warfare communities.

The Physical Evaluations Department, located at NAS Pensacola, FL, functions as the "Aeromedical and Operational Medical Evaluations Gatekeeper." This department is responsible for providing fifty-four types of physical examinations for various commands, encompassing all programs leading to general duty commissioning / enlistment, and special duty for aviation or other SPECWAR community designations. On average, NOMI performs over 6,500 complete physical evaluations annually. The Physical Evaluation Department activities related to aviation are the following:

1. Provide initial encounters for all aviation students.
2. Determine if applicants, students, and designated individuals are physically qualified and aeronautically adaptable.

Secondary missions include: laboratory functions, audiograms, radiological and other ancillary support for the Clinical Directorate and Hyperbaric Medicine, all medical readiness exams, and convening Special Boards of Flight Surgeons. In addition, Radiation Health Officer, Lab Control Officer, Infectious Disease Officer and Blood Borne Pathogen / Biohazardous Waste and spill clean-up are duties also assigned to Code 26 [www.nomi.navy.mil/code02/code26.htm].

C. NROTC AVIATION SCREENING PROCESS

Today's Naval aircraft operate in a stringent environment; changing altitudes, performing G-maneuvers, operating in cramped and static cockpits, and breathing pure oxygen can be difficult for humans to cope with. The physiological effects that may result from these stresses can be serious and consequential: blackout, red-out, hypoxia, backache, nausea, ear and sinus blockage, vertigo, etc. Because of this, it's imperative for the Navy to have a sound medical screening process. The screening must highlight and restrict individuals not meeting predetermined physical standards from starting pilot training. This is especially important considering it costs approximately $2 million to fully train a Naval aviator. If a pilot were to attrite for a pre-existing condition not initially detected, the Navy would be out a costly investment.

As NOMI's medical screening process is currently structured, all potential aviators take two flight physicals (a pre-commissioning flight physical and another upon arriving at Pensacola, FL). There is an exception to this, if the candidate's pre-commissioning physical is not more than approximately ten months old, it is considered current and the individual isn't required to repeat another complete physical before beginning flight training (CDR Black 3 AUG email). Only a review is required in these

circumstances; the extent of the review is based upon the results of the candidate's physical health history questionnaire and the date of their last physical. In all cases, every candidate has their anthropometrical measurements repeated and visual examination scores confirmed (no one performs these exams to the same standards as NOMI). According to CAPT Deakins, head of NOMI's Physical Exams and Evaluations, "About a third of our exams are 'partial,' i.e. they do not require the full exam, but we must do some parts of it to issue an admin up-chit" (12 JUL email).

The pre-commissioning physical required for all aviation candidates is completed prior to service selection and determines if one is eligible to apply for an aviation billet. Any physician can perform this physical as long as the examination covers all of NOMI's specifications. Before the physical is submitted to NOMI Code 42, however, it must be countersigned by a flight surgeon of the uniformed services of the United States—helping to ensure results meet all standards (CAPT Deakins 25 JUL email).

In the pre-commissioning physical, all candidates are subjected to vision, dental, and hearing exams, blood work, anthropometric measurements, urinalysis, EKG monitoring, a chest X-ray, and lastly, a flight surgeon examination or review. Upon the physical's completion, a flight surgeon makes the final determination if the candidate is physically qualified. If an unfavorable determination is made, the individual will most likely be disqualified and the screening process ended (some disqualifying conditions can be overlooked through a waiver process).

In the screening process's second stage, all ensigns sent to Pensacola for flight training undergo another flight physical (or review if within the ten month window) at NOMI's headquarters. This follow-on physical / review is designed to catch erroneous

judgments or measurements taken during the pre-commissioning physical. The physical also ensures that the candidate is physically qualified just prior to beginning pilot training; things can happen to candidates in the months between their pre-commissioning physical and when they actually start flight training (vision may deteriorate, athletic injuries may occur, sickness may develop). NOMI's physical is identical to the pre-commissioning physical, with the exception that those performing the physical are more in tune to NOMI's standards—a tighter level of conformity across candidates is maintained. Upon completing the NOMI flight physical / review, if a flight surgeon determines the candidate physically qualified, the individual is cleared to start Aviation Pre-flight Indoctrination (API) and the initial screening process is finalized. If the candidate is judged not physically qualified, the individual is not eligible for aviation (barring a waiver being granted).

Because of the importance of an up-to-date physical evaluation, the redundancy of NOMI's re-check structure is arguably justified. NOMI must ensure that the day a candidate actually starts aviation training they are physically qualified, and two physicals are required to do this.

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III. ATTRITION ANNALYSIS OF THE NROTC AVIATION SCREENING PROCESS

A. OVERVIEW

This chapter will discuss several problems associated with the NROTC aviation screening process. It will then quantify attrition levels of Student Naval Aviators (SNA) both before and after flight training commences. Lastly, current actions being taken by the Navy to combat its SNA attrition problem will be described.

B. PROBLEMS ASSOCIATED WITH THE NROTC SCREENING PROCESS

There are several announced problems with NOMI's NROTC aviation candidate screening process. The biggest problem facing NOMI deals with the number of candidates found Physically Qualified (PQ) for aviation service at the pre-commissioning physical and Not Physically Qualified (NPQ) at the NOMI physical.

Perhaps the strongest force driving the screening's attrition deals with the decentralized structure of the NROTC commissioning program. As mentioned in Chapter I, there are fifty-seven NROTC units associated with sixty-nine colleges across America. Table 3.1 on the following page provides a list of all NROTC stand-alone and consortium units; this information was obtained through CNET's web site [www.cnet.navy.mil/nrotc/nrotc_addr_phlst.htm]. The scattered location of the NROTC program presents a large management, conformity, and tracking problem for NOMI—especially when considering that approximately 150 different facilities are used for pre-commissioning aviation physicals. According to CAPT Deakins, it has been difficult to maintain a consistent uniformity in the NROTC physical screening and reviewing

NROTC Units		NROTC Consortium Units
The University of Arizona	University of Rochester	**Atlanta Region Morehouse College**
Auburn University	Savannah State University	-Morehouse College
University of California Berkeley	University of South Carolina	-Georgia Tech
Carnegie Mellon University	Southern University and A & M College	**Boston University-MIT**
The Citadel	State University of New York Maritime College	-Boston University
University of Colorado	University of Texas	-Massachusetts Institute of Technology
Cornell University	Texas A & M University	**Chicago Area**
University of Florida	Tulane University	-Illinois Institute of Technology
Florida A & M University	University of Utah	-Northwestern University
The George Washington University	Vanderbilt University	**Hampton Roads**
College of the Holy Cross	University of Virginia-Maury Hall	-Old Dominion University
University of Idaho	Virginia Military Institute	-Norfolk State University
University of Illinois	Virginia Polytechnic Institute and State University	-Hampton University
Iowa State University	University of Washington	**Houston**
Jacksonville University	University of Wisconsin	-Rice University
University of Kansas		-Prairie View A & M
Maine Maritime Academy		**Los Angeles**
Marquette University		-University of California, Los Angeles
Miami University		-University of Southern California
University of Michigan		**Mid-South Region University of Memphis**
University of Minnesota		-University of Memphis
University of Missouri		-University of Mississippi
University of Nebraska		**North Carolina Piedmont Region**
University of New Mexico		-Duke University
Norwich University		-University of North Carolina
University of Noter Dame		-North Carolina State University
Ohio State University		**Philadelphia**
University of Oklahoma		-Villanova University
Oregon State University		-University of Pennsylvania
Pennsylvania State University		**San Diego**
Purdue University		-San Diego State University
Rensselaer Polytechnic Institute		-University of San Diego

Table 3.1 Stand-Alone and Consortium NROTC Units

processes, as well as a standardized automated data processing system (31 MAY 00 email). This overall lack of conformity has resulted in pre-commissioning physical sites performing physicals short of NOMI's standardized level of quality. It has also made it easier for incorrectly documented discrepancies to go unnoticed (until the individuals are examined at NOMI's facilities).

Initially, the research performed for this thesis hinted that another likely cause of discrepancies between the two physicals dealt with the quality of the vision exam given at the pre-commissioning physical; specifically, that a large number of sites used for this physical didn't have the technology needed to perform an accurate visual diagnosis. It was thought that a TOMEY corneal topography eye machine would elevate the accuracy of a candidate's initial vision assessment. According to Peter Leadem, a sales representative for Lombart Instruments (located in Norfolk, VA), a machine such as the TOMEY performs corneal topography functions as well as auto refractions of the eye; this capability allows for a color elevation map of the cornea (checking for uncommon irregularities of the eye) and a close approximation of the candidate's vision (JUL 00 telephone conversation).

Opposing the above viewpoint, LT Carl Ruoff, a Naval Optometrist stationed at NOMI's headquarters, explained that the corneal topographer isn't necessarily the best machine for routine screening of applicants' vision. Upon reviewing the contents of Table 3.2 (a listing of the most common disqualifying vision aliments found by CDR Black's query of NOMI's database), LT Ruoff exclaimed that the corneal topographer could not screen for most of the conditions listed. He stated that an armed forces vision tester (similar to the ones the Department of Motor Vehicles (DMV) uses) would be a

much better piece of equipment for an overall visual assessment. This vision tester, along with a well-trained technician, would be able to screen for all the conditions listed in Table 3.2 (21 JUL email).

In summary, although NOMI has a TOMEY it can use for final vision checks, the machine isn't essential for an accurate visual diagnosis. Therefore, having a TOMEY at every pre-commissioning physical site is not needed; what is required, however, is a general vision scanner and a well-trained flight surgeon or technician.

REFRACTIVE ERROR
DDVA, EXCEEDING STANDARDS BOTH EYES
FUSION W/DEFECTIVE STEREOPSIS (DEFECTIVE DEPTH PERCEPTION)
DM FAILURE OF DEPTH PERCEPTION TEST – VERHOEFF
DDVA, EXCEEDING STANDARDS LEFT EYE
COLOR VISION DEFICIENCIES
DDVA, EXCEEDING STANDARDS RIGHT EYE
UNSPECIFIED DISORDERS OF EYE MOVEMENTS (OPTHALMOPLEGIA STRABISMUS)
CORNEAL DYSTROPHY NOS
DDVA, NOT CORRECTED TO 20/20 BOTH EYES

Table 3.2 Most Common Disqualifying Eye Conditions

C. ATTRITION LEVELS QUANTIFIED

1. The NROTC Flight Physical Process

The information presented below was obtained from CDR James Black, a flight surgeon stationed at NOMI's Code 26 Office. CDR Black produced this information through an exhaustive query of NOMI's database; the data was sorted using Microsoft Access and presented using Microsoft Excel.

The data CDR Black produced cites the number of NROTC midshipmen and officer candidates for whom NOMI performed a flight physical / review on during the years 1995 to1999. Contained within this data are the total number of candidates

determined to be NPQ, and how many NPQ cases were waived. Table 3.3 summarizes CDR Black's findings.

Source	Reported Number of Applicants	Status	Status Breakdown	Waiver %'s of NOMI NPQ	NPQ % of Reported NOMI Applicants	NPQ % of Reported CNET Applicants	No Waiver % of Reported NOMI Applicants	No Waiver % of Reported CNET Applicants
NOMI Overall	**1493**	NPQ	149		9.98%	8.03%		
CNET Overall	**1856**	No Waiver	71	47.65%			4.76%	3.83%
		Waiver	78	52.35%				
NOMI 1995	**471**	NPQ	43		9.13%	7.92%		
CNET 1995	**543**	No Waiver	20	46.51%			4.25%	3.68%
		Waiver	23	53.49%				
NOMI 1996	**334**	NPQ	38		11.38%	10.92%		
CNET 1996	**348**	No Waiver	14	36.84%			4.19%	4.02%
		Waiver	24	63.16%				
NOMI 1997	**223**	NPQ	32		14.35%	10.56%		
CNET 1997	**303**	No Waiver	17	53.13%			7.62%	5.61%
		Waiver	15	46.88%				
NOMI 1988	**228**	NPQ	18		7.89%	5.59%		
CNET 1998	**322**	No Waiver	10	55.56%			7.89%	3.11%
		Waiver	8	44.44%				
NOMI 1999	**237**	NPQ	18		7.59%	5.29%		
CNET 1999	**340**	No Waiver	10	55.56%			7.59%	2.94%
		Waiver	8	44.44%				

Table 3.3 Pre-Commissioning Flight Physical Attrition Rates

There are some problems with the data presented in Table 3.3, however. Due to inaccurate and / or noncompliant data entry, the majority of reporting from locations (universities) of the NROTC candidates found NPQ could not be determined; data errors include entering incorrect UIC's, or failure to enter a UIC at all (a UIC is a code that identifies locations of Navy facilities). Second, as Table 3.3 illustrates, the total number of NROTC individuals identified by NOMI's database to have had a flight physical or

review doesn't agree with the number of Naval aviation candidates identified by the Chief of Naval Education and Training (CNET); CNET analysts Bonnie Weatherholtz and Maryln Tetzlaff provided the CNET aviation student numbers presented in Table 3.3.

There are two plausible explanations for the reported differences in candidate numbers. The information provided by Mrs. Weatherholtz represents the number of midshipmen and officer candidates selected for aviation; however, the figures have been determined to be somewhat overstated. Some of these aviation selectees postponed flight school to pursue a graduate degree, and this isn't reflected in the data. Second, as mentioned in chapter two, about a third of NOMI's exams are partial. CDR Black explained that these partial physicals (or reviews) may have not been entered into the database, understating NOMI's recorded number of physicals (26 JUL email). So, the true number of individuals sent to flight school lies between the ranges presented in Table 3.3—most likely skewed towards the numbers CNET reported.

2. Analysis of Attrition Percentages

NROTC units across the country schedule flight physicals in their students' junior or senior year; either way, there is a time lag between the pre-commissioning and NOMI physical. Because of this time span, it is reasonable to expect that a small number of individuals will be found NPQ by NOMI (the physical status of the candidates may deteriorate during the time). However, as Table 3.3 illustrates, the number of candidates disqualified from 1995 to1999 appears to be more than expected due to this deterioration. Using NOMI's numbers, the percentage of candidates found NPQ from 1995-1999 was 9.8%, and 8.03% according to CNET's statistics. The overall percentage of candidates not granted a waiver according to NOMI and CNET's data was 4.76% and 3.83%,

respectively. Although the data used to determine the attrition rates is somewhat subjective, and it's impossible to predict how many candidates' physical status declined during the time lag between physicals (they legitimately passed the pre-commissioning physical), the calculated attrition rates seem to show room for improvement. It appears that a lack of conformity (quality) associated with the pre-commissioning physical has been allowing individuals with disqualifying conditions to 'slip' through the first stage of the process's screening.

3. The Flight School Attrition Rate

According to CDR Skinner, Training Wing Five's Plans and Stats Officer, the attrition rate of Student Naval Aviator's (SNA) has historically been around 9.2%. However, for reasons unexplained, the current rate is approximately 11% (an interesting aside to these figures is that attrition levels for Marine students have consistently been four percentage points lower than SNA's). This high attrition rate, the accumulation of large pools of individuals waiting to start various stages of flight training, and problems associated with the physical screening process prompted the Navy to inaugurate the Aviation Certification Evaluation and Screening (ACES) program.

D. THE ACES PROGRAM

All of the information conveyed below was provided by LCDR Rad, the Naval Aviation Schools Command (NASC) ACES program director.

The ACES program, headquartered in Pensacola, FL, is a five day training event that was started in JAN 00. Initially, it has been directed towards individuals entering Officer Candidate School. However, the current plan dictates that, when all needed resources are in place, aviation candidates from all three commissioning sources will be

included. As of AUG 00, 139 students have completed ACES. Table 3.4 provides a breakdown of the results. Note, not all individuals needing anthropometric cockpit fit-checks were disqualified. Also, the 14.4% of ACES inaugural students determined to be NPQ without waiver cannot be related or compared to NROTC attrition rates (OCS ACES students are not subjected to a pre-commissioning flight physical).

Status	Totals	% of Total
Students Screened to Date	139	
Students NPQ (No Waiver)	20	14.4%
Students NPQ (Waiver Granted)	7	5.0%
Students DOR	5	3.6%
Students Re-designated	6	4.3%
Students Needing Remedial PT	26	18.7%
Students Needing Remedial Swim	16	11.5%
Students Needing Cockpit Fit Check	32	23.0%
Students Initially Qualified	68	48.9%

Table 3.4 Year to Date Results of the ACES Program

ACES, in essence, provides a thorough screening of future student aviators; the program's first stage assesses the physical status of all candidates with a complete NOMI flight physical and anthropometric cockpit fit-check. The remainder of the program is designed to screen candidates by giving them a realistic exposure to the demands of flight school. Table 3.5 lists the major components of the ACES program.

- NOMI Flight Physical - Anthropometric Measurements (Cockpit Fit-Checks) - VT Squadron Tour - Training Devices Tour / Demo - API Directors Brief - OCS Director / Drill Instructor Brief - OCS Tour / Q & A Session - PT and Swim Screen - Carrier Deck Mock-Up Tour - Naval Aviation Museum Tour - Flight Gear Familiarization / Flight Safety Briefings - Simulator Flight / Briefings - T-34 Training Flight / Briefings

Table 3.5 Contents of the ACES Program

Throughout this exposure, ACES highlights the specific struggles of every student in order that their problems may be resolved prior to beginning flight training. Another beneficial aspect of ACES is that it gives students an opportunity to decide if the Naval aviation community is something they really want to pursue; this will most likely reduce the number of candidates that Drop on Request (DOR) once flight school begins—alleviating the "It just wasn't right for me" scenario.

Overall, the program has the potential to be very beneficial. Because students are given the chance to experience flight school's demands first hand, they'll know how to become better prepared. This prior preparation should in turn lower the number of individuals who roll back a class because of preventable difficulties (low PRT scores, insufficient swimming abilities, etc.). It's also logical to conclude that ACES will decrease the number of SNA's that drop / fail out of flight school. Lastly, the program provides a means to give an extremely accurate flight physical; this should reduce the number of candidates found NPQ for aviation at the NOMI flight physical given prior to flight school. Furthermore, if needed, the ACES program provides more time for the waiver process.

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IV. COST-BENEFITANNALYSIS OF ALTERNATIVES TO THE NROTC AVIATION SCREENING PROCESS

A. OVERVIEW

This chapter will analyze two alternative means for NOMI to screen NROTC aviation candidates. The costs associated with these alternatives will be quantified and compared against each other and the process as it stands today. Comparisons will be made utilizing a cost-benefit analysis that tracks all relevant statistical data from 1995 to 1999. The chapter will open with an explanation of cost-benefit analyses and conclude with a sensitivity analysis.

B. COST-BENEFIT ANALYSES

A cost-benefit analysis (CBA) is an analytical tool aimed at helping decision makers estimate resulting costs and gains from alternative courses of action. According to Boardman, Greenberg, Vining, and Weimer, in their book *Cost-Benefit Analysis: Concepts and Practice*, the primary benefits of a CBA are: a systematic categorization of impacts as benefits and costs, valuing these impacts in monetary terms, and determining net benefits.

The underlying purpose of every CBA seeks to allocate resources as efficiently as possible. In order for this to occur, the positive and negative aspects of all alternatives must be translated into a common measure—usually dollars. This is never an easy undertaking; the methods and assumptions needed to place benefits and costs onto an equal plane are often complex and controversial. It's easy to quantify costs; benefits, on the other hand, are intangible and difficult to quantify, sometimes hard to even estimate.

According to OMB Circular No. A-94 (Transmittal Memo No. 64), benefit-cost analysis is recommended as the technique to use in formal economic analysis of

government programs or projects. Further, the circular states that the standard criterion for deciding whether a government program can be justified on economic principles is net present value (the discounted monetized value of the CBA's expected net benefits). This discounting allows benefits and costs occurring in different time periods to be fairly compared against one another.

OMB A-94 instructs that in instances where monetary values of some benefits or costs cannot be determined, a comprehensive enumeration of the different types of benefits and costs, monetized or not, should be used to help identify the possible range of program effects. Second, benefits and costs should always be quantified, even when it isn't feasible to assign dollar values; here, physical measurements may be possible and useful. Lastly, when constant-dollar (real) amounts represent the CBA's benefits and costs, the proper discount rate to use is 7%. This rate approximates the marginal pretax rate of return on an average private sector investment in recent years.

C. INTRODUCTION TO ALTERNATIVES ANALYZED

The underlying objective of the alternatives being analyzed is to decrease the number of aviation candidates found physically qualified at the pre-commissioning flight physical and not physically qualified at NOMI's physical; the overall goal is to make the screening process more efficient and cost-effective. The different options explored, however, are very different; one restructures the pre-commissioning flight physical while the other sends all aviation candidates to Pensacola, FL for their initial flight physicals (as well as the ACES program). All alternatives are meticulously described in the following text.

D. ALTERNATIVE ONE: RESTRUCTURING THE PRE-COMMISSIONING FLIGHT PHYSICAL

1. Description

Alternative one is the most complex option analyzed by this CBA. Restructuring the pre-commissioning flight physical is an optimization problem with its goal being to determine the best flight physical site for every NROTC unit. This optimal assignment, taking into consideration all relevant variable and fixed costs, will minimize the number of facilities used for NROTC physicals, and overall cost.

The basis driving alternative one is that reducing the number of facilities would make it easier for NOMI to standardize this stage of the screening to their specifications. This should, in turn, increase the accuracy of the physical's results—decreasing the number of candidates found NPQ at the second flight physical. Also, minimizing facilities used for the pre-commissioning flight physical would help with the uniformity of data processing associated with the physical. This theoretically should reduce the number of documentation errors and enable NOMI to better track the overall performance of the facilities used for the screening—highlighting the locations incorrectly passing candidates with disqualifying conditions.

2. Methodology

The methodology followed in analyzing alternative one is as follows:

1. Determine DoN domestic health care facilities in which Navy flight surgeons are stationed.
2. Determine the location of every NROTC unit.
3. Create a distance matrix representing the distances from every NROTC unit to every flight surgeon location.
4. Identify all variable costs associated with sending candidates to sites having flight surgeons (per diem rates, reimbursable mileage rates, air travel costs).
5. Identify the number of aviation candidates produced from every NROTC unit.
6. Determine average cost and aviator production numbers.

7. Assign a fixed cost value for using a flight surgeon facility.
8. Implement the distance and averaged cost and production data into an optimization program to determine the optimal assignment solution.
9. Use the optimal assignments (generated from the averaged data) to determine what the resulting 1995-1999 yearly costs would have been.

3. Creating a Distance Matrix

The first step in restructuring the pre-commissioning physical was to determine the location of all domestic DoN facilities capable of giving a flight physical. The resources needed to conduct this physical are very basic, and can be found in almost every Navy hospital or medical clinic. The main constraint is that the physical must be performed, or countersigned, by a flight surgeon of the US armed forces. Because the goal of the restructuring is to increase the physical's conformity to NOMI's standards, only locations with active duty Navy flight surgeons were selected.

Three sources were compiled to determine the Naval health service facilities and air stations having flight surgeons: *The 2000 Guide to US Military Installations*, correspondence with LCDR Steve Keener, the Navy Personnel Command's flight surgeon placement officer, and the Naval Medical Information Management Center's web site [http://navmedinfo.med.navy.mil/mfaclink1.htm]. All the health care facilities and air stations identified by these sources were contacted to confirm their flight surgeon status. Table 4.1 shows the medical facilities supported by a Naval flight surgeon considered by alternative one. This table is not a Navy-wide aggregate listing; a number of branch and ambulatory clinics were excluded because of their proximity to a Naval air station, or larger Naval hospital.

Table 4.1 contains thirty-two facilities and is organized as follows: locations with a backslash indicate two facilities are located within the same zip code; further, the

facility listed first represents the location where flight physicals are actually performed. For example, all physicals supporting NAS Brunswick are done at the Branch Medical Clinic (BMC) Brunswick. The relationships Table 4.1 presents were determined by speaking with health care personnel at the specific clinics and air stations listed.

Facility	
AFB Tinker	NAS Kingsville
BMC / NAS Brunswick	NAS Meridian
BMC / NAS China Lakes	NAS / NACC New Orleans
BMC / NAS Point Mugu	NAS North Island / NMC San Diego
BMC Milington	NAS Oceana
MAG 39 / NH Camp Pendleton	NAS Pensacola
MCAS / NH Beaufort	NACC Newport
MCAS Miramar	NACC Portsmouth, NH
MCAS New River	NH / MCAS Cherry Point
MCAS Yuma	NH / NAS Corpus Christi
NAS Atlanta	NH Great Lakes, IL
NAS Fallon	NH / NAS Lemoore
NAS Fort Worth	NH Oak Harbor / NAS Whidbey
NAS / NH Jacksonville	NMC Annapolis, MD
NAS Key West	NMC / NAS Pax River
NAS JRB Willow Grove	NMC Quantico, VA

Table 4.1 Flight Surgeon Locations Considered by Alternative One

With all relevant flight surgeon locations identified, a matrix containing the distance from every NROTC unit to every facility having a flight surgeon was created. The distances were determined using Yahoo! Driving Directions [http://maps.yahoo.com/py/ddResults.py]. Table 4.2 displays the resulting matrix (highlighted cells represent distances under 420 miles).

University	Zip	AFB Tinker	BMC / NAS Brunswick	BMC / NAS China Lake	BMC / NAS Point Mugu	BMC Millington	MAG 39 / NH Camp Pendleton	MCAS / NH Beaufort	MCAS Miramar	MCAS New River	MCAS Yuma	NAS Atlanta	NAS Fallon	NAS Fort Worth	NAS / NH Jacksonville	NAS JRB Willow Grove	NAS Key West	NAS Kingsville	NAS Meridian	NAS / NACC New Orleans	NAS North Island / NMC San D.	NAS Oceana	NAS Pensacola	NACC Newport	NACC Portsmouth, NH	NH / MCAS Cherry Point	NH / NAS Corpus Christi	NH Great Lakes	NH / NAS Lemoore	NH Oak Harbor / NAS Whidbey	NMC Annapolis	NMC / NAS Pax River	NMC Quantico
		73145	4011	93555	93042	38054	92055	29902	92145	28545	85369	30060	89496	76127	32212	19090	33040	78383	39309	70143	92135	23460	32508	2840	3804	28533	78419	60088	93246	98278	21402	20870	22134
Arizona	85721	1049	2840	552	550	1434	451	2023	412	2202	240	1735	1065	919	1946	2424	2446	1031	1467	1416	413	2350	1593	2678	2763	2253	1028	1859	684	1706	2333	2340	2302
Auburn	36849	843	1332	2145	2205	396	2102	381	2063	569	1891	123	2453	743	332	911	832	922	210	362	2064	697	220	1169	1255	621	920	854	2287	2840	786	755	717
Boston-MIT	2215	1666	141	2953	3102	1311	3020	1000	3042	801	2849	1090	2857	1800	1170	300	1661	2076	1321	1517	3022	657	1413	76	64	796	2074	1024	3096	3128	428	465	480
Cal Berkeley	94720	1630	3239	390	384	2105	459	2834	496	2954	663	2531	272	1773	2800	2878	3300	1885	2321	2271	507	2987	2448	3091	3162	2964	1883	2155	203	885	2844	2889	2845
Carnegie Mellon	15213	1106	718	2398	2534	775	2465	681	2460	591	2288	693	2337	1264	851	302	1341	1651	898	1094	2461	447	1007	557	641	585	1649	505	2541	2606	269	314	269
Chicago Area	60208	810	1134	1994	2110	564	2060	950	2083	997	1992	718	1898	1016	1086	772	1585	1408	822	940	2098	916	931	985	1057	1007	1405	24	2136	2143	739	783	739
Colorado	80309	696	2170	1008	1091	1152	1074	1713	1088	1811	1114	1410	1016	904	1777	1759	2250	1140	1416	1431	1105	1807	1619	2001	2096	1821	1136	1056	1149	1395	1733	1775	1730
Cornell	14853	1389	468	2648	2761	1059	2714	910	2737	710	2571	948	2552	1548	1079	214	1570	1923	1167	1383	2752	587	1271	360	389	705	1920	719	2790	2821	343	399	389
Florida	32611	1233	1359	2472	2483	790	2371	249	2333	554	2161	349	2694	1070	80	938	515	1090	548	530	2333	704	348	1197	1282	605	1088	1095	2604	3081	813	782	743
Florida A & M	32314	1090	1452	2329	2335	555	2228	342	2189	647	2017	294	2613	926	176	1033	675	946	404	387	2190	800	204	1292	1375	699	944	1013	2461	2994	906	877	839
George Washington	20052	1336	578	2616	2759	878	2683	554	2700	355	2528	643	2570	1368	724	157	1214	1644	888	1084	2701	211	966	416	501	349	1641	737	2759	2838	35	80	33
Hampton Roads	23529	1375	776	2676	2844	917	2743	465	2738	206	2567	575	2722	1406	635	355	1126	1600	861	1040	2740	25	897	614	699	185	1597	925	2819	3027	230	199	161
Holy Cross	1610	1630	187	2916	3064	1274	2983	964	3005	765	2812	1053	2820	1764	1134	263	1624	2040	1284	1480	2985	621	1376	72	90	759	2037	987	3059	3089	392	448	443
Houston	77005	453	1983	1616	1614	871	1516	1052	1477	1259	1305	810	2130	283	883	1568	1383	232	547	353	1478	1387	530	1821	1906	1311	229	1227	1749	2529	1455	1445	1407
Idaho	83844	1819	2969	1040	1342	2208	1410	2759	1447	2829	1432	2456	713	2025	2824	2607	3324	2433	2508	2537	1458	2752	2669	2821	2892	2839	2430	1821	1154	376	2574	2619	2574
Illinois	61820	679	1178	1971	2066	419	2038	875	2034	922	1861	607	1911	875	975	762	1475	1262	711	795	2034	905	820	1016	1101	932	1260	177	2114	2248	729	773	729
Iowa state	50011	583	1462	1688	1783	685	1754	1250	1777	1206	1766	963	1592	789	1331	1100	1831	1197	985	1061	1792	1244	1176	1313	1385	1307	1194	377	1830	1866	1067	1111	1067
Jacksonville	32211	1254	1294	2493	2499	811	2392	184	2353	489	2181	369	2714	1091	20	873	508	1111	569	551	2354	639	369	1132	1217	540	1108	1115	2625	3101	748	717	679
Kansas	66045	316	1584	1550	1645	581	1617	1132	1639	1235	1501	829	1583	524	1196	1168	1696	932	881	958	1654	1220	1042	1422	1507	1246	929	588	1693	1970	1135	1180	1135
UCLA / USC	90089	1342	3127	158	64	1817	64	2511	121	2666	288	2223	584	1406	2434	2717	2934	1518	1954	1904	132	2733	2081	2978	3050	2676	1516	2042	203	1224	2683	2728	2685
Maine Maritime Academy	4421	1933	141	3220	3334	1571	3287	1268	3309	1069	3116	1357	3124	2067	1437	567	1928	2344	1588	1784	3289	925	1680	340	211	1063	2341	1291	3363	3393	696	752	747
Marquette	53201	873	1221	2026	2140	642	2093	1034	2145	1081	2055	802	1930	1079	1169	859	1669	1485	905	1017	2130	1003	1015	1072	1144	1091	1482	56	2169	2072	826	870	826
Miami	45056	845	1008	2138	2251	517	2204	685	2200	731	2028	485	2131	1014	855	592	1345	1401	648	844	2201	746	757	847	931	742	1399	328	2280	2430	559	603	559
Michigan	48109	1010	890	2212	2326	727	2278	894	2301	851	2193	695	2115	1216	1064	590	1554	1602	857	1053	2316	734	966	784	813	662	1600	292	2354	2394	557	601	557
Mid South Region of Memphis	38152	468	1438	1769	1898	16	1836	739	1832	859	1660	436	2091	499	804	1022	1304	886	234	396	1832	926	460	1276	1361	869	884	581	1912	2478	909	916	878
Minnesota	55455	793	1535	1897	2009	923	1964	1348	1986	1395	1975	1114	1801	999	1481	1173	1981	1406	1222	1298	2002	1318	1326	1387	1458	1405	1404	387	2040	1738	1140	1185	1140
Missouri	65211	453	1419	1713	1816	416	1780	967	1802	1071	1660	664	1689	683	1031	1003	1532	1091	716	792	1817	1055	877	1258	1342	1081	1088	438	1856	2077	970	1015	970
Morehouse / Georgia Tech	30314	918	1222	2219	2293	452	2181	290	2142	469	1970	16	2363	822	355	800	855	1031	289	471	2143	587	328	1060	1145	521	1028	764	2362	2750	676	645	606
Nebraska	68588	436	1628	1465	1560	734	1532	1285	1554	1389	1575	982	1369	642	1350	1266	1850	1050	1034	1110	1570	1373	1195	1479	1551	1399	1047	543	1608	1756	1233	1110	1233
New Mexico	87131	550	2341	758	853	1026	824	1755	820	1874	648	1452	962	753	1794	1925	2294	979	1257	1265	821	1941	1442	2179	2264	1885	977	1360	900	1543	1892	1937	1893
New York Maritime College	10465	1469	336	2769	2891	1106	2836	803	2824	604	2652	893	2672	1603	973	103	1464	1879	1123	1319	2824	460	1216	174	259	599	1877	840	2912	2942	231	288	283
Norwich	5663	1661	245	2949	3050	1323	3016	1098	3038	899	2843	1188	2853	1820	1268	398	1758	2174	1418	1614	3053	755	1510	245	168	894	2171	1030	3092	3132	526	582	577
Noter Dame	46556	862	1030	2063	2176	610	2130	889	2152	930	2044	661	1967	1068	1028	669	669	1454	764	960	2188	813	874	882	954	940	1451	134	2206	2238	635	680	635
North Carolina / Piedmont	27708	1187	843	2489	722	722	2555	330	2529	144	2357	388	2616	1208	500	422	991	1414	675	854	2529	208	711	681	766	155	1411	890	2631	2292	297	266	228
Ohio State	43210	920	888	2213	590	590	2279	710	2275	656	2103	558	2208	1087	880	472	1371	1474	721	917	2275	617	830	727	812	666	1471	403	2355	2505	439	484	439
Oklahoma	73019	24	1819	1317	1412	497	1383	1226	1379	1345	1207	923	1712	196	1236	1403	1737	603	699	707	1380	1412	885	1657	1742	1356	601	838	1459	2100	1370	1403	1364
Oregon State	97331	2013	3310	918	922	2419	987	2970	1024	3073	1191	2667	575	2219	3034	2948	3534	2413	2723	2731	1035	3058	2908	3161	3233	3084	2410	2202	730	340	2915	2959	2915
Pennsylvania State	16802	1260	572	2538	2658	923	2605	761	2627	562	2443	766	2442	1420	931	192	1422	1807	985	1181	2616	418	1089	418	495	557	1804	609	2681	2711	207	263	241
Philadelphia	19104	1387	451	2680	2817	1008	2746	699	2742	500	2570	789	2633	1504	869	17	1360	1780	1025	1221	2742	356	1112	289	374	495	1778	800	2822	2982	127	184	179
Purdue	47907	771	1121	2064	2165	511	2130	820	2126	866	1953	587	1992	967	955	705	1455	1354	691	887	2126	851	800	960	1044	877	1352	169	2206	2271	672	717	672
Rochester	14627	1317	527	2576	2697	979	2643	957	2665	822	2500	948	2480	1476	1126	326	1618	1863	1110	1306	2680	678	1219	421	450	817	1861	647	2719	2749	454	511	500
RPI	12180	1536	309	2795	2915	1199	2862	937	2884	738	2719	1022	2699	1695	1106	222	1597	1996	1241	1437	2900	594	1345	203	232	732	1994	867	2938	2968	365	421	416
San Diego State / San Diego	92110	1364	3155	229	171	1841	46	2429	10	2608	170	2141	704	1325	2352	2739	2852	1437	1873	1822	11	2758	2000	2993	3078	2659	1434	2103	323	1345	2706	2746	2708
Savannah state	31404	1169	1161	2471	2543	704	2433	48	2394	356	2222	269	2614	1074	160	740	650	1245	541	685	2395	507	503	1000	1084	408	1242	1007	2613	3002	616	584	546
South Carolina	29208	1114	1061	2416	2508	649	2398	138	2359	256	2187	235	2559	1039	308	640	799	1238	506	678	2360	406	536	899	984	307	1236	852	2558	2953	515	484	446
Southern and A & M	70813	654	1714	1894	1885	402	1793	782	1754	990	1582	540	2343	491	613	1299	1134	511	279	68	1755	116	261	1552	1637	1042	509	958	2026	2730	1186	1176	1138
Texas	78712	369	2092	1492	1490	665	1392	1254	1353	1432	1181	966	2006	198	1042	1677	1542	235	697	512	1354	1580	689	1930	2015	1484	232	1203	1625	2465	1564	1571	1532
Texas A & M	77841	377	2071	1600	1582	654	1499	1139	1460	1347	1288	897	2066	184	970	1655	1470	274	635	440	1460	1475	616	1908	1994	1398	272	1192	1732	2453	1542	1533	1494
The Citadel	29409	1223	1115	2525	2611	758	2501	71	2463	221	2291	338	2668	1142	259	694	748	1341	609	782	2463	461	601	953	1038	275	1339	960	2667	3062	569	538	500
Tulane	70118	725	1657	1964	1962	410	1863	725	1825	933	1653	483	2414	562	556	1242	1056	582	221	4	1826	1061	204	1496	1580	985	579	965	2096	2801	1129	1119	1081
Utah	84112	1202	2499	659	753	1608	725	2159	748	2282	714	1856	485	1408	2223	2137	2723	1600	1911	1920	763	2247	2097	2350	2422	2272	1597	1414	802	923	2104	2148	2104
Vanderbilt	37203	672	1234	1974	2069	207	2040	537	2038	655	1864	234	2119	703	601	819	1101	1091	335	531	2037	722	444	1072	1157	666	1088	521	2116	2507	706	713	674
Virginia	22904	1214	691	2515	2682	749	2582	522	2578	323	2406	547	2561	1245	691	270	1182	1521	766	961	2579	184	870	529	614	317	1519	835	2658	2937	157	174	136
VMI	24450	1154	761	2455	2614	688	2522	471	2518	350	2346	486	2501	1185	641	345	1132	1461	705	901	2518	249	809	599	684	382	1458	775	2598	2877	232	239	201
VPI	24061	1083	844	2384	2538	617	2451	400	2447	348	2275	415	2454	1114	570	423	1061	1390	634	830	2448	326	738	676	767	357	1388	728	2527	2829	310	[illegible]	[illegible]
Washington	98195	2007	3196	1157	1161	2413	1226	2964	1263	3056	1431	2661	815	2213	3028	2834	3528	2620	2716	2725	1274	2979	2802	3048	3119	3066	2618	2048	970	83	[illegible]	[illegible]	[illegible]
Wisconsin	53705	868	1283	1848	2058	671	2015	1097	2037	1145	2051	862	1852	1074	1229	922	1732	1481	971	1046	2053	1066	1075	1135	1206	1154	1479	138	2091	[illegible]	[illegible]	933	[illegible]

Table 4.2 NROTC Unit / Flight Surgeon Location Distance Matrix

4. The Optimal Pre-commissioning Flight Physical Structure

a. Introduction to GAMS

The General Algebraic Modeling System (GAMS) was used to determine alternative one's optimal solution. This model utilized a GAMS-Excel interface designed by Maliyev and Rutherford at the University of Colorado; this interface allows for the importing and exporting of data to Excel spreadsheets. Professor Rob Dell, from the Naval Postgraduate School's Operations Research Department, and his Summer Quarter 00 OA 4203 Advanced Mathematical Programming Seminar Class were given a brief of the pre-commissioning flight physical attrition problem, the objectives of the restructuring, and all required data (in spreadsheet form). Professor Dell, specifically Major Robert Liebe (a student in the OA 4203 Class), produced the optimal GAMS solution.

b. Structure of the Formulated GAMS Model

Because it would be inefficient to change pre-commissioning flight physical assignment locations from year to year, and all required data was only available for a five-year period from 1995 to 1999, hindsight was required to structure the GAMS model. Implementing the five-year average of the obtainable data allowed the model to better weigh the number of aviation candidates produced from each NROTC unit. This was important considering that GAMS optimal assignments will determine specific yearly screening costs (these yearly breakdowns will reflect changing aviator production and cost data, while holding assignment locations constant). Simply, the hindsight (using future year average data) made the model more feasible and accurate.

c. Restructuring Cost Data Quantified

In restructuring flight physical assignments, variable travel costs were the primary factor taken into consideration. This reflects the fact that, no matter where candidates are taken for their pre-commissioning physicals, these physicals must still be done. In this broad sense, costs such as overhead, blood / lab work, and X-ray film would not be considered variable—justifying their exclusion. If a selected facility ends up doing flight physicals for a significant number of aviation candidates, however, their budget may need to be adjusted accordingly.

There was only one fixed cost considered by the GAMS model. If a facility having a flight surgeon was selected to screen NROTC aviation candidates, a flight surgeon from that command would be flown to NOMI's headquarters for a bi-annual two-day training seminar starting in 1995.

The variable travel costs used to analyze alternative one included: Personnel Support Detachment's (PSD) Temporary Active Duty (TAD) cost per mile driven, lodging and meal per diem rates, and costs associated with airline travel. Historic TAD mileage reimbursable rates were obtained from personnel at the Naval Postgraduate School (these rates can be seen in Tables 4.10 - 14). Per diem rates associated with potential physical assignment locations were determined by speaking with DK3 Salas at the Naval Postgraduate School, as well as using DoD's Per Diem Committee web site [www.dtic.mil/perdiem/]. Table 4.3 is a historical listing of all per diem costs relevant to alternative one (L denotes the lodging rate, M signifies the meals rate). Lastly, the yearly production of NROTC aviators (midshipmen and officer candidates) from each NROTC unit was required to ensure the restructuring model's accuracy. This information, presented in table 4.4, was obtained from CNET's Bonnie Weatherholtz.

		AFB Tinker	BMC / NAS Brunswick	BMC / NAS China Lakes	BMC / NAS Point Mugu	BMC Millington	MAG 39 / NH Camp Pendleton	MCAS / NH Beaufort	MCAS Miramar	MCAS New River	MCAS Yuma	NAS Atlanta	NAS Fallon	NAS Fort Worth	NAS / NH Jacksonville	NAS JRB Willow Grove	NAS Kingsville	NAS Meridian	NAS / NACC New Orleans	NAS North Island / NMC San D.	NAS Oceana	NAS Pensacola	NACC Newport	NACC Portsmouth, NH	NH / MCAS Cherry Point	NH / NAS Corpus Christi	NH Great Lakes	NH / NAS Lemoore	NH Oak Harbor / NAS Whidbey	NMC Annapolis	NMC / NAS Pax River	NMC Quantico
FY 1995 Per Diem	**L**	56	56	60	102	57	81	46	81	40	60	81	40	71	50	83	44	40	66	81	61	57	62	53	42	64	104	62	49	76	51	50
	M	26	30	34	38	34	40	34	40	26	28	40	26	36	32	34	28	26	36	40	36	32	40	36	26	32	40	30	32	40	26	30
FY 1996 Per Diem	**L**	56	65	60	97	64	81	74	81	47	60	85	40	84	58	80	43	40	70	81	68	60	77	53	53	64	119	68	68	86	57	50
	M	30	34	38	38	30	34	38	34	26	26	34	26	38	30	34	26	26	34	34	34	30	38	34	26	34	38	34	34	38	30	30
FY 1997 Per Diem	**L**	66	65	64	97	69	84	83	84	50	64	96	50	84	65	80	50	50	70	84	77	62	81	56	53	64	119	68	59	86	59	53
	M	30	38	38	42	30	38	34	38	30	30	38	30	42	30	38	30	30	42	38	38	34	42	34	30	30	42	34	34	38	34	30
FY 1998 Per Diem	**L**	65	63	66	109	79	93	128	93	50	64	97	50	94	73	84	50	50	88	93	64	59	81	57	84	62	120	70	54	96	59	50
	M	30	38	38	42	30	38	34	38	30	30	38	30	42	30	38	30	30	42	38	38	34	42	34	30	30	42	34	34	38	34	30
FY 1999 Per Diem	**L**	59	58	58	99	79	96	110	96	50	52	90	50	94	63	84	50	50	88	96	54	52	77	59	71	56	108	53	84	90	59	62
	M	38	38	34	38	38	46	42	46	30	34	38	30	38	34	42	30	30	42	46	38	34	42	42	34	32	42	38	34	42	34	34
Average (95-99)	**L**	60	61	62	101	70	87	88	87	47	60	90	46	85	62	82	47	46	76	87	65	58	76	56	61	62	114	64	63	87	57	53
	M	31	36	36	40	32	39	36	39	28	30	38	28	39	31	37	29	28	39	39	37	33	41	36	29	32	41	34	34	39	32	31

Table 4.3 Historical Per Diem Costs Associated with Flight Suregon Locatons

University	FY 95	FY 96	FY 97	FY 98	FY 99	AVG
Arizona	17	14	10	5	6	10.4
Auburn	11	13	5	13	8	10.0
Boston-MIT	21	9	8	7	6	10.2
Cal Berkeley	4	3	3	0	2	2.4
Carnegie Mellon	8	2	2	7	3	4.4
Chicago Area	11	9	3	3	6	6.4
Colorado	19	9	13	10	6	11.4
Cornell	4	3	9	2	8	5.2
Florida	9	7	10	11	10	9.4
Florida A & M	2	2	6	7	3	4.0
George Washington	13	13	12	5	10	10.6
Hampton Roads	16	6	12	17	22	14.6
Holy Cross	6	3	2	1	6	3.6
Houston	2	1	4	5	4	3.2
Idaho	8	7	6	3	4	5.6
Illinois	17	8	7	3	9	8.8
Iowa state	8	5	3	3	6	5.0
Jacksonville	26	19	8	19	17	17.8
Kansas	10	6	2	4	1	4.6
UCLA / USC	17	12	6	5	3	8.6
Maine Maritime Academy	7	3	6	5	3	4.8
Marquette	6	4	4	1	3	3.6
Miami	9	6	7	6	3	6.2
Michigan	4	4	4	4	3	3.8
Mid South Region of Memphis	8	5	7	15	3	7.6
Minnesota	6	1	0	2	6	3.0
Missouri	3	1	0	3	2	1.8
Morehouse / Georgia Tech	13	6	6	8	7	8.0
Nebraska	7	3	2	4	4	4.0
New Mexico	0	0	2	3	1	1.2
New York Maritime College	5	2	4	3	4	3.6
Norwich	1	1	1	2	4	1.8
Noter Dame	21	13	2	10	7	10.6
North Carolina / Piedmont	9	6	10	10	9	8.8
Ohio State	18	9	5	9	8	9.8
Oklahoma	5	9	1	3	3	4.2
Oregon State	13	7	6	0	6	6.4
Pennsylvania State	15	11	7	6	8	9.4
Philadelphia	15	9	9	9	7	9.8
Purdue	5	5	7	8	5	6.0
Rochester	4	3	2	1	1	2.2
RPI	12	7	7	9	10	9.0
San Diego State / San Diego	14	12	8	8	12	10.8
Savannah state	3	2	4	1	0	2.0
South Carolina	9	5	3	2	7	5.2
Southern and A & M	0	0	0	3	3	1.2
Texas	4	4	6	5	4	4.6
Texas A & M	19	7	6	9	16	11.4
The Citadel	5	4	6	8	11	6.8
Tulane	22	17	7	6	7	11.8
Utah	1	1	0	4	8	2.8
Vanderbilt	10	7	7	2	3	5.8
Virginia	13	6	8	4	5	7.2
VMI	5	3	4	3	5	4.0
VPI	9	8	8	7	7	7.8
Washington	11	3	3	8	5	6.0
Wisconsin	3	3	3	1	0	2.0
	543	348	303	322	340	371.2

Table 4.4 Yearly NROTC Unit Aviator Production Numbers

d. Modeling Assumptions and Costing Techniques

The following modeling assumptions were used in solving alternative one:

1. The mileage an aviation candidate could travel to a flight surgeon location was limited to 1,200 (this to prevent coast-to-coast flight physicals).
2. CNET NROTC aviator production numbers, although somewhat overstated, were used in the GAMS model.
3. CNET and NOMI data were combined / compared despite the fact that they refer to fiscal and calendar years, respectively; this was deemed acceptable because of the overlapping nature of a school year.
4. The pre-commissioning flight physical training seminar for flight surgeons from selected sites would increase the conformity of the physical—lowering the attrition rate. This knowledge would then be passed on in turnovers.
5. Capacity issues associated with pre-commissioning flight physicals were not considered; if a problem, this could be solved through proper scheduling.
6. Flight surgeon locations were selected because of associated travel costs; locations performing greater numbers of flight physicals were not considered more preferable.

For GAMS to utilize Table 4.2's distance matrix required translating these distances into costs; to alleviate costing confusion, a description of the costing methodology is provided in the following paragraphs.

Individuals traveling for a flight physical and returning to their duty stations are considered to be on TAD travel; this travel is subject to the following rules and regulations. On actual days of travel (i.e. moving from point A to B), if individuals are gone more than twelve hours, they're entitled to 75% of the designated meal per diem rate. If an overnight stay is required, regardless if it's a travel day or not, 100% of the lodging per diem amount is authorized. Further, on non-travel TAD days, 100% of the lodging and meal per diem rates are paid. There is one exception to the above rules; if government lodging and meals are available, individuals will only be reimbursed the amount the government charged—not the maximum allowed. Lastly,

miles traveled are reimbursed at the TAD government rate per mile, and if air travel required, the government (usually at a negotiated discount) purchases the tickets.

Considering PSD's TAD rules, the following formulas and assumptions were used to translate flight physical distances to costs:

1. If distance traveled < 200 miles, assigned cost = (distance*TAD reimbursement amount per mile*2) + (.75*meals per diem rate).
2. If distance traveled > 200 and < 420 miles, assigned cost = (distance*TAD reimbursement amount per mile*2) + (1.5*meals per diem rate) + (lodging per diem rate).
3. If distance traveled > 420, assigned cost = (price of airline ticket) + (1.5*meals per diem rate) + (lodging per diem rate).
4. If a health care facility containing a flight surgeon were selected, a flight surgeon from the command would attend a bi-annual two-day training seminar at NOMI's headquarters. Assigned cost = (price of airline ticket) + (3.5*meals per diem rate) + (3*lodging per diem rate).
5. The full TAD reimbursable mileage rate was used to represent an upper-bound cost limit. Many NROTC units use Navy vans to transport their aviation candidates to flight physicals (specifics were undeterminable); in these circumstances, the full TAD mileage rate wouldn't apply to every individual.
6. It was impossible to quantify historical costs of airline tickets; therefore, a ticket cost of $400, across all years, was implemented into the model.

Table 4.5 portrays the results of using the above formulas to translate Table 4.2's distances into costs. These values were determined using average aviator production numbers and travel costs from 1995 to 1999. The information contained within this table is what GAMS used to determine optimal assignment solutions. Notice that costs associated with NAS Key West are not included in the table; this because there wasn't an NROTC unit less than 420 miles away from the air station.

e. The Optimal Pre-Commissioning Flight Physical Structure

Using average data, the optimal assignment pattern GAMS recommended is shown in Table 4.6. This solution reduced the number of facilities performing pre-commissioning flight physicals from approximately 150 to seventeen. The average

1995-1999 AVG

			AFB Tinker	BMC / NAS Brunswick	BMC / NAS China Lakes	BMC / NAS Point Mugu	BMC Millington	MAG 39 / NH Camp Pendleton	MCAS / NH Beaufort	MCAS Miramar	MCAS New River	MCAS Yuma	NAS Atlanta	NAS Fallon	NAS Fort Worth	NAS / NH Jacksonville	NAS JRB Willow Grove	NAS Kingsville	NAS Meridian	NAS / NACC New Orleans	NAS North Island / NMC San D.	NAS Oceana	NAS Pensacola	NACC Newport	NACC Portsmouth, NH	NH / MCAS Cherry Point	NH / NAS Corpus Christi	NH Great Lakes	NH / NAS Lemoore	NH Oak Harbor / NAS Whidbey	NMC Annapolis	NMC / NAS Pax River	NMC Quantico
	Per Diem	L	$60.4	$61.4	$61.6	$100.8	$69.6	$87.0	$88.2	$87.0	$47.4	$60.0	$69.8	$46.0	$85.4	$61.8	$82.2	$47.4	$46.0	$76.4	$87.0	$64.8	$58.0	$75.6	$55.6	$60.6	$62.0	$114.0	$64.2	$62.8	$86.8	$57.0	$53.0
		M	$30.8	$35.6	$36.4	$39.6	$32.4	$39.2	$36.4	$39.2	$28.4	$29.6	$37.6	$28.4	$39.2	$31.2	$37.2	$28.8	$28.4	$39.2	$39.2	$36.8	$33.0	$40.8	$36.0	$29.2	$31.6	$40.8	$34.0	$33.6	$39.2	$31.6	$30.8
University	Aviators	Zip	73145	4011	93555	93042	38054	92055	29902	92145	28545	85369	30060	89496	76127	32212	19090	78363	39309	70143	92135	23460	32508	2840	3804	28533	78419	60088	93246	98278	21402	20670	22134
Arizona	10.4	85721	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$402.2	$490.0	$253.8	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$402.6	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Auburn	10.0	36849	$506.6	$514.8	$516.2	$560.2	$364.1	$545.8	$379.5	$545.8	$490.0	$504.4	$104.5	$488.6	$544.2	$315.2	$538.0	$490.6	$219.0	$360.6	$545.8	$520.0	$244.2	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Boston-MIT	10.2	2215	$506.6	$114.3	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$324.5	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$77.7	$66.7	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Cal Berkeley	2.4	94720	$506.6	$514.8	$358.7	$405.1	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$257.7	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$241.3	$513.2	$545.6	$504.4	$499.2
Carnegie Mellon	4.4	15213	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$325.9	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$312.9	$299.5	$266.5
Chicago Area	6.4	60208	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$45.5	$515.2	$513.2	$545.6	$504.4	$499.2
Colorado	11.4	80309	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Cornell	5.2	14853	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$271.1	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$360.4	$351.4	$504.4	$509.4	$575.2	$515.2	$513.2	$358.7	$352.6	$341.1
Florida	9.4	32611	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$297.4	$545.8	$490.0	$504.4	$363.0	$488.6	$544.2	$72.8	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$324.0	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Florida A & M	4.0	32314	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$355.3	$545.8	$490.0	$504.4	$328.9	$488.6	$544.2	$132.3	$538.0	$490.6	$339.9	$375.6	$545.8	$520.0	$234.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
George Washington	10.6	20052	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$310.6	$504.4	$546.2	$488.6	$544.2	$508.6	$125.4	$490.6	$488.6	$535.2	$545.8	$251.1	$507.5	$395.6	$509.6	$321.7	$509.4	$575.2	$515.2	$513.2	$51.1	$73.2	$43.7
Hampton Roads	14.6	23529	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$218.0	$504.4	$546.2	$488.6	$544.2	$508.6	$358.6	$490.6	$488.6	$535.2	$545.8	$43.2	$507.5	$536.8	$509.6	$137.0	$509.4	$575.2	$515.2	$513.2	$288.7	$147.4	$123.0
Holy Cross	3.6	1610	$506.6	$130.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$301.7	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$75.5	$83.2	$504.4	$509.4	$575.2	$515.2	$513.2	$389.2	$504.4	$499.2
Houston	3.2	77005	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$320.2	$508.6	$538.0	$234.8	$488.6	$354.8	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$252.0	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Idaho	5.6	83844	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$346.3	$545.6	$504.4	$499.2
Illinois	6.8	61820	$506.6	$514.8	$516.2	$560.2	$378.8	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$140.9	$515.2	$513.2	$545.6	$504.4	$499.2
Iowa state	5.0	50011	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$409.8	$515.2	$513.2	$545.6	$504.4	$499.2
Jacksonville	17.8	32211	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$141.4	$545.8	$490.0	$504.4	$375.9	$488.6	$544.2	$39.3	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$336.9	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Kansas	4.6	66045	$304.5	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
UCLA / USC	8.6	90089	$506.6	$514.8	$125.3	$63.2	$518.2	$81.7	$542.8	$104.9	$490.0	$283.8	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$111.6	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$241.2	$513.2	$545.6	$504.4	$499.2
Maine Maritime Academy	4.6	4421	$506.6	$114.5	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$348.0	$240.8	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Marquette	3.6	53201	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$65.4	$515.2	$513.2	$545.6	$504.4	$499.2
Miami	6.2	45056	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$379.5	$515.2	$513.2	$545.6	$504.4	$499.2
Michigan	3.8	48109	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$356.8	$515.2	$513.2	$545.6	$504.4	$499.2
Mid South Region of Memphis	7.6	38152	$506.6	$514.8	$516.2	$560.2	$35.6	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$234.1	$381.4	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Minnesota	3.0	55455	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$415.9	$515.2	$513.2	$545.6	$504.4	$499.2
Missouri	1.8	65211	$506.6	$514.8	$516.2	$560.2	$377.0	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Morehouse / Georgia Tech	8.0	30314	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$323.4	$545.8	$490.0	$504.4	$39.1	$488.6	$544.2	$329.3	$538.0	$490.6	$268.2	$535.2	$545.8	$520.0	$311.8	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Nebraska	4.0	68588	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
New Mexico	1.2	87131	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
New York Maritime College	3.6	10465	$506.6	$323.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$91.8	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$138.8	$270.6	$504.4	$509.4	$575.2	$515.2	$513.2	$289.3	$283.3	$274.9
Norwich	1.8	5663	$506.6	$267.1	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$385.3	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$289.2	$131.4	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Noter Dame	10.6	46556	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$114.1	$515.2	$513.2	$545.6	$504.4	$499.2
North Carolina / Piedmont	8.8	27708	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$348.2	$545.8	$111.1	$504.4	$387.8	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$249.6	$507.5	$536.8	$509.6	$118.2	$509.4	$575.2	$515.2	$513.2	$330.6	$269.9	$241.0
Ohio State	9.8	43210	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$426.1	$515.2	$513.2	$545.6	$504.4	$499.2
Oklahoma	4.2	73019	$37.7	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$151.1	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Oregon State	6.4	97331	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$324.5	$545.6	$504.4	$499.2
Pennsylvania State	9.4	16802	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$147.1	$490.6	$488.6	$535.2	$545.8	$380.2	$507.5	$396.7	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$274.2	$268.0	$248.9
Philadelphia	9.6	19104	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$38.4	$490.6	$488.6	$535.2	$545.8	$341.6	$507.5	$316.6	$342.2	$504.4	$509.4	$575.2	$515.2	$513.2	$108.6	$138.0	$134.2
Purdue	6.0	47907	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$136.0	$515.2	$513.2	$545.6	$504.4	$499.2
Rochester	2.2	14627	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$340.5	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
RPI	9.0	12180	$506.6	$307.2	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$278.2	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$263.1	$254.2	$504.4	$509.4	$575.2	$515.2	$513.2	$372.4	$504.4	$358.0
San Diego State / San Diego	10.8	92110	$506.6	$514.8	$258.4	$136.1	$518.2	$58.2	$542.8	$35.8	$490.0	$128.1	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$36.4	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$318.2	$513.2	$545.6	$504.4	$499.2
Savannah state	2.0	31404	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$57.3	$545.8	$311.6	$504.4	$313.8	$488.6	$544.2	$122.7	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$358.2	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
South Carolina	5.2	29208	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$113.2	$545.8	$249.0	$504.4	$292.1	$488.6	$544.2	$300.1	$538.0	$490.6	$488.6	$535.2	$545.8	$372.7	$507.5	$536.8	$509.6	$295.6	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Southern and A & M	1.2	70813	$506.6	$514.8	$516.2	$560.2	$368.0	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$261.6	$84.3	$545.8	$101.2	$270.0	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Texas	4.6	78712	$348.4	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$151.1	$508.6	$538.0	$236.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$253.8	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Texas A & M	11.4	77841	$341.0	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$143.8	$508.6	$538.0	$261.0	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$278.3	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
The Citadel	6.8	29409	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$71.7	$545.8	$227.5	$504.4	$356.3	$488.6	$544.2	$268.8	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$275.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Tulane	11.8	70118	$506.6	$514.8	$516.2	$560.2	$372.9	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$226.3	$32.1	$545.8	$520.0	$234.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Utah	2.8	84112	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Vanderbilt	5.8	37203	$506.6	$514.8	$516.2	$560.2	$246.8	$545.8	$542.8	$545.8	$490.0	$504.4	$291.4	$488.6	$544.2	$508.6	$538.0	$490.6	$297.0	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$513.2	$545.6	$504.4	$499.2
Virginia	7.2	22904	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$290.6	$504.4	$546.2	$488.6	$544.2	$508.6	$305.7	$490.6	$488.6	$535.2	$545.8	$141.9	$507.5	$536.8	$509.6	$301.7	$509.4	$575.2	$515.2	$513.2	$126.9	$131.9	$107.5
VMI	4.0	24450	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$307.8	$504.4	$546.2	$488.6	$544.2	$508.6	$352.7	$490.6	$488.6	$535.2	$545.8	$274.6	$507.5	$536.8	$509.6	$342.1	$509.4	$575.2	$515.2	$513.2	$290.0	$253.0	$224.0
VPI	7.8	24061	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$391.8	$545.8	$305.3	$504.4	$404.6	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$322.6	$507.5	$536.8	$509.6	$326.1	$509.4	$575.2	$515.2	$513.2	$338.2	$301.2	$272.2
Washington	6.0	98195	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$575.2	$515.2	$77.0	$545.6	$504.4	$499.2
Wisconsin	2.0	53706	$506.6	$514.8	$516.2	$560.2	$518.2	$545.8	$542.8	$545.8	$490.0	$504.4	$546.2	$488.6	$544.2	$508.6	$538.0	$490.6	$488.6	$535.2	$545.8	$520.0	$507.5	$536.8	$509.6	$504.4	$509.4	$116.6	$515.2	$513.2	$545.6	$504.4	$499.2

TAD Reimbursement Per Mile	$	0.311
Fixed Cost of Selecting Location	$	689.5
Price of an Airline Ticket	$	400.0

Table 4.5 Traveling Cost Values Imputed into GAMS

University	Opened?	AFB Tinker	BMC / NAS Brunswick	BMC / NAS China Lakes	BMC / NAS Point Mugu	BMC Millington	MAG 39 / NH Camp Pendleton	MCAS / NH Beaufort	MCAS Miramar	MCAS New River	MCAS Yuma	NAS Atlanta	NAS Fallon	NAS Fort Worth	NAS / NH Jacksonville	NAS JRB Willow Grove	NAS Kingsville	NAS Meridian	NAS / NACC New Orleans	NAS North Island / NMC San D.	NAS Oceana	NAS Pensacola	NACC Newport	NACC Portsmouth, NH	NH / NMCAS Cherry Point	NH / NAS Corpus Christi	NH Great Lakes	NH / NAS Lemoore	NH Oak Harbor / NAS Whidbey	NMC Annapolis	NMC / NAS Pax River	NMC Quantico
	Zip	73148	4011	93555	93042	38054	92055	29902	92145	28545	85369	30060	89496	76127	32212	19090	78363	39309	70143	92136	23460	32508	2840	3804	28533	78419	60088	93248	98278	21402	20670	22134
Arizona	85721										1																					
Auburn	36849											1																				
Boston-MIT	2215												1											1								
Cal Berkeley	94720																															
Carnegie Mellon	15213												1														1					1
Chicago Area	60208																															
Colorado	80309												1			1																
Cornell	14853														1																	
Florida	32611														1																	
Florida A & M	32314																															
George Washington	20052																															1
Hampton Roads	23529																				1											
Holy Cross	1610																							1								
Houston	77005													1																		
Idaho	83844																															
Illinois	61820																												1			
Iowa state	50011																										1					
Jacksonville	32211																										1					
Kansas	66045	1													1																	
UCLA / USC	90089																															
Maine Maritime Academy	4421								1																							
Marquette	53201																							1								
Miami	48058																										1					
Michigan	48109																										1					
Mid South Region of Memphis	38152					1																					1					
Minnesota	55455																															
Missouri	65211					1																					1					
Morehouse / Georgia Tech	30314											1																				
Nebraska	68588	1																														
New Mexico	87131												1																			
New York Maritime College	10465															1																
Norwich	5663																							1								
Noter Dame	46556																										1					
North Carolina / Piedmont	27708									1																						
Ohio State	43210																										1					
Oklahoma	73019	1																									1					
Oregon State	97331																															
Pennsylvania State	16802															1													1			
Philadelphia	19104															1																
Purdue	47907																															
Rochester	14627															1											1					
RPI	12180																															
San Diego State / San Diego	92110								1															1								
Savannah state	31404							1																								
South Carolina	29208							1																								
Southern and A & M	70813																															
Texas	78712																		1													
Texas A & M	77841													1																		
The Citadel	29409							1						1																		
Tulane	70118																															
Utah	84112																		1													
Vanderbilt	37203					1							1																			
Virginia	22904																															
VMI	24450																															1
VPI	24061																															1
Washington	98195																															1
Wisconsin	53706																												1			

Table 4.6 GAMS NROTC Pre-commissioning Flight Physical Assignments

minimum total travel cost, obeying all assumptions, was $73,689 (remember, this does not reflect the cost of performing the physicals). Table 4.7 demonstrates the relationship between the number of locations used, and total overall cost. Note, because of the 1,200-mile traveling restriction, the minimal number of facilities able to accommodate every NROTC unit is three.

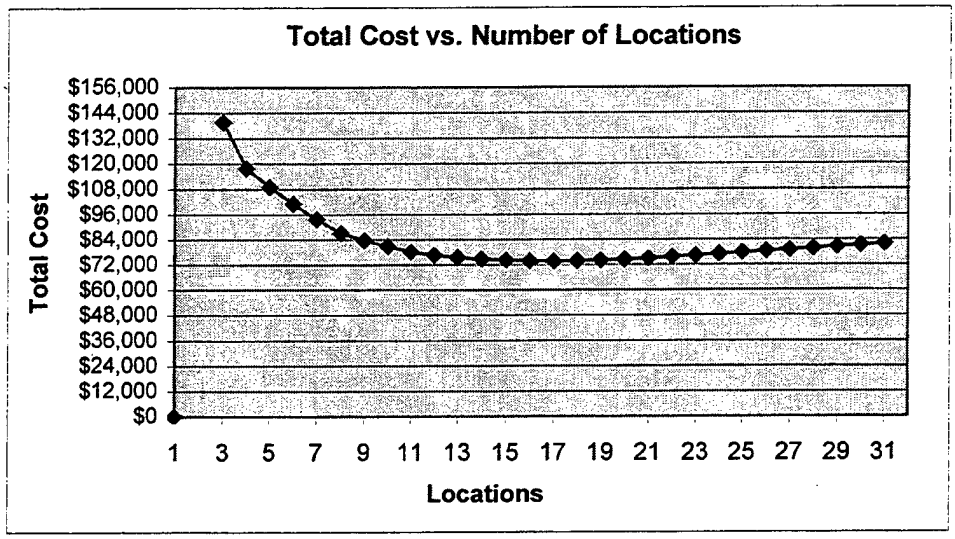


Table 4.7 Total Cost vs. the Number of Flight Surgeon Locations Used

With optimal assignments determined and cost minimized, it's possible to calculate specific yearly expenses, and compare these average costs to what GAMS generated; Table 4.8 presents these costs. As one can see, the average is close, however

	1995	1996	1997	1998	1999	Average
Total Cost	$ 100,532.60	$ 54,737.30	$ 64,304.30	$ 54,364.86	$ 69,259.89	$ 68,639.79

Table 4.8 Actual Restructuring Costs by Year

lower than the GAMS prediction. The 6.8% difference is attributable to rounding and the fact that flight surgeons underwent bi-annual training sessions. This makes sense, not every year has a fixed cost associated with it; therefore, the GAMS cost estimate should be higher than the average of actual yearly costs (specific yearly costs can be seen in

Tables 4.10 through 4.14). Programming the model to send flight surgeons to yearly training seminars resulted in an average cost of $73,335.19. This amount is only .479% off the predicted GAMS cost—ensuring the model's accuracy.

To equally compare alternatives, the time-value of money must be reflected in their cost totals. Using a rate of 7%, as directed by OMB Circular A-94, the present value (1999) of alternative one's yearly expenses is $399,885.56; Table 4.9 shows this detailed breakdown.

	1995	1996	1997	1998	1999	Total
FV	$131,777.73	$67,055.55	$73,621.99	$58,170.40	$69,259.89	$399,885.56

Table 4.9 Alternative One's Time-Valued Costs

E. ALTERNATIVE TWO: OPENING THE ACES PROGRAM TO NROTC AVIATION CANDIDATES

1. Description

Alternative two incorporates all NROTC aviation candidates into the ACES program. This would result in candidates taking an extremely accurate NOMI pre-commissioning flight physical, as well as having the opportunity to experience many of flight school's demands. This experience, in essence, is a screening; it will highlight problematic areas for each individual (if there are any). To minimize the amount of time between the ACES screening and flight school, candidates would be sent in their senior (or fifth) year of college.

FY 95			AFB Thilair	BMC / NAS Brunswick	BMC / NAS China Lakes	BMC / NAS Point Mugu	BMC Millington	MAG 39 / NH Camp Pendleton	MCAS / NH Beaufort	MCAS Miramar	MCAS New River	MCAS Yuma	NAS Atlanta	NAS Fallon	NAS Fort Worth	NAS / NH Jacksonville	NAS JRB Willow Grove	NAS Kingsville	NAS Meridian	NAS / NACC New Orleans	NAS North Island / NMC San D.	NAS Oceana	NAS Pensacola	NACC Newport	NACC Portsmouth, NH	NH / MCAS Cherry Point	NH / NAS Corpus Christi	NH Great Lakes	NH / NAS Lemoore	NH Oak Harbor / NAS Whidbey	NMC Annapolis	NMC / NAS Pax River	NMC Quantico	
	Per Diem	L	$ 56.0	$ 56.0	$ 60.0	$102.0	$ 57.0	$ 81.0	$ 48.0	$ 81.0	$ 40.0	$ 60.0	$ 81.0	$ 40.0	$ 71.0	$ 50.0	$ 83.0	$ 44.0	$ 40.0	$ 66.0	$ 81.0	$ 61.0	$ 57.0	$ 62.0	$ 53.0	$ 42.0	$ 64.0	$104.0	$ 62.0	$ 49.0	$ 78.0	$ 51.0	$ 50.0	
		M	$ 26.0	$ 30.0	$ 34.0	$ 38.0	$ 34.0	$ 40.0	$ 34.0	$ 40.0	$ 26.0	$ 28.0	$ 40.0	$ 26.0	$ 36.0	$ 32.0	$ 34.0	$ 28.0	$ 26.0	$ 36.0	$ 40.0	$ 36.0	$ 32.0	$ 40.0	$ 36.0	$ 26.0	$ 32.0	$ 40.0	$ 30.0	$ 32.0	$ 40.0	$ 26.0	$ 30.0	
University	Aviators	Zip	73145	4011	93555	93042	38054	92055	29902	92145	28545	85369	30060	89496	76127	32212	19090	78363	39309	70143	92135	23460	32508	2840	3804	28533	78419	60088	93246	98278	21402	20670	22134	Totals
Arizona	17	85721	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$388.3	$479.0	$246.1	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$388.7	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 4,184.0
Auburn	11	36849	$ 495.0	$501.0	$511.0	$559.0	$345.2	$541.0	$325.4	$541.0	$479.0	$502.0	$103.6	$479.0	$525.0	$297.3	$534.0	$486.0	$204.8	$337.4	$541.0	$515.0	$236.9	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 1,139.2
Boston-MIT	21	2215	$ 495.0	$107.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$313.9	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$ 75.5	$ 95.3	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 1,372.1
Cal Berkeley	4	94720	$ 495.0	$501.0	$344.9	$395.2	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$242.1	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$228.6	$497.0	$536.0	$490.0	$495.0	$ 968.3
Carnegie Mellon	8	15213	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$315.3	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$297.4	$278.2	$256.4	$ 2,051.2
Chicago Area	11	60208	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$ 44.3	$507.0	$497.0	$536.0	$490.0	$495.0	$ 487.7
Colorado	18	80309	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 9,101.0
Cornell	4	14853	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$262.4	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$337.7	$340.3	$481.0	$512.0	$564.0	$507.0	$497.0	$341.6	$329.4	$328.3	$ 1,049.6
Florida	9	32611	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$246.1	$541.0	$479.0	$502.0	$350.1	$479.0	$525.0	$ 71.7	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$313.9	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 645.3
Florida A & M	2	32314	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$302.0	$541.0	$479.0	$502.0	$317.3	$479.0	$525.0	$129.0	$534.0	$486.0	$321.4	$351.9	$541.0	$515.0	$227.5	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 258.0
George Washington	13	20052	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$291.8	$502.0	$541.0	$479.0	$525.0	$498.0	$119.5	$486.0	$479.0	$520.0	$541.0	$241.4	$505.0	$371.6	$507.0	$290.6	$512.0	$564.0	$507.0	$497.0	$ 50.9	$ 67.3	$ 42.4	$ 550.7
Hampton Roads	16	23529	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$202.5	$502.0	$541.0	$479.0	$525.0	$498.0	$346.8	$486.0	$479.0	$520.0	$541.0	$ 42.1	$505.0	$522.0	$507.0	$130.6	$512.0	$564.0	$507.0	$497.0	$274.1	$138.8	$118.9	$ 673.0
Holy Cross	6	1610	$ 495.0	$122.9	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$291.9	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$ 73.3	$ 81.2	$481.0	$512.0	$564.0	$507.0	$497.0	$371.0	$490.0	$495.0	$ 487.4
Houston	2	77005	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$294.6	$498.0	$534.0	$225.1	$479.0	$331.8	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$249.6	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 589.6
Idaho	8	83844	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$321.9	$536.0	$490.0	$495.0	$ 2,575.0
Illinois	17	61820	$ 495.0	$501.0	$511.0	$559.0	$359.4	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$136.4	$507.0	$497.0	$536.0	$490.0	$495.0	$ 2,318.5
Iowa state	8	50011	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$390.3	$507.0	$497.0	$536.0	$490.0	$495.0	$ 3,122.6
Jacksonville	26	32211	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$135.8	$541.0	$479.0	$502.0	$362.6	$479.0	$525.0	$ 39.5	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$326.3	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 1,021.8
Kansas	10	66045	$ 265.9	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 2,859.2
UCLA / USC	17	90089	$ 495.0	$501.0	$120.0	$ 60.8	$508.0	$ 80.5	$497.0	$102.8	$479.0	$275.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$109.3	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$228.5	$497.0	$536.0	$490.0	$495.0	$ 1,748.3
Maine Maritime Academy	7	4421	$ 495.0	$107.2	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$325.8	$239.6	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 1,635.2
Marquette	6	53201	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$ 63.6	$507.0	$497.0	$536.0	$490.0	$495.0	$ 381.2
Miami	9	43056	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$361.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 3,249.4
Michigan	4	48109	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$339.1	$507.0	$497.0	$536.0	$490.0	$495.0	$ 1,356.6
Mid South Region of Memphis	8	38152	$ 495.0	$501.0	$511.0	$559.0	$ 36.4	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$219.4	$357.5	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 290.9
Minnesota	6	55455	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 2,377.2
Missouri	3	65211	$ 495.0	$501.0	$511.0	$559.0	$357.6	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 1,072.8
Morehouse / Georgia Tech	13	30314	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$271.2	$541.0	$479.0	$502.0	$ 40.5	$479.0	$525.0	$310.9	$534.0	$486.0	$252.3	$520.0	$541.0	$515.0	$302.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 526.5
Nebraska	7	68588	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 3,465.0
New Mexico	0	87131	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ -
New York Maritime College	5	10465	$ 495.0	$302.6	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$ 87.1	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$134.4	$262.3	$481.0	$512.0	$564.0	$507.0	$497.0	$274.7	$262.6	$264.5	$ 435.6
Norwich	1	5663	$ 495.0	$247.9	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$372.6	$486.0	$479.0	$520.0	$541.0	$515.0	$506.0	$269.0	$127.7	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 127.7
Noter Dame	21	46556	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$110.6	$507.0	$497.0	$536.0	$490.0	$495.0	$ 2,322.2
North Carolina / Piedmont	9	27708	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$295.1	$541.0	$106.1	$502.0	$374.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$240.0	$505.0	$522.0	$507.0	$112.4	$512.0	$564.0	$507.0	$497.0	$314.4	$249.7	$231.7	$ 955.3
Ohio State	18	43210	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$406.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 7,307.8
Oklahoma	5	73019	$ 33.8	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$144.4	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 168.0
Oregon State	13	97331	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$300.6	$536.0	$490.0	$495.0	$ 3,910.7
Pennsylvania State	15	16802	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$140.5	$486.0	$479.0	$520.0	$541.0	$366.0	$505.0	$372.7	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$260.0	$247.9	$239.4	$ 2,107.8
Philadelphia	15	19104	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$ 36.6	$486.0	$479.0	$520.0	$541.0	$328.7	$505.0	$295.4	$331.3	$481.0	$512.0	$564.0	$507.0	$497.0	$106.4	$129.7	$129.7	$ 534.6
Purdue	5	47907	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$131.6	$507.0	$497.0	$536.0	$490.0	$495.0	$ 658.2
Rochester	4	14627	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$329.3	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 1,317.2
RPI	12	12180	$ 495.0	$286.8	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$267.3	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$243.9	$246.4	$481.0	$512.0	$564.0	$507.0	$497.0	$354.8	$490.0	$344.6	$ 2,957.3
San Diego State / San Diego	14	92110	$ 495.0	$501.0	$248.2	$131.2	$508.0	$ 57.8	$497.0	$ 38.2	$479.0	$123.2	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$ 38.7	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$300.9	$497.0	$536.0	$490.0	$495.0	$ 508.5
Savannah state	3	31404	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$ 54.6	$541.0	$292.7	$502.0	$302.6	$479.0	$525.0	$119.8	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$325.9	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 163.4
South Carolina	9	29208	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$106.4	$541.0	$232.4	$502.0	$281.7	$479.0	$525.0	$282.7	$534.0	$486.0	$479.0	$520.0	$541.0	$358.7	$505.0	$522.0	$507.0	$265.4	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 975.2
Southern and A & M	0	70813	$ 495.0	$501.0	$511.0	$559.0	$349.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$245.9	$ 90.0	$541.0	$ 98.0	$261.7	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ -
Texas	4	78712	$ 328.2	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$144.4	$498.0	$534.0	$226.8	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$251.3	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 577.4
Texas A & M	19	77841	$ 321.1	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$137.3	$498.0	$534.0	$250.4	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$274.8	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 2,609.5
The Citadel	5	29409	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$ 68.3	$541.0	$211.6	$502.0	$343.7	$479.0	$525.0	$252.6	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$245.9	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 341.7
Tulane	22	70118	$ 495.0	$501.0	$511.0	$559.0	$353.7	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$211.8	$ 29.6	$541.0	$515.0	$227.5	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 650.8
Utah	1	84112	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 479.0
Vanderbilt	10	37203	$ 495.0	$501.0	$511.0	$559.0	$232.1	$541.0	$497.0	$541.0	$479.0	$502.0	$281.1	$479.0	$525.0	$498.0	$534.0	$486.0	$280.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$497.0	$536.0	$490.0	$495.0	$ 2,320.8
Virginia	13	22904	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$272.5	$502.0	$541.0	$479.0	$525.0	$498.0	$295.8	$486.0	$479.0	$520.0	$541.0	$137.2	$505.0	$522.0	$507.0	$271.3	$512.0	$564.0	$507.0	$497.0	$124.0	$123.8	$103.9	$ 1,351.0
VMI	5	24450	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$289.1	$502.0	$541.0	$479.0	$525.0	$498.0	$341.1	$486.0	$479.0	$520.0	$541.0	$264.2	$505.0	$522.0	$507.0	$310.3	$512.0	$564.0	$507.0	$497.0	$275.3	$233.3	$215.4	$ 1,077.1
VPI	9	24061	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$337.2	$541.0	$286.7	$502.0	$390.2	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$310.7	$505.0	$522.0	$507.0	$294.9	$512.0	$564.0	$507.0	$497.0	$321.8	$279.8	$261.9	$ 2,357.3
Washington	11	98195	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$507.0	$ 74.0	$538.0	$490.0	$495.0	$ 813.8
Wisconsin	3	53705	$ 495.0	$501.0	$511.0	$559.0	$508.0	$541.0	$497.0	$541.0	$479.0	$502.0	$541.0	$479.0	$525.0	$498.0	$534.0	$486.0	$479.0	$520.0	$541.0	$515.0	$505.0	$522.0	$507.0	$481.0	$512.0	$564.0	$112.9	$507.0	$497.0	$536.0	$490.0	$495.0	$ 338.8

TAD Reimbursement Per Mile	$	0.3	
Fixed Cost of Selecting Location	$	663.0	
Price of an Airline Ticket	$	400.0	
			Travel Costs $ 88,921.60
			Training Fixed Costs (17 Facilities) $ 11,811.00
			Total FY 95 Cost $100,832.60

Table 4.10 FY 95 Pre-commissioning Flight Physical Travel Costs

FY 96

University	Aviators	Zip	Per Diem	AFB Tinker	BMC / NAS Brunswick	BMC / NAS China Lakes	BMC / NAS Point Mugu	BMC Millington	MAG 39 / NH Camp Pendleton	MCAS / NH Beaufort	MCAS Miramar	MCAS New River	MCAS Yuma	NAS Atlanta	NAS Fallon	NAS Fort Worth	NAS / NH Jacksonville	NAS JRB Willow Grove	NAS Kingsville	NAS Meridian	NAS / NACC New Orleans	NAS North Island / NMC San D.	NAS Oceana	NAS Pensacola	NACC Newport	NACC Portsmouth, NH	NH / MCAS Cherry Point	NH / NAS Corpus Christi	NH Great Lakes	NH / NAS Lemoore	NH Oak Harbor / NAS Whidbey	NMC Annapolis	NMC / NAS Pax River	NMC Quantico	Totals
			L	$ 56.0	$ 65.0	$ 60.0	$ 97.0	$ 64.0	$ 81.0	$ 74.0	$ 81.0	$ 47.0	$ 60.0	$ 85.0	$ 40.0	$ 84.0	$ 58.0	$ 80.0	$ 43.0	$ 40.0	$ 70.0	$ 81.0	$ 68.0	$ 60.0	$ 77.0	$ 53.0	$ 53.0	$ 64.0	$119.0	$ 68.0	$ 68.0	$ 86.0	$ 57.0	$ 50.0	
			M	$ 30.0	$ 34.0	$ 38.0	$ 38.0	$ 30.0	$ 34.0	$ 38.0	$ 34.0	$ 26.0	$ 26.0	$ 34.0	$ 26.0	$ 38.0	$ 30.0	$ 34.0	$ 26.0	$ 26.0	$ 34.0	$ 34.0	$ 34.0	$ 30.0	$ 38.0	$ 34.0	$ 26.0	$ 34.0	$ 38.0	$ 34.0	$ 34.0	$ 38.0	$ 30.0	$ 30.0	
Arizona	14	85721	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$387.6	$486.0	$247.8	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$388.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 3,470.8
Auburn	13	36849	$ 501.0	$516.0	$517.0	$554.0	$354.1	$532.0	$367.0	$532.0	$486.0	$499.0	$101.5	$479.0	$541.0	$308.9	$531.0	$482.0	$209.0	$345.7	$532.0	$518.0	$241.3	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 1,319.7
Boston-MIT	9	2215	$ 501.0	$112.9	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$316.9	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$ 75.5	$ 65.1	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 586.1
Cal Berkeley	3	94720	$ 501.0	$516.0	$358.7	$398.1	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$247.6	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$244.7	$519.0	$543.0	$502.0	$495.0	$ 742.5
Carnegie Mellon	2	15213	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$318.3	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$309.8	$296.4	$261.8	$ 523.6
Chicago Area	9	60208	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$ 43.3	$519.0	$519.0	$543.0	$502.0	$495.0	$ 389.9
Colorado	9	80309	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 4,311.0
Cornell	3	14853	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$283.7	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$356.9	$345.1	$492.0	$515.0	$576.0	$519.0	$519.0	$355.4	$349.4	$338.1	$ 791.0
Florida	7	32611	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$285.1	$532.0	$486.0	$499.0	$352.1	$479.0	$541.0	$ 71.8	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$320.8	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 502.5
Florida A & M	2	32314	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$342.9	$532.0	$486.0	$499.0	$318.2	$479.0	$541.0	$131.0	$531.0	$482.0	$329.5	$360.6	$532.0	$519.0	$231.6	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 262.0
George Washington	13	20052	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$305.9	$499.0	$536.0	$479.0	$541.0	$503.0	$122.7	$482.0	$479.0	$521.0	$532.0	$249.6	$505.0	$391.9	$504.0	$308.6	$515.0	$576.0	$519.0	$519.0	$ 50.1	$ 71.9	$ 43.0	$ 558.3
Hampton Roads	6	23529	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$213.6	$499.0	$536.0	$478.0	$541.0	$503.0	$350.9	$482.0	$479.0	$521.0	$532.0	$ 41.1	$505.0	$534.0	$504.0	$134.3	$515.0	$576.0	$519.0	$519.0	$285.7	$145.8	$122.1	$ 248.4
Holy Cross	3	1610	$ 501.0	$120.3	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$284.2	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$ 73.3	$ 81.5	$492.0	$515.0	$576.0	$519.0	$519.0	$385.8	$502.0	$495.0	$ 244.6
Houston	1	77005	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$316.5	$503.0	$531.0	$225.7	$478.0	$339.9	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$257.2	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 318.5
Idaho	7	83844	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$351.4	$543.0	$502.0	$495.0	$ 2,459.6
Illinois	8	61820	$ 501.0	$516.0	$517.0	$554.0	$368.8	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 1,107.4
Iowa state	5	50011	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$138.4	$519.0	$519.0	$543.0	$502.0	$495.0	$ 2,049.3
Jacksonville	19	32211	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$142.3	$532.0	$486.0	$499.0	$365.0	$479.0	$541.0	$ 38.3	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$333.7	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 727.9
Kansas	6	66045	$ 268.3	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 1,789.7
UCLA / USC	12	90089	$ 501.0	$516.0	$126.2	$ 61.9	$509.0	$ 77.6	$531.0	$100.6	$486.0	$277.8	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$107.5	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$244.8	$519.0	$543.0	$502.0	$495.0	$ 1,209.2
Maine Maritime Academy	3	4421	$ 501.0	$113.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$344.6	$234.6	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 704.5
Marquette	4	53201	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$478.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$ 63.2	$519.0	$519.0	$543.0	$502.0	$495.0	$ 252.6
Miami	6	45056	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$478.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$370.6	$519.0	$519.0	$543.0	$502.0	$495.0	$ 2,277.6
Michigan	4	48109	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$357.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 1,427.9
Mid South Region of Memphis	5	38152	$ 501.0	$516.0	$517.0	$554.0	$ 33.7	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 168.6
Minnesota	1	55455	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$415.9	$519.0	$519.0	$543.0	$502.0	$495.0	$ 415.9
Missouri	1	65211	$ 501.0	$516.0	$517.0	$554.0	$368.9	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 368.9
Morehouse / Georgia Tech	6	30314	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$311.0	$532.0	$486.0	$499.0	$ 36.4	$479.0	$541.0	$323.0	$531.0	$482.0	$258.1	$521.0	$532.0	$519.0	$308.6	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 218.1
Nebraska	3	68588	$ 601.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 1,503.0
New Mexico	0	87131	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ -
New York Maritime College	2	10465	$ 501.0	$324.3	$517.0	$554.0	$508.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$ 89.2	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$136.4	$264.5	$492.0	$515.0	$576.0	$519.0	$519.0	$286.3	$280.3	$270.2	$ 178.3
Norwich	1	5063	$ 501.0	$267.8	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$377.5	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$285.9	$129.5	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 129.5
Notre Dame	13	46556	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$111.8	$519.0	$519.0	$543.0	$502.0	$495.0	$ 1,453.0
North Carolina / Piedmont	8	27708	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$335.7	$532.0	$100.0	$499.0	$376.8	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$248.2	$505.0	$534.0	$504.0	$115.5	$515.0	$576.0	$519.0	$519.0	$327.4	$267.0	$236.3	$ 654.2
Ohio State	9	43210	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$426.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 3,834.4
Oklahoma	9	73019	$ 37.1	$516.0	$517.0	$554.0	$508.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 333.6
Oregon State	7	97331	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$329.6	$543.0	$502.0	$495.0	$ 2,307.3
Pennsylvania State	11	16802	$ 601.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$144.4	$482.0	$479.0	$521.0	$532.0	$378.3	$505.0	$393.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$271.2	$265.1	$244.2	$ 1,587.9
Philadelphia	9	19104	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$ 36.0	$482.0	$479.0	$521.0	$532.0	$339.8	$505.0	$313.2	$335.8	$492.0	$515.0	$576.0	$519.0	$519.0	$107.4	$136.4	$133.2	$ 323.8
Purdue	5	47907	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$133.5	$519.0	$519.0	$543.0	$502.0	$495.0	$ 667.6
Rochester	3	14627	$ 501.0	$516.0	$517.0	$554.0	$508.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$332.8	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 998.4
RPI	7	12180	$ 501.0	$307.8	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$268.8	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$259.9	$248.1	$492.0	$515.0	$576.0	$519.0	$519.0	$369.1	$502.0	$352.9	$ 1,736.6
San Diego State / San Diego	12	92110	$ 501.0	$516.0	$258.7	$134.6	$509.0	$ 54.2	$531.0	$ 31.9	$486.0	$125.1	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$ 32.4	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$319.4	$519.0	$543.0	$502.0	$495.0	$ 382.6
Savannah state	2	31404	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$ 58.4	$532.0	$306.8	$499.0	$303.0	$479.0	$541.0	$121.5	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$345.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 118.9
South Carolina	5	29208	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$114.1	$532.0	$244.5	$499.0	$281.4	$479.0	$541.0	$293.8	$531.0	$482.0	$479.0	$521.0	$532.0	$370.8	$505.0	$534.0	$504.0	$282.6	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 570.6
Southern and A & M	0	70813	$ 501.0	$516.0	$517.0	$554.0	$358.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$251.4	$ 80.2	$532.0	$ 98.8	$266.9	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ -
Texas	4	78712	$ 342.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$148.8	$503.0	$531.0	$227.5	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$258.9	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 599.1
Texas A & M	7	77841	$ 334.7	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$142.5	$503.0	$531.0	$251.8	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$283.3	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 897.6
The Citadel	4	29409	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$ 72.8	$532.0	$223.0	$499.0	$345.4	$479.0	$541.0	$262.7	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$262.4	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 291.1
Tulane	17	70118	$ 501.0	$516.0	$517.0	$554.0	$362.9	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$216.3	$ 29.2	$532.0	$519.0	$231.5	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$518.0	$543.0	$502.0	$495.0	$ 478.8
Utah	1	84112	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 479.0
Vanderbilt	7	37203	$ 501.0	$516.0	$517.0	$554.0	$237.2	$532.0	$531.0	$532.0	$486.0	$499.0	$280.8	$479.0	$541.0	$503.0	$531.0	$482.0	$286.7	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 1,660.5
Virginia	6	22904	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$286.0	$499.0	$536.0	$479.0	$541.0	$503.0	$298.2	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$519.0	$543.0	$502.0	$495.0	$ 639.8
VMI	3	24450	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$303.1	$499.0	$536.0	$479.0	$541.0	$503.0	$345.0	$482.0	$479.0	$521.0	$532.0	$273.1	$505.0	$534.0	$504.0	$329.0	$515.0	$576.0	$519.0	$519.0	$287.0	$250.1	$219.4	$ 658.3
VPI	8	24061	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$379.2	$532.0	$300.8	$499.0	$393.5	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$321.2	$505.0	$534.0	$504.0	$313.0	$515.0	$576.0	$519.0	$519.0	$335.0	$298.2	$267.8	$ 2,139.9
Washington	3	98195	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$576.0	$519.0	$ 77.1	$543.0	$502.0	$495.0	$ 231.4
Wisconsin	3	53705	$ 501.0	$516.0	$517.0	$554.0	$509.0	$532.0	$531.0	$532.0	$486.0	$499.0	$536.0	$479.0	$541.0	$503.0	$531.0	$482.0	$479.0	$521.0	$532.0	$519.0	$505.0	$534.0	$504.0	$492.0	$515.0	$114.2	$519.0	$519.0	$543.0	$502.0	$495.0	$ 342.6
																																	Total FY 96 Costs	$54,737.30

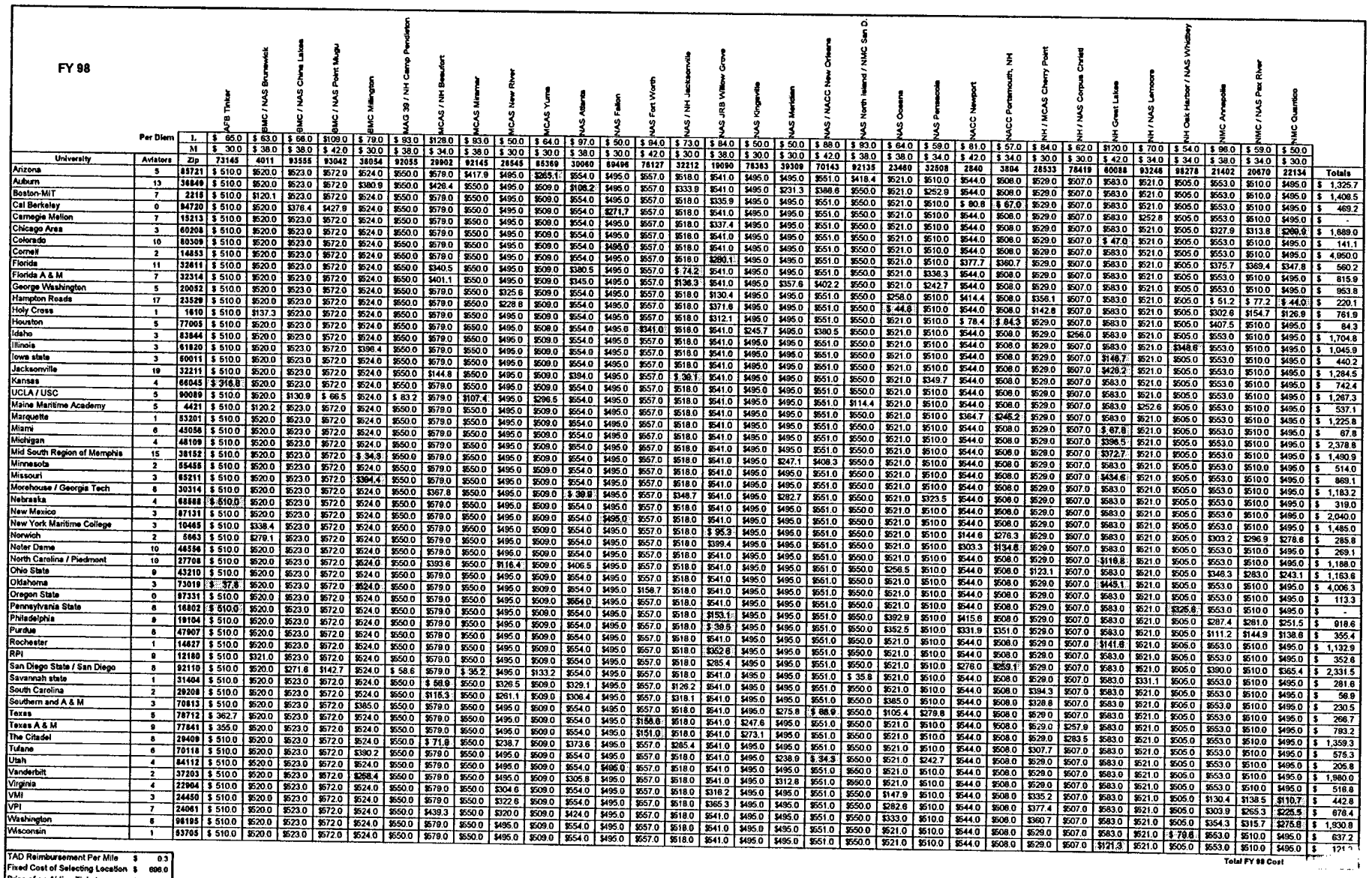
TAD Reimbursement Per Mile	$ 0.3
Fixed Cost of Selecting Location	$ 685.0
Price of an Airline Ticket	$ 400.0

Table 4.11 FY 96 Pre-commissioning Flight Physical Travel Costs

FY 97			AFB Tinker	BMC / NAS Brunswick	BMC / NAS China Lakes	BMC / NAS Point Mugu	BMC Millington	NAG 39 / NH Camp Pendleton	MCAS / NH Beaufort	MCAS Miramar	MCAS New River	MCAS Yuma	NAS Atlanta	NAS Fallon	NAS Fort Worth	NAS / NH Jacksonville	NAS JRB Willow Grove	NAS Kingsville	NAS Meridian	NAS / NACC New Orleans	NAS North Island / NMC San D.	NAS Oceana	NAS Pensacola	NACC Newport	NACC Portsmouth, NH	NH / MCAS Cherry Point	NH / NAS Corpus Christi	NH Great Lakes	NH / NAS Lemoore	NH Oak Harbor / NAS Whidbey	NMC Annapolis	NMC / NAS Pax River	NMC Quantico	
	Per Diem	L	$ 66.0	$ 65.0	$ 64.0	$ 97.0	$ 69.0	$ 84.0	$ 83.0	$ 84.0	$ 60.0	$ 64.0	$ 96.0	$ 50.0	$ 84.0	$ 65.0	$ 80.0	$ 50.0	$ 50.0	$ 70.0	$ 84.0	$ 77.0	$ 62.0	$ 81.0	$ 56.0	$ 53.0	$ 64.0	$ 119.0	$ 68.0	$ 59.0	$ 86.0	$ 59.0	$ 53.0	
		M	$ 30.0	$ 38.0	$ 38.0	$ 42.0	$ 30.0	$ 38.0	$ 34.0	$ 38.0	$ 30.0	$ 30.0	$ 38.0	$ 30.0	$ 42.0	$ 30.0	$ 38.0	$ 30.0	$ 30.0	$ 42.0	$ 38.0	$ 38.0	$ 34.0	$ 42.0	$ 34.0	$ 30.0	$ 30.0	$ 42.0	$ 34.0	$ 34.0	$ 38.0	$ 34.0	$ 30.0	
University	Aviators	Zip	73145	4011	93555	93042	38054	92055	29902	92145	28545	85369	30060	89496	76127	32212	19090	78363	39309	70143	92135	23460	32508	2840	3804	28533	78419	60088	93246	98278	21402	20670	22134	Totals
Arizona	10	85721	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$396.6	$495.0	$257.9	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$397.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 2,579.2
Auburn	5	36849	$ 511.0	$522.0	$521.0	$560.0	$359.1	$541.0	$370.0	$541.0	$495.0	$509.0	$104.5	$495.0	$547.0	$315.9	$537.0	$495.0	$225.0	$357.7	$541.0	$534.0	$249.3	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 522.6
Boston-MIT	8	2215	$ 511.0	$115.9	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$322.9	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$ 78.5	$ 69.1	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 520.9
Cal Berkeley	3	94720	$ 511.0	$522.0	$382.7	$404.1	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$265.5	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$244.7	$510.0	$543.0	$510.0	$498.0	$ 780.5
Carnegie Mellon	2	15213	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$324.3	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$309.8	$304.4	$264.6	$ 529.6
Chicago Area	3	60208	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$ 46.3	$519.0	$510.0	$543.0	$510.0	$498.0	$ 139.0
Colorado	13	80309	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 6,435.0
Cornell	9	14853	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$260.7	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$368.9	$348.1	$498.0	$509.0	$582.0	$519.0	$510.0	$355.4	$357.4	$339.1	$ 2,427.1
Florida	10	32611	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$288.1	$541.0	$495.0	$509.0	$369.1	$495.0	$547.0	$ 71.8	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$328.8	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 717.9
Florida A & M	6	32314	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$345.9	$541.0	$495.0	$509.0	$335.2	$495.0	$547.0	$131.0	$537.0	$495.0	$345.5	$372.6	$541.0	$534.0	$239.8	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 786.0
George Washington	12	20052	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$314.9	$509.0	$553.0	$495.0	$547.0	$510.0	$125.7	$495.0	$495.0	$533.0	$541.0	$264.6	$513.0	$401.9	$507.0	$314.6	$509.0	$582.0	$519.0	$510.0	$ 50.1	$ 74.9	$ 43.0	$ 516.3
Hampton Roads	12	23529	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$222.6	$509.0	$553.0	$495.0	$547.0	$510.0	$356.9	$495.0	$495.0	$533.0	$541.0	$ 44.1	$513.0	$544.0	$507.0	$137.3	$509.0	$582.0	$519.0	$510.0	$285.7	$148.8	$122.1	$ 528.7
Holy Cross	2	1610	$ 511.0	$132.3	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$300.2	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$ 76.3	$ 81.6	$498.0	$509.0	$582.0	$519.0	$510.0	$385.8	$510.0	$498.0	$ 163.1
Houston	4	77005	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$322.5	$510.0	$537.0	$238.7	$495.0	$351.9	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$251.2	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 1,289.8
Idaho	8	83844	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$342.4	$543.0	$510.0	$498.0	$ 2,054.3
Illinois	7	61820	$ 511.0	$522.0	$521.0	$560.0	$373.8	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$141.4	$519.0	$510.0	$543.0	$510.0	$498.0	$ 990.0
Iowa state	3	50011	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$415.9	$519.0	$510.0	$543.0	$510.0	$498.0	$ 1,247.6
Jacksonville	8	32211	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$139.3	$541.0	$495.0	$509.0	$382.0	$495.0	$547.0	$ 36.3	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$341.7	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 306.5
Kansas	2	66045	$ 308.3	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 616.6
UCLA / USC	6	90089	$ 511.0	$522.0	$128.2	$ 84.9	$514.0	$ 80.6	$534.0	$103.6	$495.0	$287.8	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$110.5	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$244.6	$510.0	$543.0	$510.0	$498.0	$ 622.6
Maine Maritime Academy	6	4421	$ 511.0	$118.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$354.6	$237.8	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 1,426.9
Marquette	4	53201	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$ 86.2	$519.0	$510.0	$543.0	$510.0	$498.0	$ 264.6
Miami	7	45056	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$386.6	$519.0	$510.0	$543.0	$510.0	$498.0	$ 2,699.3
Michigan	4	48109	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$383.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 1,451.9
Mid South Region of Memphis	7	38152	$ 511.0	$522.0	$521.0	$560.0	$ 33.7	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$240.1	$378.5	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 236.1
Minnesota	0	55455	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$421.8	$519.0	$510.0	$543.0	$510.0	$498.0	$ -
Missouri	0	65211	$ 511.0	$522.0	$521.0	$560.0	$371.9	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ -
Morehouse / Georgia Tech	6	30314	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$314.0	$541.0	$495.0	$509.0	$ 39.4	$495.0	$547.0	$330.0	$537.0	$495.0	$274.1	$533.0	$541.0	$534.0	$316.8	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 236.1
Nebraska	2	68588	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 1,022.0
New Mexico	2	87131	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 990.0
New York Maritime College	4	10465	$ 511.0	$330.3	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$ 92.2	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$139.4	$267.5	$498.0	$509.0	$582.0	$519.0	$510.0	$288.3	$288.3	$273.2	$ 368.7
Norwich	1	6463	$ 511.0	$273.8	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$383.5	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$295.9	$129.5	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 129.5
Noter Dame	2	46556	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$114.8	$519.0	$510.0	$543.0	$510.0	$498.0	$ 229.5
North Carolina / Piedmont	10	27708	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$338.7	$541.0	$112.0	$509.0	$393.8	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$263.2	$513.0	$544.0	$507.0	$118.5	$509.0	$582.0	$519.0	$510.0	$327.4	$275.0	$239.3	$ 1,120.3
Ohio State	5	43210	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$432.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 2,160.2
Oklahoma	1	73019	$ 37.1	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$152.8	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 37.1
Oregon State	8	97331	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 1,923.7
Pennsylvania State	7	16802	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$147.4	$495.0	$495.0	$533.0	$541.0	$393.3	$513.0	$403.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$271.2	$273.1	$247.2	$ 1,031.5
Philadelphia	9	19104	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$ 39.0	$495.0	$495.0	$533.0	$541.0	$354.8	$513.0	$323.2	$338.8	$498.0	$509.0	$582.0	$519.0	$510.0	$107.4	$139.4	$133.2	$ 350.8
Purdue	7	47907	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$136.5	$519.0	$510.0	$543.0	$510.0	$498.0	$ 955.7
Rochester	2	14627	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$336.8	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 677.6
RPI	7	12180	$ 511.0	$313.8	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$274.6	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$269.9	$251.1	$498.0	$509.0	$582.0	$519.0	$510.0	$369.1	$510.0	$355.9	$ 1,757.8
San Diego State / San Diego	8	92110	$ 511.0	$522.0	$262.7	$137.6	$514.0	$ 57.2	$534.0	$ 34.9	$495.0	$128.1	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$ 35.4	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.4	$510.0	$543.0	$510.0	$498.0	$ 279.1
Savannah state	4	31404	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$ 55.4	$541.0	$315.8	$509.0	$320.0	$495.0	$547.0	$121.5	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$351.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 221.8
South Carolina	3	29208	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$111.1	$541.0	$253.5	$509.0	$298.4	$495.0	$547.0	$300.8	$537.0	$495.0	$495.0	$533.0	$541.0	$385.8	$513.0	$544.0	$507.0	$288.6	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 333.4
Southern and A & M	0	70813	$ 511.0	$522.0	$521.0	$560.0	$363.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$267.4	$ 86.2	$541.0	$101.8	$274.9	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ -
Texas	6	78712	$ 352.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$182.6	$510.0	$537.0	$240.5	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 916.6
Texas A & M	8	77841	$ 344.7	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$145.5	$510.0	$537.0	$264.9	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 873.1
The Citadel	6	29409	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$ 69.8	$541.0	$232.0	$509.0	$362.4	$495.0	$547.0	$269.7	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$268.4	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 418.6
Tulane	7	70118	$ 511.0	$522.0	$521.0	$560.0	$367.9	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$232.3	$ 34.2	$541.0	$534.0	$239.5	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 239.2
Utah	0	84112	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ -
Vanderbilt	7	37203	$ 511.0	$522.0	$521.0	$560.0	$242.2	$541.0	$534.0	$541.0	$495.0	$509.0	$297.8	$495.0	$547.0	$510.0	$537.0	$495.0	$302.7	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 1,695.5
Virginia	8	22904	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$295.0	$509.0	$553.0	$495.0	$547.0	$510.0	$304.2	$495.0	$495.0	$533.0	$541.0	$142.4	$513.0	$544.0	$507.0	$294.7	$509.0	$582.0	$519.0	$510.0	$125.7	$133.3	$108.6	$ 853.1
VMI	4	24450	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$312.1	$509.0	$553.0	$495.0	$547.0	$510.0	$351.0	$495.0	$495.0	$533.0	$541.0	$288.1	$513.0	$544.0	$507.0	$335.0	$509.0	$582.0	$519.0	$510.0	$287.0	$258.1	$222.4	$ 889.7
VPI	8	24061	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$382.2	$541.0	$309.6	$509.0	$410.5	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$336.2	$513.0	$544.0	$507.0	$319.0	$509.0	$582.0	$519.0	$510.0	$335.0	$306.2	$270.5	$ 2,163.9
Washington	3	98195	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$ 77.1	$543.0	$510.0	$498.0	$ 231.4
Wisconsin	3	53705	$ 511.0	$522.0	$521.0	$560.0	$514.0	$541.0	$534.0	$541.0	$495.0	$509.0	$553.0	$495.0	$547.0	$510.0	$537.0	$495.0	$495.0	$533.0	$541.0	$534.0	$513.0	$544.0	$507.0	$498.0	$509.0	$582.0	$519.0	$510.0	$543.0	$510.0	$498.0	$ 351.6

TAD Reimbursement Per Mile	$	0.3	
Fixed Cost of Selecting Location	$	705.0	
Price of an Airline Ticket	$	400.0	
			Travel Costs $52,319.30
			Training Fixed Costs (17 Facilities) $11,985.00
			Total FY 97 Cost $64,304.30

Table 4.12 FY 97 Pre-commissioning Flight Physical Travel Costs



FY 98			AFB Tinker	BMC / NAS Brunswick	BMC / NAS China Lakes	BMC / NAS Point Mugu	BMC Millington	NAAG 39 / NH Camp Pendleton	MCAS / NH Beaufort	MCAS Miramar	MCAS New River	MCAS Yuma	NAS Atlanta	NAS Fallon	NAS Fort Worth	NAS / NH Jacksonville	NAS JRB Willow Grove	NAS Kingsville	NAS Meridian	NAS / NACC New Orleans	NAS North Island / NMC San D.	NAS Oceana	NAS Pensacola	NACC Newport	NACC Portsmouth, NH	NH / MCAS Cherry Point	NH / NAS Corpus Christi	NH Great Lakes	NH / NAS Lemoore	NH Oak Harbor / NAS Whidbey	NMC Annapolis	NMC / NAS Pax River	NMC Quantico	
	Per Diem	L	$ 65.0	$ 63.0	$ 68.0	$109.0	$ 79.0	$ 93.0	$128.0	$ 93.0	$ 50.0	$ 64.0	$ 97.0	$ 50.0	$ 94.0	$ 73.0	$ 84.0	$ 50.0	$ 50.0	$ 88.0	$ 93.0	$ 64.0	$ 59.0	$ 81.0	$ 57.0	$ 84.0	$ 62.0	$120.0	$ 70.0	$ 54.0	$ 98.0	$ 59.0	$ 50.0	
		M	$ 30.0	$ 38.0	$ 38.0	$ 42.0	$ 30.0	$ 38.0	$ 34.0	$ 38.0	$ 30.0	$ 30.0	$ 38.0	$ 30.0	$ 42.0	$ 30.0	$ 38.0	$ 30.0	$ 30.0	$ 42.0	$ 38.0	$ 38.0	$ 34.0	$ 42.0	$ 34.0	$ 30.0	$ 30.0	$ 42.0	$ 34.0	$ 34.0	$ 38.0	$ 34.0	$ 30.0	
University	Aviators	Zip	73145	4011	93555	93042	38054	92055	29902	92145	28545	85369	30060	89496	76127	32212	19090	78363	39309	70143	92135	23460	32508	2840	3804	28533	78419	60088	93248	98278	21402	20670	22134	Totals
Arizona	5	85721	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$578.0	$417.9	$495.0	$265.1	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$418.4	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,325.7
Auburn	13	36849	$ 510.0	$520.0	$523.0	$572.0	$380.9	$550.0	$426.4	$550.0	$495.0	$509.0	$106.2	$495.0	$557.0	$333.9	$541.0	$495.0	$231.3	$386.6	$550.0	$521.0	$262.9	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,406.5
Boston-MIT	7	2218	$ 510.0	$120.1	$523.0	$572.0	$524.0	$550.0	$578.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$ 80.8	$ 67.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 469.2
Cal Berkeley	0	94720	$ 510.0	$520.0	$376.4	$427.9	$524.0	$550.0	$578.0	$550.0	$495.0	$509.0	$554.0	$271.7	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$252.8	$505.0	$553.0	$510.0	$495.0	$ -
Carnegie Mellon	7	15213	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$578.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$337.4	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ -
Chicago Area	3	60208	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$578.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$327.9	$313.8	$200.9	$ 1,689.0
Colorado	10	80309	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$578.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$ 47.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 141.1
Cornell	2	14853	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$578.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 4,950.0
Florida	11	32611	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$340.5	$550.0	$495.0	$509.0	$380.5	$495.0	$557.0	$518.0	$280.1	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$377.7	$360.7	$529.0	$507.0	$583.0	$521.0	$505.0	$375.7	$369.4	$347.8	$ 560.2
Florida A & M	7	32314	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$401.1	$550.0	$495.0	$509.0	$345.0	$495.0	$557.0	$ 74.2	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$336.3	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 815.9
George Washington	5	20052	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$325.6	$509.0	$554.0	$495.0	$557.0	$518.0	$130.4	$495.0	$495.0	$551.0	$550.0	$258.0	$510.0	$414.4	$508.0	$358.1	$507.0	$583.0	$521.0	$505.0	$ 61.2	$ 77.2	$ 44.0	$ 220.1
Hampton Roads	17	23529	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$228.8	$509.0	$554.0	$495.0	$557.0	$518.0	$371.6	$495.0	$495.0	$551.0	$550.0	$ 44.8	$510.0	$544.0	$508.0	$142.8	$507.0	$583.0	$521.0	$505.0	$302.6	$154.7	$126.9	$ 761.9
Holy Cross	1	1610	$ 510.0	$137.3	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$312.1	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$ 78.4	$ 84.3	$529.0	$507.0	$583.0	$521.0	$505.0	$407.5	$510.0	$495.0	$ 84.3
Houston	5	77005	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$341.0	$518.0	$541.0	$245.7	$495.0	$380.5	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$302.6	$154.7	$126.9	$ 761.9
Idaho	3	83844	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,704.8
Illinois	3	61820	$ 510.0	$520.0	$523.0	$572.0	$396.4	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$348.6	$553.0	$510.0	$495.0	$ 1,045.9
Iowa state	3	50011	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$146.7	$521.0	$505.0	$553.0	$510.0	$495.0	$ 440.2
Jacksonville	19	32211	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$144.8	$550.0	$495.0	$509.0	$394.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$426.2	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,284.5
Kansas	4	66045	$ 316.8	$520.0	$523.0	$572.0	$524.0	$550.0	$578.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$ 38.1	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$349.7	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 742.4
UCLA / USC	5	90089	$ 510.0	$520.0	$130.9	$ 66.5	$524.0	$ 83.2	$579.0	$107.4	$495.0	$296.5	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,267.3
Maine Maritime Academy	5	4421	$ 510.0	$120.2	$523.0	$572.0	$524.0	$550.0	$578.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$114.4	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$252.6	$505.0	$553.0	$510.0	$495.0	$ 537.1
Marquette	1	53201	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$364.7	$246.2	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,225.8
Miami	6	45056	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$ 67.8	$521.0	$505.0	$553.0	$510.0	$495.0	$ 67.8
Michigan	4	48109	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$396.5	$521.0	$505.0	$553.0	$510.0	$495.0	$ 319.0
Mid South Region of Memphis	15	38152	$ 510.0	$520.0	$523.0	$572.0	$ 34.9	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$372.7	$521.0	$505.0	$553.0	$510.0	$495.0	$ 2,378.8
Minnesota	2	55455	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$247.1	$408.3	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,490.9
Missouri	3	65211	$ 510.0	$520.0	$523.0	$572.0	$394.4	$550.0	$578.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$434.6	$521.0	$505.0	$553.0	$510.0	$495.0	$ 514.0
Morehouse / Georgia Tech	6	30314	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$367.8	$550.0	$495.0	$509.0	$ 39.8	$495.0	$557.0	$348.7	$541.0	$495.0	$282.7	$551.0	$550.0	$521.0	$323.5	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 869.1
Nebraska	4	68588	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,183.2
New Mexico	3	87131	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 319.0
New York Maritime College	3	10465	$ 510.0	$338.4	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$ 95.3	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$144.6	$278.3	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,485.0
Norwich	2	5663	$ 510.0	$279.1	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$399.4	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$303.3	$134.8	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 269.1
Noter Dame	10	46556	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$496.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,188.0
North Carolina / Piedmont	10	27708	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$393.6	$550.0	$116.4	$509.0	$406.5	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$119.8	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,188.0
Ohio State	9	43210	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$258.5	$510.0	$544.0	$508.0	$123.1	$507.0	$583.0	$521.0	$505.0	$346.3	$283.0	$243.1	$ 1,163.6
Oklahoma	3	73019	$ 37.8	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$449.1	$521.0	$505.0	$553.0	$510.0	$495.0	$ 4,006.3
Oregon State	0	97331	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 113.3
Pennsylvania State	8	16802	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$153.1	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$326.8	$553.0	$510.0	$495.0	$ -
Philadelphia	9	19104	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$ 39.6	$495.0	$495.0	$551.0	$550.0	$392.9	$510.0	$415.6	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$287.4	$281.0	$251.5	$ 918.6
Purdue	8	47907	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$352.5	$510.0	$331.9	$351.0	$529.0	$507.0	$583.0	$521.0	$505.0	$111.2	$144.9	$138.6	$ 355.4
Rochester	1	14627	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$141.8	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,132.9
RPI	9	12180	$ 510.0	$321.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$352.8	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 352.8
San Diego State / San Diego	8	92110	$ 510.0	$520.0	$271.8	$142.7	$524.0	$ 58.6	$579.0	$ 35.2	$495.0	$133.2	$554.0	$495.0	$557.0	$518.0	$285.4	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$278.0	$359.1	$529.0	$507.0	$583.0	$521.0	$505.0	$390.0	$510.0	$365.4	$ 2,331.5
Savannah state	1	31404	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$ 58.9	$550.0	$326.5	$509.0	$329.1	$495.0	$557.0	$126.2	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$331.1	$505.0	$553.0	$510.0	$495.0	$ 281.6
South Carolina	2	29208	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$116.3	$550.0	$261.1	$509.0	$308.4	$495.0	$557.0	$318.1	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$394.3	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 58.9
Southern and A & M	3	70813	$ 510.0	$520.0	$523.0	$572.0	$385.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$385.0	$510.0	$544.0	$508.0	$328.8	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 230.5
Texas	5	78712	$ 362.7	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$275.8	$ 68.9	$550.0	$105.4	$278.8	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 266.7
Texas A & M	9	77841	$ 355.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$496.0	$509.0	$554.0	$495.0	$151.0	$518.0	$541.0	$273.1	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$257.9	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 783.2
The Citadel	8	29409	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$ 71.6	$550.0	$238.7	$509.0	$373.6	$495.0	$557.0	$285.4	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$283.5	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,359.3
Tulane	6	70118	$ 510.0	$520.0	$523.0	$572.0	$390.2	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$307.7	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 576.3
Utah	4	84112	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$238.9	$ 34.9	$550.0	$521.0	$242.7	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 205.8
Vanderbilt	2	37203	$ 510.0	$520.0	$523.0	$572.0	$258.4	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 1,980.0
Virginia	4	22904	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$304.6	$509.0	$554.0	$495.0	$557.0	$518.0	$318.2	$495.0	$495.0	$551.0	$550.0	$147.9	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$505.0	$553.0	$510.0	$495.0	$ 516.8
VMI	3	24450	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$322.6	$509.0	$554.0	$495.0	$557.0	$518.0	$365.3	$495.0	$495.0	$551.0	$550.0	$282.6	$510.0	$544.0	$508.0	$377.4	$507.0	$583.0	$521.0	$505.0	$303.9	$265.3	$225.5	$ 678.4
VPI	7	24061	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$439.3	$550.0	$320.0	$509.0	$424.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$333.0	$510.0	$544.0	$508.0	$360.7	$507.0	$583.0	$521.0	$505.0	$354.3	$315.7	$275.8	$ 1,930.8
Washington	6	98195	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$496.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$583.0	$521.0	$ 70.6	$553.0	$510.0	$495.0	$ 637.2
Wisconsin	1	53705	$ 510.0	$520.0	$523.0	$572.0	$524.0	$550.0	$579.0	$550.0	$495.0	$509.0	$554.0	$495.0	$557.0	$518.0	$541.0	$495.0	$495.0	$551.0	$550.0	$521.0	$510.0	$544.0	$508.0	$529.0	$507.0	$121.3	$521.0	$505.0	$553.0	$510.0	$495.0	$ 121.3

TAD Reimbursement Per Mile	$	0.3
Fixed Cost of Selecting Location	$	600.0
Price of an Airline Ticket	$	400.0

Total FY 98 Cost

Table 4.13 FY 98 Pre-commissioning Flight Physical Travel Costs

FY 99			NFB Tinker	BMC / NAS Brunswick	BMC / NAS China Lakes	BMC / NAS Point Mugu	BMC Millington	MAG 39 / NH Camp Pendleton	MCAS / NH Beaufort	MCAS Miramar	MCAS New River	MCAS Yuma	NAS Atlanta	NAS Fallon	NAS Fort Worth	NAS / NH Jacksonville	NAS JRB Willow Grove	NAS Kingsville	NAS Meridian	NAS / NACC New Orleans	NAS North Island / NMC San D.	NAS Oceana	NAS Pensacola	NACC Newport	NACC Portsmouth, NH	NH / NCAS Cherry Point	NH / NAS Corpus Christi	NH Great Lakes	NH / NAS Lemoore	NH Oak Harbor / NAS Whidbey	NMC Annapolis	NMC / NAS Pax River	NMC Quantico	
	Per Diem	L	$ 58.0	$ 58.0	$ 58.0	$ 98.0	$ 79.0	$ 98.0	$110.0	$ 98.0	$ 50.0	$ 52.0	$ 80.0	$ 50.0	$ 94.0	$ 63.0	$ 84.0	$ 50.0	$ 50.0	$ 88.0	$ 98.0	$ 54.0	$ 52.0	$ 77.0	$ 59.0	$ 71.0	$ 56.0	$108.0	$ 53.0	$ 84.0	$ 90.0	$ 59.0	$ 62.0	
		M	$ 38.0	$ 38.0	$ 34.0	$ 38.0	$ 38.0	$ 46.0	$ 42.0	$ 46.0	$ 30.0	$ 34.0	$ 38.0	$ 30.0	$ 38.0	$ 34.0	$ 42.0	$ 30.0	$ 30.0	$ 42.0	$ 46.0	$ 38.0	$ 34.0	$ 42.0	$ 42.0	$ 34.0	$ 32.0	$ 42.0	$ 38.0	$ 34.0	$ 42.0	$ 34.0	$ 34.0	
University	Aviators	Zip	73148	4011	93555	93042	38054	92055	28902	92145	28545	85369	30060	89496	76127	32212	19090	78363	39509	70143	92135	23460	32508	2840	3804	28533	78419	60088	93246	98278	21402	20670	22134	Totals
Arizona	6	85721	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$420.6	$495.0	$251.9	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$421.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 1,511.5
Auburn	8	36849	$ 516.0	$515.0	$509.0	$556.0	$381.1	$565.0	$409.0	$565.0	$495.0	$503.0	$104.6	$495.0	$551.0	$319.9	$547.0	$495.0	$225.0	$375.7	$565.0	$511.0	$239.3	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 838.1
Boston-MIT	8	2218	$ 516.0	$115.9	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$332.9	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$ 78.5	$ 71.1	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 426.7
Cal Berkeley	2	94720	$ 516.0	$515.0	$350.7	$400.1	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$235.7	$535.0	$553.0	$510.0	$513.0	$ 527.0
Carnegie Mellon	3	15213	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$334.3	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$319.8	$304.4	$276.6	$ 839.3
Chicago Area	6	60208	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$ 46.3	$510.0	$535.0	$553.0	$510.0	$513.0	$ 277.9
Colorado	6	80309	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 2,970.0
Cornell	8	14853	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$279.7	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$362.9	$363.1	$522.0	$504.0	$571.0	$510.0	$535.0	$365.4	$357.4	$354.1	$ 2,237.4
Florida	10	32611	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$327.1	$565.0	$495.0	$503.0	$363.1	$495.0	$551.0	$ 74.6	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$318.8	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 747.9
Florida A & M	3	32314	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$384.9	$565.0	$495.0	$503.0	$329.2	$495.0	$551.0	$134.0	$547.0	$495.0	$345.5	$390.6	$565.0	$511.0	$229.6	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 402.0
George Washington	10	20052	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$314.9	$503.0	$547.0	$495.0	$551.0	$514.0	$128.7	$495.0	$495.0	$551.0	$565.0	$241.6	$503.0	$397.9	$522.0	$338.8	$504.0	$571.0	$510.0	$535.0	$ 53.1	$ 74.9	$ 48.0	$ 460.2
Hampton Roads	22	23529	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$222.6	$503.0	$547.0	$495.0	$551.0	$514.0	$368.9	$495.0	$495.0	$551.0	$565.0	$ 44.1	$503.0	$540.0	$522.0	$140.3	$504.0	$571.0	$510.0	$535.0	$295.7	$148.8	$125.1	$ 969.4
Holy Cross	6	1610	$ 516.0	$132.3	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$310.2	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$ 78.3	$ 67.5	$522.0	$504.0	$571.0	$510.0	$535.0	$395.8	$510.0	$513.0	$ 525.3
Houston	4	77005	$ 516.0	$515.0	$508.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$326.5	$514.0	$547.0	$238.7	$495.0	$369.9	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$246.2	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 1,306.8
Idaho	4	83844	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$367.4	$553.0	$510.0	$513.0	$ 1,469.5
Illinois	9	61820	$ 516.0	$515.0	$509.0	$556.0	$395.8	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$141.4	$510.0	$535.0	$553.0	$510.0	$513.0	$ 1,272.8
Iowa state	6	50011	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$404.9	$510.0	$535.0	$553.0	$510.0	$513.0	$ 2,429.2
Jacksonville	17	32211	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$145.3	$565.0	$495.0	$503.0	$376.0	$495.0	$551.0	$ 41.3	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$331.7	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 702.3
Kansas	1	66045	$ 313.3	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 313.3
UCLA / USC	3	90089	$ 516.0	$515.0	$123.2	$ 61.9	$536.0	$ 86.6	$573.0	$109.8	$495.0	$281.8	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$116.5	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$235.6	$535.0	$553.0	$510.0	$513.0	$ 329.3
Maine Maritime Academy	3	4421	$ 516.0	$116.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$350.8	$252.8	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 758.5
Marquette	3	53201	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$ 66.2	$510.0	$535.0	$553.0	$510.0	$513.0	$ 198.5
Miami	3	45056	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$374.6	$510.0	$535.0	$553.0	$510.0	$513.0	$ 1,123.8
Michigan	3	48109	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$352.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 1,056.9
Mid South Region of Memphis	3	38152	$ 516.0	$515.0	$509.0	$556.0	$ 39.7	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$240.1	$398.5	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$410.9	$510.0	$535.0	$553.0	$510.0	$513.0	$ 2,465.6
Minnesota	8	55455	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 119.2
Missouri	2	65211	$ 516.0	$515.0	$509.0	$556.0	$393.9	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 787.8
Morehouse / Georgia Tech	7	30314	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$353.0	$565.0	$495.0	$503.0	$ 39.4	$495.0	$551.0	$334.0	$547.0	$495.0	$274.1	$551.0	$565.0	$511.0	$308.8	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 275.5
Nebraska	4	68588	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 2,064.0
New Mexico	1	87131	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 495.0
New York Maritime College	4	10465	$ 516.0	$323.3	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$ 95.2	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$139.4	$282.5	$522.0	$504.0	$571.0	$510.0	$535.0	$296.3	$268.3	$288.2	$ 380.7
Norwich	4	5863	$ 516.0	$266.8	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$393.5	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$291.9	$135.6	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 542.1
Notre Dame	7	46556	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$114.6	$510.0	$535.0	$553.0	$510.0	$513.0	$ 803.4
North Carolina / Piedmont	9	27708	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$377.7	$565.0	$112.0	$503.0	$387.8	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$240.2	$503.0	$540.0	$522.0	$121.5	$504.0	$571.0	$510.0	$535.0	$337.4	$275.0	$254.3	$ 1,008.3
Ohio State	6	43210	$ 516.0	$515.0	$508.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$421.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 3,368.4
Oklahoma	3	73019	$ 43.1	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$149.8	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 129.2
Oregon State	6	97331	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$345.9	$553.0	$510.0	$513.0	$ 2,073.7
Pennsylvania State	8	16802	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$150.4	$495.0	$495.0	$551.0	$565.0	$370.3	$503.0	$399.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$281.2	$273.1	$262.2	$ 1,202.8
Philadelphia	7	19104	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$ 42.0	$495.0	$495.0	$551.0	$565.0	$331.8	$503.0	$318.2	$353.8	$522.0	$504.0	$571.0	$510.0	$535.0	$110.4	$139.4	$136.2	$ 293.8
Purdue	5	47907	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$136.6	$510.0	$535.0	$553.0	$510.0	$513.0	$ 682.6
Rochester	1	14627	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$348.6	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 348.8
RPI	10	12180	$ 516.0	$308.8	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$284.8	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$265.9	$266.1	$522.0	$504.0	$571.0	$510.0	$535.0	$379.1	$510.0	$370.9	$ 2,660.9
San Diego State / San Diego	12	92110	$ 516.0	$515.0	$250.7	$134.6	$536.0	$ 63.2	$573.0	$ 40.9	$495.0	$131.1	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$ 41.4	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$310.4	$535.0	$553.0	$510.0	$513.0	$ 490.6
Savannah state	0	31404	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$ 61.4	$565.0	$315.8	$503.0	$314.0	$495.0	$551.0	$124.5	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$375.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ -
South Carolina	7	29208	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$117.1	$565.0	$253.5	$503.0	$292.4	$495.0	$551.0	$304.8	$547.0	$495.0	$495.0	$551.0	$565.0	$362.8	$503.0	$540.0	$522.0	$312.8	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 819.9
Southern and A & M	3	70813	$ 516.0	$515.0	$509.0	$556.0	$385.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$267.4	$ 86.2	$565.0	$101.8	$284.9	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 258.7
Texas	4	78712	$ 357.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$149.8	$514.0	$547.0	$240.5	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$247.9	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 599.1
Texas A & M	16	77841	$ 349.7	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$142.5	$514.0	$547.0	$264.9	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$272.3	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 2,280.3
The Citadel	11	29409	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$ 75.8	$565.0	$232.0	$503.0	$350.4	$495.0	$551.0	$273.7	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$292.4	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 833.4
Tulane	7	70118	$ 516.0	$515.0	$509.0	$556.0	$389.9	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$232.3	$ 34.2	$565.0	$511.0	$229.5	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 239.2
Utah	8	84112	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 3,960.0
Vanderbilt	3	37203	$ 516.0	$515.0	$509.0	$556.0	$264.2	$565.0	$573.0	$565.0	$495.0	$503.0	$291.8	$495.0	$551.0	$514.0	$547.0	$495.0	$302.7	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$535.0	$553.0	$510.0	$513.0	$ 792.6
Virginia	5	22904	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$295.0	$503.0	$547.0	$495.0	$551.0	$514.0	$314.2	$495.0	$495.0	$551.0	$565.0	$142.4	$503.0	$540.0	$522.0	$318.7	$504.0	$571.0	$510.0	$535.0	$128.7	$133.3	$108.8	$ 548.2
VMI	5	24450	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$312.1	$503.0	$547.0	$495.0	$551.0	$514.0	$361.0	$495.0	$495.0	$551.0	$565.0	$265.1	$503.0	$540.0	$522.0	$359.0	$504.0	$571.0	$510.0	$535.0	$297.0	$258.1	$237.4	$ 1,187.2
VPI	7	24061	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$421.2	$565.0	$309.6	$503.0	$404.5	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$313.2	$503.0	$540.0	$522.0	$343.0	$504.0	$571.0	$510.0	$535.0	$345.0	$306.2	$285.5	$ 1,998.4
Washington	5	98195	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$571.0	$510.0	$ 77.1	$553.0	$510.0	$513.0	$ 385.7
Wisconsin	0	53705	$ 516.0	$515.0	$509.0	$556.0	$536.0	$565.0	$573.0	$565.0	$495.0	$503.0	$547.0	$495.0	$551.0	$514.0	$547.0	$495.0	$495.0	$551.0	$565.0	$511.0	$503.0	$540.0	$522.0	$522.0	$504.0	$117.2	$510.0	$535.0	$553.0	$510.0	$513.0	$ -

TAD Reimbursement Per Mile	$	0.3	
Fixed Cost of Selecting Location	$	675.0	
Price of an Airline Ticket	$	400.0	

Travel Costs	$57,784.89
Training Fixed Costs (17 Facilities)	$11,475.00
Total FY 99 Cost	$69,259.89

Table 4.14 FY 99 Pre-commissioning Flight Physical Travel Costs

Bear in mind that alternative's one and two are not direct substitutes for one another. The ACES program, because of the flight school exposure it gives, will also most likely lower the number of SNAs that fail to complete flight school; quantification of this additional benefit is beyond the scope of this thesis.

2. Methodology and Assumptions

The methodology followed in analyzing alternative two is as follows:

1. Identify all variable costs associated with sending NROTC potential aviators to the ACES program.
2. Identify the total yearly number of aviation candidates produced from the NROTC commissioning program.
3. Identify the number of individuals within driving distance of Pensacola, FL.

The following assumptions were used to determine alternative two's costs:

1. The price of all airline tickets, regardless of departure location, was $400.
2. The costs recognized by the model were: traveling expenses, lodging, meals, traveling per diem rates, and a T-34 ride. Costs such as performing the flight physical, organizing the program, transporting individuals to and from the airport, instructors' salaries, and simulator time were excluded.
3. The percentage of ACES 139 inaugural candidates found NPQ without wavier (14.38%) was applied to the costing model (using rounding). These individuals were not given a T-34 flight, and were sent home on the second day (requiring one night of lodging and three meals).
4. Candidates within 420 miles of Pensacola drove to ACES. The model reflects this cost including disqualifying 14.38% of the total driving population. NROTC units driving to ACES are: Auburn, Florida, Florida A & M, Jacksonville, Morehouse / Georgia Tech, Southern A & M, and Tulane.
5. Potential costs involved with changing airline tickets were not considered.

3. NROTC ACES Variable Costs

Determining the cost of sending all NROTC aviation candidates through the ACES program is fairly simplistic. Navy offices related to the ACES activity in question were contacted to determine appropriate charges; the following paragraph gives the source, and cost estimates for the specific activities comprising the program.

LCDR Rad, ACES Program Director, stated that all ACES students stay in the Bachelors Enlisted Quarters (BEQ), and dine at the governmental galley. According to Sally J. Miller, an accounts receivable employee for the BEQ at NAS Pensacola, the cost of a single BEQ room was $9.60 from 1995 to 1997, and $12 thereafter. Individuals running the galley stated that the cost per galley meal has remained relatively constant from 1995 to 1999; this rate has been approximately $3. The ACES program is a five-day event; students arrive on Sunday afternoon / evening and leave on the following Friday (most likely in the early afternoon). Taking this into consideration, the model charged five nights and fifteen meals for every candidate found physically qualified.

One of ACES major benefits is that all aviation candidates receive a T-34 flight. According to Major Utke, USMC, VT-4's operations officer, the variable costs associated with this flight come to $400 per hour; this cost reflects all maintenance and fuel charges—everything but the pilot's salary. The final costs reflected in the model deal with expenses attributable to transporting candidates to and from Pensacola, FL; these are travel per diem charges and actual transportation costs.

4. Total NROTC ACES Costs

Table 4.15 on the following page provides a complete yearly cost breakdown of the ACES program. Once again, to foster equal comparison, the present (1999) value of this alternative's costs were computed using the 7% rate; the results are displayed in Table 4.16.

	1995	1996	1997	1998	1999	Total
FV	$596,863.33	$353,249.57	$292,973.40	$290,623.80	$289,636.27	$1,823,346.38

Table 4.16 Alternative Two's Time-Valued Costs

		1995	1996	1997	1998	1999
	Total Number of Candidates	**543**	**348**	**303**	**322**	**340**
	Disqualified Candidates	66	41	38	36	43
Air Travel	Physically Qualified Candidates	394	243	223	219	242
Vehicle	Disqualified Candidates	12	9	6	10	6
Travel	Physically Qualified Candidates	71	55	36	57	49
		Cost of Qualified Candidates Requiring Airline Tickets				
	Lodging ($9.60, $12 per night / 5 nights)	$ 18,912	$ 11,664	$ 10,704	$ 13,140	$ 14,520
	Meals ($3 per meal / 15 meals)	$ 17,730	$ 10,935	$ 10,035	$ 9,855	$ 10,890
	Airline Ticket ($400)	$157,600	$ 97,200	$ 89,200	$ 87,600	$ 96,800
	Travel Per Diem Rates (Table 4.4)	$ 18,912	$ 10,935	$ 11,373	$ 11,169	$ 12,342
	T-34 Flight ($400)	$157,600	$ 97,200	$ 89,200	$ 87,600	$ 96,800
		Cost of Disqualified Candidates Requiring Airline Tickets				
	Lodging ($9.60, $12 per night / 1 night)	$ 634	$ 394	$ 365	$ 432	$ 516
	Meals ($3 per meal / 3 meals)	$ 594	$ 369	$ 342	$ 324	$ 387
	Airline Ticket ($400)	$ 26,400	$ 16,400	$ 15,200	$ 14,400	$ 17,200
	Travel Per Diem Rates (Table 4.4)	$ 3,168	$ 1,845	$ 1,938	$ 1,836	$ 2,193
		Cost of Qualified Candidates with Vehicular Travel				
	Lodging ($9.60, $12 per night / 5 nights)	$ 3,408	$ 2,640	$ 1,728	$ 3,420	$ 2,940
	Meals ($3 per meal / 15 meals)	$ 3,195	$ 2,475	$ 1,620	$ 2,565	$ 2,205
	TAD Reimbursable / Mile (Table 4.3)	$ 12,465	$ 9,622	$ 6,498	$ 10,907	$ 9,173
	Travel Per Diem Rates (Table 4.4)	$ 3,408	$ 2,475	$ 1,836	$ 2,907	$ 2,499
	T-34 Flight ($400)	$ 28,400	$ 22,000	$ 14,400	$ 22,800	$ 19,600
		Cost of Disqualified Candidates with Vehicular Travel				
	Lodging ($9.60, $12 per night / 1 night)	$ 115	$ 86	$ 58	$ 120	$ 72
	Meals ($3 per meal / 3 meals)	$ 108	$ 81	$ 54	$ 90	$ 54
	TAD Reimbursable / Mile (Table 4.3)	$ 2,119	$ 1,631	$ 1,038	$ 1,936	$ 1,140
	Travel Per Diem Rates (Table 4.4)	$ 576	$ 405	$ 306	$ 510	$ 306
	Total Cost	$455,344	$288,357	$255,894	$271,611	$ 289,636

Table 4.15 Cost Breakdown of the ACES Program

F. ALTERNATIVE THREE: IMPLEMENTING NO CHANGE TO THE CURRENT SCREENING SYSTEM

1. Description

This alternative maintains the current process for screening NROTC aviation candidates; no change will be 'instituted' for comparison purposes. Instead, making use of CDR Black's derived attrition numbers, costs associated with moving NPQ (without waiver) candidates will be determined and compared against alternatives one and two. The results of alternative three should be looked upon as potential savings; its costs would greatly be reduced if pre-commissioning flight physicals were made to be more accurate.

2. Explanation of Changing Flight School Orders

The following discussion intends to clarify the type of flight school orders candidates have received over the years. The information was provided by LT Michael Moran, Flight Student Placement / Assistant VP Placement Officer, and was used to shape alternative three's costing model.

The type of orders issued to aviation candidates reporting to Pensacola, FL have changed three times in the last eight months. Prior to DEC 99, all potential aviators were given PCS orders. Technically, these orders were illegal because Joint federal Travel Regulations (JFTR) mandate that individuals can't PCS to a duty station / school less than twenty weeks. However, this instruction was ignored because the orders, for several reasons, were proving to be cost-effective. The vast majority of ensigns reporting to flight school were not coming from a permanent duty station so they were not eligible for

a Dislocation Allowance (DLA); second, because it was a college transition, candidates were moving very little to Pensacola (approximately 2,000 lbs on average).

However, several instances of individuals moving the maximum poundage allowed (12,000 lbs for an ensign with dependents), raised questions about the legality of the orders—and they were changed. Individuals reporting to flight school were now only authorized to move the TDY travel allowance of 600 lbs; the remaining portion of their household goods were put into storage, to be shipped to final reporting destinations. Further, upon arrival to Pensacola, all candidates were paid per diem. Hindsight, however, showed that paying so many people per diem was extremely expensive, so the orders were changed again.

Currently, reporting ensigns are only allowed the TDY travel allowance of 600 lbs (with remaining poundage put into storage); however, they are not allocated daily per diem—they are authorized Pensacola's BAH rate. There is one exception to this rule: individuals with a prior PCS move are still only authorized to move 600 lbs, however, they are paid per diem.

3. Relevant Moving Rules and Regulations

The following rules and regulations were provided by PSD personnel at the Naval Postgraduate School. There are two primary costs associated with moving military personnel to new duty stations: transporting individuals and moving their household goods.

Ensigns without dependents transiting to a new command are allocated $.15 per mile driven and $50 per travel day; Table 4.17 reflects the chart used to determine authorized travel days. The cost of transporting household goods depends on the distance

and poundage being moved; these rates can be found in the Military Traffic Management Command's Personal Property Accessorial Services Pamphlet.

Miles	Authorized Travel Days
1 - 400	1
401 - 750	2
751 - 1100	3
1101 - 1450	4
1451 - 1800	5
1801 - 2150	6
2151 - 2500	7
2501 - 2850	8
2851 - 3200	9
3201 - 3350	10
3551 - 3900	11
3901 - 4250	12
4251 - 4600	13
4601 - 4950	14

Table 4.17 Authorized Travel Days

4. Modeling Assumptions and Costing Techniques

1. Yahoo! Driving Directions was used to determine mileage between locations. This is not the distance source used by PSD, however, it was used to maintain consistency across alternatives.
2. Origination locations for candidates NOMI found NPQ couldn't be determined, so the average distance from all NROTC units to Pensacola was used to compute excess moving costs. This logic was also followed in computing average moving costs to Newport, RI.
3. The costs alternative three considered included moving individuals and their authorized household goods (the costs of storage were excluded because items would be put in storage regardless of whether an individual was found NPQ).
4. 2,000 lbs was used for the amount of goods an ensign would move.
5. Ensigns found NPQ were sent to Surface Warfare Officers School (SWOS) in Newport, RI.
6. The average moving cost formula for 2000 lbs going to Pensacola is: cost = (2000* Personal Property Accessorial Services Pamphlet designated charge for moving 2000 lbs 1085.49 miles (.4085))+(miles traveled*.15)+(authorized travel days*50).
7. The average moving cost formula for 600 lbs going to Pensacola is: cost = (600*(Personal Property Accessorial Services Pamphlet designated charge for moving 600lbs 1085.49 miles (.6975))+(miles traveled*.15)+(authorized travel days*50).

8. The moving cost formula for 2000 lbs going to Newport (from Pensacola) is: co. = (2000*(Personal Property Accessorial Services Pamphlet designated charge for moving 2000lbs 1388 miles (.4790))+(miles traveled*.15)+(authorized travel days*50).
9. The moving cost formula for 600 lbs going to Newport (from Pensacola) is: cost = (600*(Personal Property Accessorial Services Pamphlet designated charge for moving 600lbs 1388 miles (.7680))+(miles traveled*.15)+(authorized travel days*50).
10. The average moving cost formula for 2000 lbs going to Newport is: cost = (2000* Personal Property Accessorial Services Pamphlet designated charge for moving 2000 lbs 1239.45 miles (.444))+(miles traveled*.15)+(authorized travel days*50).
11. Ensigns were considered to be single.
12. All moves were assumed to be Do It Yourself (DITY) moves (ensigns move themselves and are paid 95% of what it would have cost the government).

5. Total Moving Expenses Due to Attrition

Despite the fact that flight school orders have recently changed, to provide a broader comparison, both policies associated with household goods will be analyzed. Table 4.18 depicts a time-valued approximation of how much was spent moving disqualified aviation candidates to Pensacola, then onto Newport. This table reflects ensigns moving all of their household goods (2,000 lbs was used as an average); Table 4.19 provides a detailed listing of these costs. The amounts presented in Tables 4.18 and 4.19 are excess costs the Navy actually incurred because of disparities between flight physicals (flight school orders were changed in DEC 99). Note, the cost of storing 1,400 pounds is not included in the figures, and the amounts shown reflect DITY moves. Tables 4.20 and 4.21 display excess moving costs that would have resulted if the 600 lb moving limitation had been implemented in 1995.

	1995	1996	1997	1998	1999	Total
FV	$63,108.89	$41,286.19	$46,853.49	$25,757.83	$24,072.74	$201,079.13

Table 4.18 Alternative Three's Time-Valued Costs (Moving 2,000 lbs)

2000 lbs	Year	NPQ No Waiver Candidates	Cost of Moving 2000 lbs to Pensacola, FL	Cost of Moving 2000 lbs to Newport, RI	Total Moving Cost Resulting From Attrition
	1995	20	$21,779.47	$26,366.00	$48,145.47
	1996	14	$15,245.63	$18,456.20	$33,701.83
	1997	17	$18,512.55	$22,411.10	$40,923.65
	1998	10	$10,889.74	$13,183.00	$24,072.74
	1999	10	$10,889.74	$13,183.00	$24,072.74
Average Cost of Moving a Candidate to Pensacola	$1,088.97				
Cost of Moving a Candidate from Pensacola to Newport	$1,318.3				

Table 4.19 Moving Costs Resulting From Attrition (2,000 lbs)

	1995	1996	1997	1998	1999	Total
FV	$40,801.37	$26,692.49	$30,291.87	$16,653.04	$15,563.59	$130,002.35

Table 4.20 Alternative Three's Time-Valued Costs (Moving 600 lbs)

600 lbs	Year	NPQ No Waiver Candidates	Cost of Moving 600 lbs to Pensacola, FL	Cost of Moving 600 lbs to Newport, RI	Total Moving Cost Resulting From Attrition
	1995	20	$14,207.97	$16,919.20	$31,127.17
	1996	14	$ 9,945.58	$11,843.44	$21,789.02
	1997	17	$12,076.77	$14,381.32	$26,458.09
	1998	10	$ 7,103.99	$ 8,459.60	$15,563.59
	1999	10	$ 7,103.99	$ 8,459.60	$15,563.59
Average Cost of Moving a Candidate to Pensacola	$710.40				
Cost of Moving a Candidate from Pensacola to Newport	$845.96				

Table 4.21 Moving Costs Resulting From Attrition (600 lbs)

6. Potential Savings

Table 4.22 shows what the average cost of moving disqualified aviation candidates directly to Newport, RI for Surface Warfare Officers School would have been

(because this school is longer than twenty weeks, ensigns are allowed to move all of their household goods). Table 4.23 provides the time-valued total.

2,000 lbs	Year	NPQ No Waiver Candidates	Total Moving Cost
	1995	20	$24,590.35
	1996	14	$17,213.25
	1997	17	$20,901.80
	1998	10	$12,295.18
	1999	10	$12,295.18
Average Cost of Moving to Newport / Candidate	$1,229.52		

Table 4.22 Average Cost of Moving 2,000 lbs to Newport

	1995	1996	1997	1998	1999	Total
FV	$32,232.93	$21,086.97	$23,930.47	$13,155.84	$12,295.18	$102,701.38

Table 4.23 Time-Valued Cost of Moving NPQ Candidates Directly to Newport

If the pre-commissioning physical were more accurate, NOMI wouldn't disqualify as many individuals; instead these people would be sent for training into another warfare community (this thesis assumes the surface Navy)—driving down moving costs. The formula to determine what these savings would have been is: savings = (average cost of moving NPQ candidates to Pensacola) + (cost of moving NPQ individuals from Pensacola to Newport) – (average cost of moving NPQ candidates directly to Newport). Doing this, with ensigns moving all of their household goods, results in a time-valued savings of $201,079.13 - $102,701.38 = $98,377.75. Because it is not determinable if the health of candidates legitimately deteriorated between physicals, this savings represents an upper bound. It should also be recognized that this savings does not reflect costs associated with ensigns' salaries and benefits while they

move to Pensacola and later to Newport. These expenses are additional costs of maintaining the current system and were beyond the scope of this thesis to quantify.

G. SENSITIVITY ANALYSIS

1. Description

The basic purpose of a sensitivity analysis is to acknowledge underlying uncertainty—and predict how sensitive net benefits are to changes in assumptions. In essence, it gives an upper and lower bound of the effects various variables have on the study's net outcome. According to OMB Circular A-94, major assumptions should be varied and net present value and other outcomes recomputed to determine how sensitive outcomes are to changes in the assumptions. The assumptions that deserve the most attention depend on dominant benefit and cost elements and the areas of greatest uncertainty of the program being analyzed.

2. Analysis

The strongest assumptions made by this study deal with costs linked to air travel, and driving aviation candidates to their pre-commissioning flight physicals. These assumptions do not influence alternative three; however, they greatly affect alternatives one and two—subjecting them to sensitivity analysis.

It has been assumed that the price of an airline ticket, regardless of departure or arrival destination, was $400. At this price, the time-valued costs of restructuring the pre-commissioning flight physical and sending all candidates to the ACES program were determined to be $399,885.56 and $1,823,346.38, respectively. Table 4.24 demonstrates both alternatives' costs assuming the price of an airline ticket is lowered to $300.

As evidenced by Table 4.24, alternative one isn't overly sensitive to changing airfare rates (a 25% drop in airfare only decreased total costs by 2.81%). Decreasing airline ticket prices does, however, have a strong affect on costs associated with opening the ACES program to all NROTC candidates; here, a 25% drop in airfare produces a 9.91% savings.

	1995	1996	1997	1998	1999	Total
Alt. One	$128,238.58	$65,463.00	$71,675.66	$55,923.40	$67,359.89	$388,660.53
Alt. Two	$536,566.72	$318,458.35	$263,091.51	$263,338.80	$261,136.27	$1,642,591.65

Table 4.24 Time-Valued Costs Assuming a $300 Airline Ticket

The next assumption requiring further attention deals with how aviation candidates travel to their pre-commissioning flight physicals (and the ACES program). One hundred percent of the TAD reimbursable amount was charged to every student driving to a flight physical. This is a very strong assumption; in reality, many students ride to their physical together in a governmental vehicle.

Table 4.25 demonstrates what happens when only a third of the individuals, for whatever reason, drive alone to the pre-commissioning physical (the cost figures include the $400 airline ticket charge). Alternative one, restructuring the pre-commissioning flight physical, is extremely sensitive to this assumption; reducing the overall TAD reimbursable charge by two-thirds resulted in a 31.26% cost reduction. Alternative two's costs, on the other hand, were only reduced by 2.40%.

	1995	1996	1997	1998	1999	Total
Alt. One	$90,594.62	$42,461.05	$53,227.42	$38,658.90	$49,944.85	$274,886.84
Alt. Two	$584,118.57	$344,057.92	$287,220.56	$281,461.03	$282,760.32	$1,779,618.40

Table 4.25 Time-Valued Costs Assuming a 2/3 Reduction in TAD Reimbursable Rates

Table 4.26 shows the results of relaxing both assumptions for both alternatives.

	1995	1996	1997	1998	1999	Total
Alt. One	$87,055.47	$40,868.49	$51,281.09	$36,411.90	$48,044.85	$263,661.81
Alt. Two	$523,821.95	$309,266.70	$257,338.67	$254,176.03	$254,260.32	$1,598,863.67

Table 4.26 Time-Valued Costs Assuming a $300 Airline Ticket and 2/3 TAD Charges

H. SUMMARY

Chapter IV analyzed two alternatives to the current flight physical screening process. Recognizing historic physical attrition rates, it calculated the approximate time-valued costs of these alternatives; actual attrition costs, reflecting the current screening process, were also calculated. Then, a sensitivity analysis determined the impacts of varying the strongest modeling assumptions used: airline ticket prices and van pool transportation.

No attempt was made in this chapter to value the potential benefits of implementing alternatives one or two; this analysis can be found in Chapter V.

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V. CONCLUSION AND RECOMMENDATIONS

A. CONCLUSION

This thesis provides a critical assessment of the Naval Reserve Officer Training Corps (NROTC) flight physical screening process. This assessment includes: an explanation of the Naval Operational Medical Institute's (NOMI) roles and responsibilities, a detailed description of the NROTC aviation screening process, quantification and analysis of flight physical attrition rates, and a cost-benefit analysis of alternative means to screen NROTC potential aviators. Perhaps the most beneficial aspect of this study, taking into account all assumptions made, was that it used the derived attrition information to establish the approximate cost of the current screening system, as well as two selected alternatives.

It was determined that from 1995 to 1999, 9.98% of NROTC aviation candidates passed their pre-commissioning flight physical but failed the follow on NOMI physical (using NOMI's data); this percentage is 8.03% using CNET's figures. Recognizing waivers granted for disqualifying conditions, the overall percentage of candidates not actually allowed to fly was 4.76% and 3.83%, respectively.

With the goal of lowering this attrition, two alternative screening methods were analyzed: restructuring the NROTC pre-commissioning flight physical and sending all NROTC aviation candidates to the Aviation Certification Evaluation and Screening (ACES) program. Optimization software was used to determine the most advantageous pre-commissioning flight physical sites for all NROTC units. The recommended solution restructured the pre-commissioning physical to use only seventeen facilities, and resulted in a projected time-valued variable cost of $399,885.56 (for 1995 to 1999). Sending all

NROTC aviation candidates to Pensacola for their pre-commissioning flight physicals (and the ACES program) was the most expensive alternative; it produced a total estimated cost of $1,823,346.38. Lastly, because of changes in orders to flight school, the cost of the current screening was computed two ways: with ensigns moving 2,000 and 600 lbs to flight school. Either way, implementing zero change to the current process was, by far, the cheapest alternative. Ensigns moving 2,000 lbs resulted in a time-valued cost of $201,079.13 (compared to a cost of $102,701.38 if NPQ ensigns were moved directly to Newport); when only 600 lbs were moved, total costs fell to $130,002.35.

The most difficult aspect of this thesis dealt with the subjectivity of its data. It could not be determined if the health of candidates found NPQ by NOMI legitimately deteriorated during the months between their flight physicals (this mainly applies to vision), where NPQ candidates were coming from, how much is currently spent on NROTC pre-commissioning flight physicals, and if proposed changes would reduce screening attrition rates. Because of these unknowns, it's difficult to compile a resounding conclusion; recommendations, however, can still be made.

B. RECOMMENDATIONS

The results of this study, without careful interpretation, can be very misleading. Although maintaining the current examination structure appears to be the least expensive alternative, it most likely isn't. This option only considered consequential moving costs associated with candidates being found NPQ (without waiver) by NOMI; the actual cost of transporting candidates to the pre-commissioning physical is not included in the cost estimate. Also, it is quite possible that many NROTC units utilize private sector faculties to complete pre-commissioning flight physicals; doing this is most likely more expensive

than keeping 100% of the physicals in-house. To foster an equal comparison, the current structure's variable costs (along with private sector screening expenses) would need to be determined and added to the cost of moving disqualified candidates.

Not focusing solely on the cost issue, the negatives of continuing the current screening system seem to outweigh the positives. Sending away almost 4% (using best-case percentages) of ensigns reporting to flight school appears to leave room for improvement; sadly, this attrition has probably decreased the morale of these individuals—hindering their dedication and loyalty to the Navy. Along with this frustration, although not examined by this thesis, the salaries of the transitioning officers should also be considered an expense (they are contributing absolutely nothing to the organization). The question becomes: how much is it worth to better the attrition situation?

Ignoring costs completely, without a doubt, the best way for the Navy to screen potential aviators is to send them through the ACES program. Here, NOMI personnel give an extremely accurate flight physical and candidates have the opportunity to experience flight school's demands first hand. ACES, in theory, should lower the screening process's attrition, as well as the number of Student Naval Aviators (SNA) that drop / fail out of flight school. But, when the vast resources the ACES program requires are taken into account, its potential benefits prove very expensive.

So, if the cost of opening the ACES program to all NROTC aviation candidates can't be justified, the next best alternative (analyzed by this thesis) is to restructure the pre-commissioning physical. Reducing the number of sites performing these physicals would make standardization, conformity, and tracking techniques much easier for NOMI

to control. The new screening structure would not be as comprehensive of an evaluation as the ACES program; however, it's roughly 80% cheaper, and in theory, should also increase the accuracy of the pre-commissioning physical—lowering the flight physical attrition rate. Accompanied by the restructuring, perhaps to help reduce SNA attrition, a realistic—intimidating—flight school video / documentary could be produced. This film could be shown to NROTC individuals wanting to fly, giving them the 'real deal' on flight school. This may discourage less ambitious or highly apprehensive candidates from even applying to flight school—helping to better the SNA attrition rate.

C. RECOMMENDATIONS FOR FURTHER STUDY

As mentioned in this conclusion, it would be extremely beneficial to know how much is actually spent on the current NROTC aviation screening process. Secondly, another alternative worthy of analyzing would be to establish a regional structure for the ACES program. To alleviate resource constraints on NAS Pensacola's facilities, and to lower overall distances traveled, several Naval facilities having physiological training capabilities (i.e. NAS Pax River, NAS Whidbey Island) could also be used for the ACES screening. As in alternative one (changing the structure of the pre-commissioning physical), optimization techniques could determine the assignment matrix that would result in the lowest overall cost. There are two problems foreseeable with this alternative that would require further consideration, however: getting candidates a flight in the T-34, and making sure the pre-commissioning flight physical is done to NOMI's exact specifications / level of quality.

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