

**LIFE CYCLE NAVY OFFICER BILLET COSTS--FY81**

Ernest A. Koehler

Reviewed by  
James J. McGrath

Released by  
James F. Kelly  
Commanding Officer

Navy Personnel Research and Development Center  
San Diego, California 92152



REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER NPRDC TR 81- 12	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) LIFE CYCLE NAVY OFFICER BILLET COSTS--FY81		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Ernest A. Koehler		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Navy Personnel Research and Development Center San Diego, California 92152		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS  63707N
11. CONTROLLING OFFICE NAME AND ADDRESS Navy Personnel Research and Development Center San Diego, California 92152		12. REPORT DATE June 1981
		13. NUMBER OF PAGES 20
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report)  UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)  Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Billet Costs Officer Costs Personnel Costs Life Cycle Costs		Cost Model
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The Officer Billet Cost Model has been developed to compute the cost of manning Navy billets with officers having requisite designators and grades, in terms of investment and operating cost to the U.S. government, for each year in the life cycle of a given billet. The resulting cost data are displayed in 22 designator groups by pay grade (Ensign, 0-1, to Captain, 0-6) and reflect the total cost of manning an established or proposed billet.		



## FOREWORD

This effort was conducted in support of Navy Decision Coordinating Paper Z1170-PN, under subproject Z1170-PN.05 (Reducing Manpower Costs Through Better System Design), and the sponsorship of the Deputy Chief of Naval Operations (Manpower, Personnel, and Training, OP-01). The objective of the subproject is to develop techniques for analysis of hardware/software personnel trade-offs at all stages of system design.

The objective of this effort was to provide decision makers in manpower planning and in hardware development offices with specific officer billet cost information. This cost information can be used for developing life-cycle costs for existing and potential new hardware systems of the Navy, for developing cost estimates for various manning concepts, and for conducting manpower-hardware cost trade-off analyses. The cost data contained in this report were prepared under contract by B-K Dynamics, Inc., of Rockville, Maryland.

This report supersedes NPRDC Special Report 80-18, which presented officer billet costs based on FY 1980 data. NPRDC Special Reports 80-7 and 80-19 provide similar cost data for Navy enlisted personnel and Civil Service employees respectively. Both of these reports currently are being revised to reflect FY81 costs data.

Appreciation is expressed to CDR Lee S. Mairs and CDR Paul E. Kanive, of the Economic Analysis Section, Chief of Naval Operations (OP-110E), for their assistance.

JAMES F. KELLY, JR.  
Commanding Officer

JAMES J. REGAN  
Technical Director



## SUMMARY

### Problem

Manpower cost has become a dominant element in the annual defense budget. As this cost has increased over the years, the need for and interest in identification of annual and life cycle manpower costs have also risen. Billet cost models are required for measuring the economic costs of creating or maintaining billets in the Navy's work force and for conducting various cost effectiveness assessments of manpower and hardware-manpower mixes.

### Objective

This report has been prepared to provide hardware developers, manpower managers, and cost analysts with specific billet cost data by Navy officer designators and pay grades (ranks) for 1, 5, 10, 15, and 20-year intervals.

### Approach

The cost model has been developed to compute the cost of manning Navy officer billets with people having requisite designators and grades, in terms of the investment and operating cost to the U.S. government, for each year in the life cycle of a given billet. The resulting cost data are displayed in designator groups by pay grade (Ensign, 0-1, to Captain, 0-6) and reflect the total cost of manning an established or proposed billet.



# CONTENTS

	Page
INTRODUCTION . . . . .	1
Problem . . . . .	1
Background . . . . .	1
Objective . . . . .	1
APPROACH . . . . .	2
Officer Billet Cost Model . . . . .	2
Officer Communities . . . . .	4
RESULTS . . . . .	5
Cost Computation. . . . .	5
Discount Rate . . . . .	6
APPENDIX--LIFE CYCLE NAVY OFFICER BILLET COSTS . . . . .	A-0
DISTRIBUTION LIST	



## INTRODUCTION

### Problem

As the cost of manpower has increased in recent years, billet costing has become an increasingly important tool in supporting the programming and planning actions of the Navy. If Navy hardware program managers and manpower planners are to make informed decisions on cost-effective design and manning alternatives, they must have information on the annual and life cycle costs of specific operator and maintenance billets required by such alternatives.

### Background

The life cycle billet cost is the estimated average total cost over a fixed number of years of manning a position with an officer with a particular skill classification (designator) and pay grade. The cost includes the following:

1. Direct costs, including base pay, allowances, hazard pay, incentive pay, and medical costs.

2. Training and retirement costs, which are amortized over the number of years personnel are expected to remain in service (based on historical continuation rates). These costs include liability annuities and continuation bonuses that are applicable for certain skill areas.

3. Overhead (fixed) costs, which are associated with all personnel regardless of designator or rank (e.g., those incurred for maintaining medical facilities).

G.I. benefits and personal skill development such as college/university courses are not included.

This report supersedes NPRDC Special Report 80-18, which presented officer billet costs based on FY 1980 data.<sup>1</sup> NPRDC Special Reports 80-7 and 80-19 provide similar cost data for Navy enlisted personnel and Civil Service employees respectively.<sup>2,3</sup>

### Objective

The objective of this effort was to provide hardware and manpower program managers and cost analysts with the latest available data (based on FY81 military pay rates) on the annual and life cycle costs of Navy active duty officer personnel by designators and pay grades for 1, 5, 10, 15, and 20-year periods. This information will enable billet cost data users to predict the annual and life-cycle costs of officer personnel

---

<sup>1</sup>Koehler, E. A. Life cycle Navy officer billet costs--FY80: An interim report (NPRDC Spec. Rep. 80-18). San Diego: Navy Personnel Research and Development Center, May 1980.

<sup>2</sup>Koehler, E. A. Life cycle Navy enlisted billet costs--FY80 (NPRDC Spec. Rep. 80-7). San Diego: Navy Personnel Research and Development Center, January 1980.

<sup>3</sup>Koehler, E. A. Navy civilian (Civil Service) billet costs--FY 1980: An interim report (NPRDC Spec. Rep. 80-19). San Diego: Navy Personnel Research and Development Center, May 1980.

and permit them to make decisions by (1) weighing costs of candidate system approaches that may be more manpower-intensive against those that may be less manpower-intensive, and (2) comparing hardware, software, and manpower costs of such approaches.

## APPROACH

### Officer Billet Cost Model

The Officer Billet Cost Model (OBCM) was developed for use in determining life cycle officer billet costs, using the methodology of the Enlisted Billet Cost Model (EBCM) maintained at CNO (OP-110). This was done to ensure compatibility between the two models in treating basic input data and subsequent cost outputs.

The EBCM was developed to provide the Navy with a means for computing enlisted manpower resource costs based on a standard, uniform cost formula. The model recognizes that, fundamentally, the Navy recruits (procures) basic personnel resources and develops, through training and experience within these resources, the skills and skill levels required to perform the work of the Navy so it can accomplish its total mission. In the officer area, these skills and skill levels are represented by designators and grades; that is, officer manpower requirements are spelled out in terms of designator and grade for the many jobs required within the Navy's numerous units and activities. Within these requirement frameworks, the OBCM computes the costs of manning the authorized billets with people having requisite skills, in terms of the investment and operation cost to the U.S. government, for each year in the life cycle of a given billet. A detailed list of cost items being used in the model is provided in Table 1.

In meeting the requirements for life cycle manpower costing, the manpower picture is viewed dynamically; that is, people are seen as flowing up through each grade and length of service. They are procured, trained, used, and, as time passes, lost through attrition, death, or retirement.

The Navy's mission is accomplished by people in operational billets. For costing purposes, officers are considered as being in an operational billet or status except when they are (1) in school or another type of training program that removes them from their assigned unit or (2) in a transient, patient, or prisoner status. Manpower related costs incurred during operational times are considered in the model formula as "Up" costs; and those incurred during nonoperational times, as "Down" costs. Down costs include pay-related costs and an apportionment of support and certain one-time occurring costs such as procurement (recruiting) costs based upon the length of the Down time. Since Down costs are considered as a manpower resource investment that the Navy must make to obtain future operational service, all Down costs are amortized over future operational billet years.

One major cost element that must be apportioned to operational billets is that related to retirement. The development of total cost of retirement per individual called the principal value of retirement is based on life expectancy data. This cost, computed on the basis of the average age at the time of retirement from specific grades, is distributed by the model, back (in time) over the operational billet years. Several methods of distributing this cost have been developed and tested. The method found to be the best for billet costing purposes, which was used in this model, distributes the principal value of

retirement as a fixed percentage of active base pay. This method was approved for billet costing by the Chief of Naval Operations.<sup>4</sup>

Table 1  
Factors Included in the Officer Billet Cost  
Model (OBCM) Computations

Data Element	Action/Source
Base Pay	1 October 1980 OASD (MRA&L) MPP
Clothing Allowance	MPN/Pay Manual <sup>a</sup>
Command and Administration	O&MN
Commissary	O&MN
Death Gratuity	MPN
Dental Pay	MPN
Dependent School	DoD Dependent School Office
Disability	MPN
Family Separation Allowance	MPN
FICA	6.02% of first \$17,500 from SSA
Hazard Pay	MPN
Insurance/Housing (FHA)	DoD McClary Report
Medical Costs	BUMED Comptroller; O&MN, Budget Activity 8
Medical/Veterinarian Pay	MPN
Messing Subsistence	MPN/Pay Manual
Overseas Station Allowance	MPN
Prisoner Apprehension	MPN
Personnel Procurement	MPN
Quarters Allowance	Inputed value from MPN for MILCON equivalent for base housing; MPN; pay table for off-base housing
Incentive/Continuance Pay	FY 1981 Congressional Submit MPN/O&MN
Retirement	Computed from force statistics and entitlements from Pay Manual
School Training	NITRAS/RMS/USUHS/DLI/CNO/NAVAIR/NWC/NMPC <sup>b</sup>
Severance/Readjustment Pay	MPN
Travel/Transportation	MPN tied to move patterns by grade

<sup>a</sup>MPN/O&MN budgets are from Congressional Submit., January 1980; Pay Manual is DoD Military Pay, Entitlements, Allowance Manual, 1968, as amended.

<sup>b</sup>USUHS = Uniformed Services University of the Health Sciences,  
DLI = Defense Language Institute,  
NWC = Naval War College

<sup>4</sup>CNO ltr OP-90E11 pgs. Ser 620-90 of 22 April 1969.

Basically, we are discussing a mathematical model that distributes military manpower costs (from initial procurement to the end of retirement) to the operational billet years on a year-by-year basis over a career. In essence, the cost model views each designator as a flow of people through a pipeline. The pipeline is divided into year-long intervals and all costs incurred by the designator in each interval are noted. During the interval, some officers are lost through various leaks in the pipeline (e.g., attrition, death, retirement, change in designator). No attempt is made to analyze these leaks; the only thing considered is the quantity of people entering the next interval. Quantity refers to the relative number only since the actual number would not affect the cost per officer/billet but only the total cost. Accordingly, the flow is normalized such that one officer retires at the end of the career span. This normalization process dictates that, based upon the flow rate for a given designator (which is different for each designator), the number of officers that must be introduced into the pipeline in the first year to produce one officer retiring at the end varies significantly.

A primary factor characterizing manpower billet costs is that these data must reflect the total cost of manning an established operational military billet, or a military billet that would be established within a proposed system. The costs that are developed by the model results in an "operational billet costs per year" for all operational billets in the Navy that are defined by a designator and grade.

The range of cost data is open-ended. As each cost element is identified, it must be determined whether it applies to all designators. If it applies to a particular designator(s), then the value is added to each appropriate designator as constant dollars by year of service or by grade.

The preliminary computations to obtain the input data (in card form) are made external to the model. The model will accept any numbers up to six digits. Accordingly, the precomputations and source data have been kept as a matter of routine so that future cost changes can be incorporated on an "as-required" or "as-occurred" basis.

Finally, it should be noted that the model is quite flexible in the sense that there is no fixed number of designator card packets that must be run at one time. This allows for experimentation with a single designator or a group of designators. A hypothetical designator can be created by defining a new designator XXX and preparing a cost/statistical profile, and run either by itself or with an established designator to obtain a comparison of results.

### Officer Communities

Designator codes are used in the Navy to specify officers by categories for personnel accounting and administrative purposes and to identify the status of personnel. For example, the designator code for Surface Warfare Officers is 11IX.

Officer categories are specified by designator code. To ensure that the small populations contained in some of these categories do not provide misleading continuance and advancement statistics, the categories in the OBCM were aggregated to create 22 communities. These communities, and the designator codes comprising them, are listed in Table 2.

Table 2  
Aggregated Officer Communities

Officer Community	Designator Codes Included
1 Other Line Officer	1100, 113X, 114X, 118X, 119X
2 Surface Warfare	111X, 116X
3 Submarine Warfare	112X, 117X
4 Aviation Officer (Pilot)	130X, 131X, 139X
5 Aviation Flight Officer	132X, 137X
6 Engineering Duty Officer	140X, 141X, 144X, 146X
7 Aviation Engineering Duty Officer	151X
8 Aviation Maintenance Duty Officer	152X
9 Special Duty Officer (SDO)--Crypto	161X
10 Special Duty Officer (SDO)--Intelligence/Photo	163X, 164X
11 Special Duty Officer (SDO)--Public Affairs	165X, 167X, 168X, 169X
12 Special Duty Officer (SDO)--Geophysics	180X
13 Medical Corps Officer	210X, 191X
14 Dental Corps Officer	220X, 192X
15 Medical Service Corps Officer	230X, 193X
16 Judge Advocate General's Corps Officer	250X, 195X
17 Nurse Corps Officer	290X
18 Supply Corps Officer	310X
19 Chaplain Corps	410X, 194X
20 Civil Engineer Corps	510X
21 Line-Limited Duty Officer	6XXX (all)
22 Warrant Officer	7XXX, 8XXX (all)

## RESULTS

### Cost Computation

The billet costs computed by the OBCM for each of the 22 officer communities appear in the appendix. Costs are provided for grades 0-1 through 0-6 (Ensign through Captain) and for warrant officers W-1 through W-4.

As shown in Table 1, the model's primary sources of cost data are the various budget documents that provide information for the past reporting period as well as justification for, and some detail on, money requirements for the upcoming period. After the expenditures have been identified, they are distributed to individual designators wherever possible--a critical step that results in cost differentiation among designators. Costs that are not applicable to a given designator are applied to the pay grade if appropriate or equally across all grades in the annual cost by year computations. The training cost data included in the cost model were derived primarily from records maintained by the Chief of Naval Education and Training (CNET). Thus, certain training costs controlled by commands other than CNET were not considered in computing the FY80 billet costs provided by NPRDC Special Report 80-18.

During FY 1980, attention was focused on expanding the training costs data base. The principal thrust was to identify and report those training cost factors omitted from the earlier report. However, even after this effort, some deficiencies still remain. Training costs were not identified for (1) factory training, (2) fleet replacement squadron ordnance costs (airborne ordnance for training), (3) the Armed Forces Institute of Pathology, (4) the Armed Forces Institute of Technology, (5) the Defense Intelligence School, (6) foreign service schools, and (7) advanced training aircraft acquisition. Deficiencies also continue to exist in costing training provided by other services or agencies (e.g., the Army, Air Force, Atomic Energy Commission, or National Aeronautics and Space Administration). As these costs and others are identified, they will be included in future reports on officer billet costs.

### Discount Rate

The multiple-year (5, 10, 15, and 20) billet cost tables were computed using a 10 percent discount rate, as specified by the Office of Management and Budget<sup>5</sup> for use when computing costs for future year obligations.

The 1-year cost figures do not reflect a discount rate. If the reader needs to apply a different discount rate or does not want to discount costs, the 1-year costs should be used as the base for such computations. For example, if no discount rate is to be applied and billet costs for a 15-year period are desired, the 1-year cost figure should be multiplied by 15. All such cost results, current and future, are based on FY 1981 dollars.

If a discount rate other than that reflected in the cost tables in the appendix needs to be applied, the following formula can be used with the 1-year cost figures:

$$S_n = \left[ 1 - \left( \frac{1}{1+r} \right)^n \right] \left[ \left( \frac{1+r}{r} \right) (x) \right]$$

where:

- S = Billet cost
- n = Number of years in billet life
- r = Discount rate
- x = Billet cost for first year.

Using this formula, the billet cost for a Submarine Warfare Officer (112X), rank 03, for a 5-year period, can be computed using the following values:

- n = Number of years of billet life = 5
- r = Discount rate = 10 percent = .10
- x = Billet cost for first year = \$35,064

---

<sup>5</sup>Office of Management and Budget Circular A-94. Subj: Discount Rates to be used in Evaluating Time, Distributed Costs, and Benefits.

Submarine Warfare Officer (0-3)  
5-year billet cost using 10 percent  
discount rate

$$\begin{aligned} &= \left[ 1 - \left( \frac{1}{1 + .10} \right)^5 \right] \left[ \left( \frac{1 + .10}{.10} \right) (x) \right] \\ &= (1 - (.90909)^5) \times (11 \times 35,064) \\ &= (1 - .6209181) \times 11 \times 35,064 \\ &= .3790819 \times 11 \times 35,064 \\ &= \$146,213.40 \text{ or} \\ &= 146,213.^6 \end{aligned}$$

---

<sup>6</sup>In the appendix, this figure computes to \$146,212 because of rounding in the 1-year cost scale.



**APPENDIX**  
**LIFE CYCLE NAVY OFFICER BILLET COSTS**



## LIFE CYCLE NAVY OFFICER BILLET COSTS

The training cost data included in the OBCM were derived primarily from records maintained by the Chief of Naval Education and Training (CNET). Thus, certain training costs controlled by commands other than CNET were not considered in computing the billet costs shown in this appendix. The implications of these deficiencies in the current report are as follows:

1. Cost data for pilots and Aviation Flight Officers are depressed. Their costs will be significantly increased when advanced training aircraft acquisition and support costs are computed.
2. Nuclear propulsion training costs, when computed from AEC records, will increase costs of officers qualified for such power plants in surface and subsurface ships.
3. University education paid for by the Navy will increase costs of those billets supported by such programs.

The Navy officer community is handled as a closed system for life cycle costing analysis. Implicit in this analysis is the concept of investment and costs from time zero. The higher grades are not reached without progressing through each of the lower grades. The cost tables in this appendix reflect costs for all pay grades (01 through 06)<sup>1</sup> although a designator may not have an inventory in all grades. This is an important point. Many designators do not necessarily have inventories of personnel inclusively from the 0-1 through 0-6 levels.

Some designators are used for administrative control of personnel at the entry levels (e.g., 1370 and 1390) while they await specific training. Other designators apply primarily to more senior personnel (e.g., 2XXX, 310X, 410X, 510X). Yet, in this report, cost data are provided at each pay grade for each designator. Such data are necessary for assessing the impact of tentative policy changes upon the Navy's personnel system. In addition, policies concerning entry and exit pay levels for designators change periodically. For example, designators 1370 and 1390 are usually maintained only through the 0-2 level. In 1980, however, they extended into the 0-3 level. A complete set of cost data, therefore, ensures maximum usefulness of the data to the user community as a whole.

---

<sup>1</sup>Limited Duty Officers (LDO) and Warrants excepted.

Table A-1

## Life Cycle Navy Officer Billet Costs by Designator

Community/ Designators	Rank	Years <sup>a</sup>				
		1	5	10	15	20
Other Line Officer (1100, 113X, 114X, 118X, 119X)	001 0-1	17781.	74144.	120182.	148769.	166518.
	001 0-2	20212.	84281.	136614.	169108.	189285.
	001 0-3	27045.	112774.	182798.	226278.	253275.
	001 0-4	32932.	137322.	222589.	275533.	308407.
	001 0-5	40871.	170427.	276249.	341956.	382755.
	001 0-6	49259.	205404.	332944.	412136.	461309.
Surface Warfare (111X, 116X)	002 0-1	24400.	101745.	164921.	204148.	228505.
	002 0-2	24217.	100982.	163684.	202617.	226791.
	002 0-3	29631.	123557.	200277.	247914.	277493.
	002 0-4	37764.	157471.	255248.	315961.	353659.
	002 0-5	43953.	183278.	297080.	367742.	411618.
	002 0-6	49325.	205679.	333390.	412688.	461927.
Submarine Warfare (112X, 117X)	003 0-1	29219.	121839.	197492.	244467.	273635.
	003 0-2	29922.	124771.	202244.	250349.	280218.
	003 0-3	35064.	146212.	236999.	293371.	328373.
	003 0-4	39659.	165373.	268057.	331816.	371405.
	003 0-5	47345.	197422.	320007.	396122.	443384.
	003 0-6	53503.	223101.	361629.	447645.	501054.
Aviation Officer (Pilot) (130X, 131X, 139X) <sup>b</sup>	004 0-1	54687.	228038.	369632.	457551.	512142.
	004 0-2	68902.	287312.	465711.	576484.	645265.
	004 0-3	81343.	339190.	549801.	680574.	761774.
	004 0-4	64603.	269386.	436654.	540515.	605005.
	004 0-5	70657.	294630.	477573.	591167.	661700.
	004 0-6	60871.	253824.	411430.	509291.	570055.
Aviation Flight Officer (132X, 137X) <sup>b</sup>	005 0-1	42314.	176444.	286002.	354029.	396269.
	005 0-2	51584.	215099.	348658.	431589.	483082.
	005 0-3	51149.	213285.	345718.	427949.	479009.
	005 0-4	54531.	227387.	368577.	456246.	510681.
	005 0-5	59953.	249996.	405225.	501610.	561458.
	005 0-6	61291.	255575.	414268.	512805.	573988.

<sup>a</sup>Multiple-year (5, 10, 15, and 20) cost figures reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

<sup>b</sup>Costs of aircraft designed and operated specifically for training have not been considered in computing costs for the 1300 series designators. These costs will be determined and included in a future revision to this report.

Table A-1 (Continued)

Community/ Designators	Rank	Years <sup>a</sup>				
		1	5	10	15	20
Engineering Duty Officer (140X, 141X, 144X, 146X, 147X)	006 0-1	20806.	86758.	140629.	174078.	194847.
	006 0-2	27417.	114325.	185313.	229390.	256759.
	006 0-3	33539.	139853.	226691.	280611.	314092.
	006 0-4	41146.	171573.	278107.	344257.	385331.
	006 0-5	45625.	190250.	308381.	381732.	427277.
	006 0-6	50030.	208619.	338155.	418587.	468529.
Aviation Engineering Duty Officer (151X)	007 0-1	19469.	81183.	131592.	162892.	182326.
	007 0-2	28336.	118157.	191524.	237079.	265366.
	007 0-3	33897.	141346.	229111.	283607.	317444.
	007 0-4	38981.	162546.	263474.	326143.	365056.
	007 0-5	44979.	187557.	304015.	376327.	421227.
	007 0-6	49556.	206642.	334951.	414621.	464090.
Aviation Maintenance Duty Officer (152X)	008 0-1	19669.	82017.	132944.	164565.	184199.
	008 0-2	22607.	94268.	152802.	189146.	211714.
	008 0-3	31033.	129404.	209753.	259644.	290623.
	008 0-4	34551.	144073.	233532.	289079.	323569.
	008 0-5	42968.	179171.	290422.	359501.	402394.
	008 0-6	49466.	206267.	334343.	413868.	463247.
SDO Crypto (161X, 162X)	009 0-1	20253.	84452.	136891.	169451.	189669.
	009 0-2	22896.	95473.	154755.	191564.	214420.
	009 0-3	32095.	133832.	216931.	268530.	300569.
	009 0-4	37128.	154819.	250950.	310640.	347702.
	009 0-5	43772.	182524.	295857.	366228.	409923.
	009 0-6	49250.	205366.	332883.	412061.	461225.
SDO Intelligence/ Photo (163X, 164X)	010 0-1	18395.	76705.	124333.	153906.	172269.
	010 0-2	21093.	87955.	142568.	176479.	197535.
	010 0-3	29935.	124825.	202332.	250458.	280340.
	010 0-4	35630.	148572.	240825.	298106.	333674.
	010 0-5	43033.	179442.	290862.	360045.	403003.
	010 0-6	49105.	204761.	331903.	410848.	459867.

<sup>a</sup>Multiple-year (5, 10, 15, and 20) cost figures reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table A-1 (Continued)

Community/ Designators	Rank	Years <sup>a</sup>				
		1	5	10	15	20
SDO Public Affairs (165X, 167X, 168X, 169X)	011 0-1	19220.	80145.	129909.	160808.	179995.
	011 0-2	21174.	88293.	143116.	177157.	198294.
	011 0-3	30227.	126043.	204305.	252901.	283075.
	011 0-4	34804.	145128.	235242.	291195.	325938.
	011 0-5	43511.	181435.	294093.	364044.	407479.
	011 0-6	49996.	208477.	337925.	418302.	468211.
SDO Geophysics (180X)	012 0-1	18580.	77476.	125583.	155454.	174001.
	012 0-2	21447.	89431.	144961.	179441.	200850.
	012 0-3	30084.	125446.	203339.	251704.	281736.
	012 0-4	35773.	149169.	241791.	299303.	335013.
	012 0-5	37421.	156041.	252930.	313091.	350446.
	012 0-6	49117.	204811.	331984.	410948.	459979.
Medical Corps Officer (210X, 191X)	013 0-1	20483.	85411.	138445.	171376.	191823.
	013 0-2	22165.	92425.	149814.	185448.	207574.
	013 0-3	48269.	201275.	326252.	403853.	452037.
	013 0-4	40169.	167499.	271504.	336083.	376181.
	013 0-5	47151.	196614.	318695.	394499.	441567.
	013 0-6	53533.	223226.	361832.	447896.	501335.
Dental Corps Officer (220X, 192X)	014 0-1	17756.	74040.	120014.	148559.	166284.
	014 0-2	19438.	81054.	131382.	162632.	182036.
	014 0-3	29900.	124679.	202095.	250165.	280012.
	014 0-4	37604.	156804.	254167.	314622.	352160.
	014 0-5	47245.	197005.	319331.	395286.	442448.
	014 0-6	55845.	232866.	377459.	467239.	522986.
Medcial Service Corps Officer (230X, 193X)	015 0-1	18747.	78173.	126712.	156851.	175565.
	015 0-2	23141.	96495.	156411.	193614.	216715.
	015 0-3	31065.	129537.	209970.	259912.	290923.
	015 0-4	34502.	143869.	233200.	288669.	323110.
	015 0-5	40608.	169330.	274471.	339756.	380292.
	015 0-6	48606.	202681.	328530.	406673.	455193.

<sup>a</sup>Multiple-year (5, 10, 15, and 20) cost figures reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table A-1 (Continued)

Community/ Designators	Rank	Years <sup>a</sup>				
		1	5	10	15	20
Judge Advocate General's Corps Officer (250X, 195X)	016 0-1	19922.	83072.	134654.	166682.	186569.
	016 0-2	25969.	108287.	175526.	217275.	243199.
	016 0-3	30406.	126789.	205515.	254398.	284751.
	016 0-4	36462.	152042.	246448.	305067.	341465.
	016 0-5	41557.	173287.	280885.	347696.	389180.
	016 0-6	49353.	205796.	333579.	412923.	462189.
Nurse Corps Officer (290X)	017 0-1	18198.	75883.	123001.	152258.	170424.
	017 0-2	20951.	87363.	141609.	175291.	196205.
	017 0-3	30367.	126626.	205252.	254072.	284386.
	017 0-4	35279.	147109.	238452.	295169.	330387.
	017 0-5	42373.	176690.	286401.	354523.	396822.
	017 0-6	48909.	203944.	330578.	409208.	458031.
Supply Corps Officer (310X)	018 0-1	19636.	81880.	132721.	164289.	183890.
	018 0-2	22485.	93760.	151977.	188126.	210571.
	018 0-3	30656.	127832.	207205.	256490.	287092.
	018 0-4	35982.	150040.	243204.	301051.	336970.
	018 0-5	43014.	179363.	290733.	359886.	402825.
	018 0-6	49052.	204540.	331544.	410404.	459370.
Chaplain Corps (410X, 194X)	019 0-1	20171.	84110.	136337.	168765.	188901.
	019 0-2	25543.	106511.	172646.	213711.	239209.
	019 0-3	30543.	127360.	206441.	255545.	286034.
	019 0-4	35803.	149294.	241994.	299554.	335294.
	019 0-5	42825.	178575.	289456.	358305.	401055.
	019 0-6	48628.	202772.	328679.	406857.	455399.
Civil Engineer Corps (510X)	020 0-1	18902.	78819.	127759.	158148.	177017.
	020 0-2	21643.	90248.	146286.	181081.	202686.
	020 0-3	30580.	127515.	206691.	255854.	286381.
	020 0-4	36216.	151016.	244785.	303009.	339162.
	020 0-5	43315.	180618.	292768.	362404.	405643.
	020 0-6	49068.	204607.	331653.	410538.	459520.

<sup>a</sup>Multiple-year (5, 10, 15, and 20) cost figures reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table A-1 (Continued)

Community/ Designators	Rank	Years <sup>a</sup>				
		1	5	10	15	20
Line-Limited Duty Officer (6XXX (ALL))	021 0-1	34527.	143973.	233369.	288878.	323344.
	021 0-2	34427.	143556.	232693.	288041.	322408.
	021 0-3	40151.	167424.	271382.	335932.	376013.
	021 0-4	39392.	164259.	266252.	329582.	368905.
	021 0-5	44507.	185588.	300825.	372378.	416806.
	021 0-6	0.	0.	0.	0.	0.
Warrant Officer (7XXX, 8XXX (ALL))	022 W-1 <sup>b</sup>	27932.	116473.	188794.	233699.	261582.
	022 W-2	28120.	117257.	190064.	235272.	263343.
	022 W-3	33264.	138707.	224833.	278311.	311516.
	022 W-4	36403.	151796.	246049.	304574.	340913.

<sup>a</sup>Multiple-year (5, 10, 15, and 20) cost figures reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

<sup>b</sup>Although the W-1 pay grade is not currently in use, it has been included to provide a base for computational data for planning purposes and to maximize usefulness of the cost data base.

## DISTRIBUTION LIST

Deputy Under Secretary of Defense Research and Engineering (Research and Advanced Technology)  
Military Assistant for Training and Personnel Technology  
Assistant Secretary of the Navy (Manpower, Reserve Affairs, and Logistics)  
Deputy Assistant Secretary (Manpower) (5)  
Chief of Naval Operations (OP-01), (OP-11), (OP-110), (OP-110C2) (25), (OP-111C3), (OP-112), (OP-112C) (10), (OP-115) (2), (OP-12), (OP-120C), (OP-122D), (OP-13), (OP-13B1), (OP-132), (OP-135D), (OP-15), (OP-16), (OP-02), (OP-021), (OP-03), (OP-031D1), (OP-39), (OP-40), (OP-433), (OP-05), (OP-095), (OP-901), (OP-964D), (OP-964D1), (OP-966E4), (OP-987H)  
Chief of Naval Material (NMAT-00), (NMAT-04), (NMAT-08B)  
Director, Strategic Systems Project (NSP-00), (NSP-14), (NSP-15), (NSP-1541), (NSP-201), (NSP-205), (NSP-22), (NSP-23), (NSP-24), (NSP-26), (NSP-27)  
Chief of Naval Research (Code 200), (Code 450) (3), (Code 452), (Code 455), (Code 458)  
Chief of Information (OI-2252)  
Chief of Naval Education and Training (N-3), (N-31), (N-5)  
Chief of Naval Technical Training (017)  
Director of Navy Laboratories  
Commandant of the Marine Corps (MPI-20)  
Commander David W. Taylor Naval Ship Research and Development Center  
Commander Naval Air Development Center (Code 00), (Code 2023), (Code 602)  
Commander Naval Air Systems Command (PMA-231), NAIR-531)  
Commander Naval Aviation Logistics Center (Code 422), (Code 423)  
Commander Naval Electronic Systems Command (NELEX 01), (NELEX 330), (NELEX 350), (NELEX 04C), (NELEX 4701), (NELEX 501), (NELEX 504B), (NELEX 52011) (6), (NELEX 550) (PMS 107-5), (PMS 108-1), (PMS 124-430)  
Commander Naval Facilities Engineering Command (031A)  
Commander, Naval Military Personnel Command (NMPC-013C), (NMPC-5) (5)  
Commander Naval Ocean Systems Center (Code 00), (Code 161), (Code 162), (Code 811), (Code 814), (Code 8143), (Code 821), (Code 823), (Code 8231), (Code 824), (Code 825), (Code 8254), (Code 8302), (Code 834), (Code 8341), (Code 912), (Code 921), (Code 9242), (Code 9311), (Code 9321), (Code 9333)  
Commander Naval Sea Systems Command (NSEA 03C), (NSEA 032J), (NSEA 312), (NSEA 3134) (10), (NSEA 04L2), (NSEA 05L), (NSEA 05L1C), (NSEA 06H3-13), (NSEA 61R2) (3), (NSEA 62R) (3), (NSEA 63R) (3), (PMS 300), (PMS 300C4), (PMS 30612), (PMS 377213), (PMS 404-30), (PMS 404-35)  
Commander Naval Surface Weapons Center, Dahlgren (Code G31) (5)  
Commander Naval Weapons Center (Code 00), (Code 081), (Code 3664)  
Commander Operational Test and Evaluation Force (Code 226)  
Commander Training Command, U.S. Atlantic Fleet (Code N3A)  
Commander Training Command, U.S. Pacific Fleet  
Commanding Officer, Fleet Combat Training Center, Pacific (Code 00E)  
Commanding Officer, Naval Aerospace Medical Institute (Library Code 12) (2)  
Commanding Officer, Naval Coastal Systems Center  
Commanding Officer, Naval Education and Training Program Development Center (Technical Library) (2)  
Commanding Officer, Naval Electronic Systems Security Engineering Center (Code 240)  
Commanding Officer, Naval Sea Support Center, Pacific (Code 40)  
Commanding Officer, Naval Ship Weapon Systems Engineering Station (Code 5400)  
Commanding Officer, Naval Training Equipment Center (Technical Library), (N82), (712)  
Commanding Officer, Naval Underwater Systems Center (Code 00), (Code 22), (Code 301)  
Director, Naval Weapons Engineering Support Activity (Code ESA 8313), (Code ESA 84)

Director, Training Analysis and Evaluation Group (TAEG)  
Officer in Charge, Central Test Site for Personnel and Training Evaluation Program  
Officer in Charge, Annapolis Laboratory, David W. Taylor Naval Ship Research and Development Center Detachment (Code 00), (Code 273), (Code 2735) (2)  
Officer in Charge, Naval Facilities Engineering Command Detachment, Civil Engineering Laboratory (Code L03), (Code L0D3)  
Officer in Charge, New London Laboratory, Naval Underwater Systems Center Detachment  
Officer in Charge, White Oak Laboratory, Naval Surface Weapons Center Detachment  
President, Naval War College (Code E114)  
Fleet Master Chief, Naval Material Command (NMAT 00C)  
Fleet Master Chief, U.S. Atlantic Fleet (Code 003)  
Fleet Master Chief, U.S. Pacific Fleet (Code 008)  
Force Master Chief, Chief of Naval Education and Training (Code 003)  
Commanding Officer, Army Research Institute for the Behavioral and Social Sciences, Alexandria (Reference Service)  
Chief, Army Research Institute Field Unit, Fort Harrison  
Commander, Air Force Human Resources Laboratory (Manpower and Personnel Division) Brooks Air Force Base  
Commander, Air Force Human Resources Laboratory (Scientific and Technical Information Office) Brooks Air Force Base  
Commander, Air Force Human Resources Laboratory (AFHRL/OT) Williams Air Force Base  
Commander, Air Force Human Resources Laboratory (CNET Liaison Office) Williams Air Force Base  
Commander, Air Force Human Resources Laboratory (AFHRL/LR) Wright-Patterson Air Force Base  
Director, Plans and Program, Air Force Logistic Management Center, Gunter Air Force Station  
Program Manager, Life Sciences Directorate, Bolling Air Force Base  
Commandant Coast Guard Headquarters (G-P-1/62)  
Director, Science and Technology, Library of Congress  
Defense Technical Information Center (DDA) (12)