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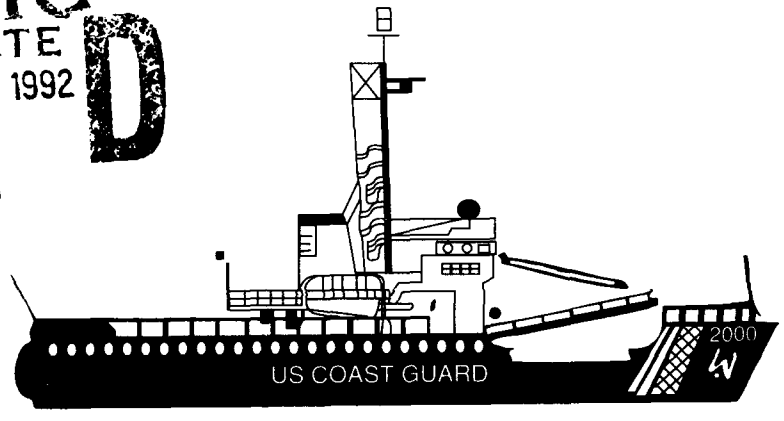
Aids to Navigation Service Force Mix 2000 Project

Volume III

Analysis of Multi-Mission Requirements and Development of Planning Factors for the Replacement Buoy Tender Fleet



USCG Office of Navigation
Safety and Waterway Services
Short Range Aids to Navigation
Washington, DC 20593-0001

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U.S. Department of Transportation
United States Coast Guard

Office of Navigation Safety and Waterway Services
Washington, DC 20593

The Aids to Navigation Service Force Mix 2000 Project is documented in a Project Overview and three separately bound volumes. Volume I, "Development and Application of an Aids to Navigation Service Force Mix Decision Support System -- Final Report" documents the Volpe Center's analysis and development of the proposed replacement buoy tender fleet. Volume II, "Development and Application of an Aids to Navigation Service Force Mix Decision Support System -- Aid Assignments and Vessel Summary Reports" contains the DSS outputs associated with the findings of Volume I. Volume III, "Analysis of Multi-Mission Requirements and Development of Planning Factors for the Replacement Buoy Tender Fleet", documents the USCG's analysis and development of baseline multi-mission requirements of the replacement buoy tender fleet. All four documents are available from the National Technical Information Service, Springfield, VA 22161.

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13. ABSTRACT (Maximum 200 words)

The Aids to Navigation (ATON) Service Force Mix (SFM) 2000 Project is documented in a Project Overview and three separately bound volumes.

The Project Overview describes the purpose, approach, analysis, and results of the ATON SFM 2000 Project conducted by the USCG's Office of Navigation Safety and Waterway Services, Short Range Aids to Navigation Division.

Volume I, "Development and Application of an Aids to Navigation Service Force Mix Decision Support System -- Final Report", documents the Volpe Center's analysis and development of the proposed replacement buoy tender fleet. The document describes current ATON operations, the concept, development, and operation of the Decision Support System (DSS), the data utilized by the DSS, validation of the DSS, and the proposed service force mix.

Volume II, "Development and Application of an Aids to Navigation Service Force Mix Decision Support System -- Aid Assignments and Vessel Summary Reports", contains the DSS outputs associated with the findings of Volume I. Included are maps of the aid assignments for each vessel in both the current and proposed fleets and the associated one-page DSS summary printouts.

Volume III, "Analysis of Multi-Mission Requirements and Development of Planning Factors for the Replacement Buoy Tender Fleet", documents the USCG's analysis and development of baseline multi-mission requirements of the replacement buoy tender fleet. The document describes buoy tender employment categories, historical tender employment data, the determination of underway hours per underway day, and projected impacts on multi-mission requirements resulting from alternative replacement fleet scenarios.

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1.0 INTRODUCTION

This report analyzes multi-mission employment requirements for the replacement buoy tender fleet and identifies the key planning factors for the Aids to Navigation Service Force Mix 2000 Project.

1.1 BACKGROUND

The Coast Guard is in the process of acquiring new resources to replace the capabilities of its aging seagoing and coastal buoy tender fleet. The Short Range Aids to Navigation Division has worked closely with the Office of Acquisition from the onset of this project, developing a detailed Mission Needs Statement, Sponsor's Requirements Documents, Circulars of Requirements and Requests for Proposals. In support of KDP-4 of the acquisition process, including the required advance budget planning, the required number of replacement seagoing buoy tenders (WLBRs) and replacement coastal buoy tenders (WLMRs) must be determined.

1.2 INPUT PARAMETERS

Several input parameters, or Planning Factors, critical to the effective employment and support of the replacement buoy tender fleet are identified in this report. In particular, multi-mission employment requirements have a major impact on the ATON Service Force Mix. These requirements are analyzed in detail.

The Mission Needs Statement indicates that the replacement seagoing buoy tender will continue to be a multi-mission resource and the replacement coastal buoy tender will be a focused-mission resource. The total number of ships required to service aids to navigation is expected to be less than currently required, but remain relatively constant regardless of the mix of replacement buoy tenders. Therefore, the higher the multi-mission requirements, the higher the number of WLBRs and lower the number of WLMRs. Conversely, the lower the number of WLBRs, the lower the amount of multi-mission employment available from the buoy tender fleet. In addition to multi-mission impact, other "public policy" considerations affected by the number of WLBRs include home port locations and workforce impacts.

1.3 METHODOLOGY

We have conducted a three-pronged effort to determine Coast Guard multi-mission requirements for seagoing buoy tenders. We collected data from the Abstract of Operations (AOPS) reports for the past five years. We also requested information from other program managers on planned use of seagoing buoy tenders for operations in their programs. Finally, we collected data from the field on individual districts' multi-mission requirements, as a combination of geographic and per-ship employment. The variance between program managers' and districts' reported multi-mission needs is also addressed.

1.4 RELATIONSHIP TO OTHER WORK

The field inputs used in developing the planning factors identified in this report, particularly the multi-mission requirements, were obtained through the Expert Study of the Aids to Navigation Service Force Mix. The Expert Study was a combination of individual district projections of their required service force mix, telephone conference answers to the Buoy Tender Operations Survey conducted jointly by the Short Range Aids to Navigation Division and the John A. Volpe National Transportation Systems Center, and individual district analysis of multi-mission employment requirements. The Expert Study is described in more detail in the Aids to Navigation Service Force Mix 2000 Project Report Overview. The analysis in this report forms the basis for the Baseline Multi-mission Requirements used in exercising the Aids to Navigation Service Force Mix Decision Support System developed by the Volpe Center and described in the Aids to Navigation Service Force Mix 2000 Project Report, Volume I.

2.0 BUOY TENDER EMPLOYMENT

For analysis purposes, we need to clearly identify how our buoy tenders' time is spent. The most readily available source of this information is the Abstract of Operations (AOPS). Resource hours expended in various employment categories are recorded for each ship. Days spent underway, in high readiness, involved in inport operations, in maintenance status, and in standby status are also recorded.

Although the AOPS data is recorded in a computer data base, direct access for generating the data summaries, reports and graphs was not possible. The required data was manually entered into spreadsheets developed by the Short Range Aids to Navigation Division for this analysis. Individual spreadsheets were prepared for each seagoing and coastal buoy tender, including AOPS data from FY-86 through FY-90. The information on these spreadsheets was then combined on summary spreadsheets, reporting summary employment information by cutter class for each District, for both Areas, and Coast Guard wide. Copies of these summary spreadsheets are provided in Appendix A to this report.

2.1 FOCUSED MISSION/MULTI-MISSION

We have identified in our Mission Needs Statement for the Seagoing and Coastal Buoy Tender Replacement Project that the WLBRs will be "multi-mission" and the WLMRs will be "focused mission". To get a handle on what that means, we have divided the Abstract of Operations (AOPS) employment categories into four groupings: Primary Mission, Training and Miscellaneous Operations, Essential Multi-mission, and Other Multi-mission.

As focused mission ships, WLMRs would not normally be assigned missions in the "Other Multi-mission" employment categories except as vessels of opportunity. WLBRs could be assigned missions in all of these employment category groupings. This breakdown gives us a consistent method to examine resource hour requirements in terms that correspond to our Mission Needs Statement and the Sponsor's Requirements Document. Using these employment category definitions, even "focused mission" ships are employed to some extent in Coast Guard Missions above and beyond their primary employment categories.

2.2 EMPLOYMENT CATEGORY DEFINITION

Employment category definitions will differ for Coast Guard resources with different primary mission areas and different inherent capabilities. For buoy tenders, the following definitions apply.

2.2.1 Primary Mission Employment - For ATON servicing vessels, the primary mission AOPS categories include Short Range Aids to Navigation and Radionavigation Aids (e.g. tender time spent servicing the mooring buoys and coordinating the refueling of LORSTA Kure Island).

2.2.2 Training and Miscellaneous Operations (TMO) - For ATON vessels, this includes time spent in support of Coast Guard employment categories just by virtue of being a Coast Guard vessel. The amount of employment in these categories depends on the number of ships available. These Abstract of Operations categories include: Marine Inspection Program; Boating Safety; Cadet and OC Training; Port Safety and Security; Public and International Affairs; Miscellaneous and Other (includes District Inspections, Operational Readiness Inspections, MLC Compliance (and other) Inspections, monthly personnel and material inspections, etc.); Operational Training (includes Operational Training portion of REFTRA); Reserve Training; and Bridge Administration. Within TMO, Operational Training is the largest single resource employment category. Operational training accounts for almost 10 days per ship per year on average.

2.2.3 Essential Multi-mission Employment - These are considered the minimum non-ATON operational requirements, based on identified service needs, to which ATON vessels are assigned. Abstract of Operations categories include: SAR (both vessel of opportunity response and dedicated standby); Domestic Icebreaking; Marine Environmental Response (WLBR and WLMR); and Marine Science Activities (eg. traditional NOAA buoy servicing requirements and International Ice Patrol). WLMRs and BUSL's would not be scheduled for SAR stand-by or NOAA buoy ops.

2.2.4 Other Multi-mission Employment - These are somewhat discretionary multi-mission requirements based on identified service need, which could be assigned to multi-mission ATON vessels with available time. Time in these categories is generally scheduled based on the need in a particular geographic area, but subject to re-allocation as necessary for "surge response" to primary mission employment categories. Abstract of Operations categories include: Enforcement of Laws and Treaties (ELT FISH-DOM, ELT FISH-FOR, ELT DRUGS, ELT MIGRANT, and ELT OTHER); Military Operations (MIL OPS, MIL TRA (includes Military Training portion of REFTRA), and MIL EX); and Cooperation with Other Agencies (FED, STATE, and LOCAL).

2.3 HISTORICAL RESOURCE HOUR EMPLOYMENT/REPLACEMENT TARGETS

The AOPS data provides the best description of how we have historically employed our buoy tenders. For this analysis, we are primarily interested in the resource hours expended. When using this data, however, we need to realize that the information reported may not be absolutely accurate. Even with fairly comprehensive guidelines for completing the Abstracts of Operations, variations occur in how different units report their employment. For example, some units may have reported resource hours employed in NOAA Buoy Operations as ATON hours instead of MSA hours. Sometimes variations also occur from year to year due to Program guidance from headquarters. For example, a few years ago units were encouraged to increase their reporting of ELT

involvement. Resource hours spent travelling from buoy to buoy may have been reported as ELT hours, even though the ATON work could not have been accomplished without those ELT resource hours. With these limitations in mind, we can review the historical data.

2.3.1 Seagoing Buoy Tenders - As shown in Figure 1, 58.8% of the total WLB resource hour employment has been in their primary employment categories (i.e. ATON). This is a slight increase

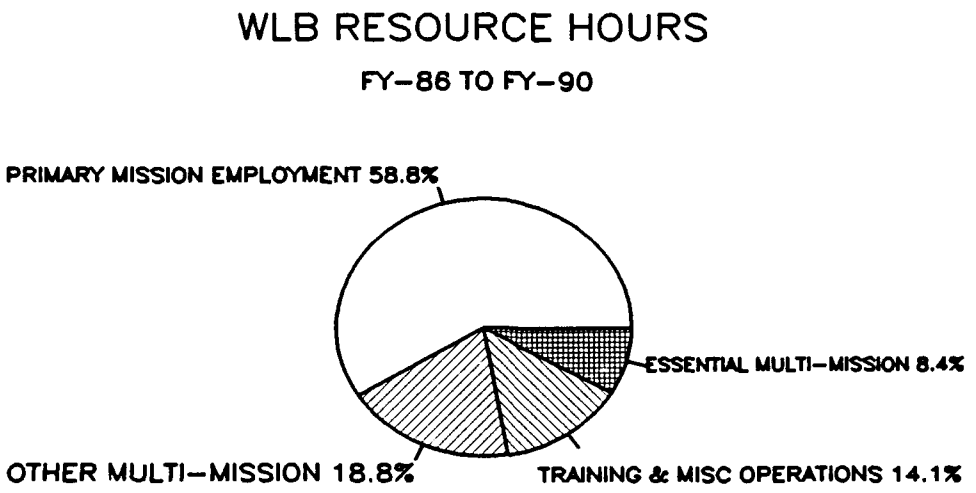

FIGURE 1.

since the previous study which found WLB's employed approximately 55% for ATON. This may be accounted for with the decommissioning of HOLLYHOCK and SAGEBRUSH and loss of MESQUITE. For example, just prior to decommissioning, SAGEBRUSH had been employed only 44% of the time in ATON.

The employment target indicated in the Sponsor's Requirements Document for the replacement seagoing buoy tender class (WLBR)is 60% for ATON. This acknowledges the multi-mission nature of the seagoing buoy tender fleet. Based on the AOPS historical data, the 60% ATON employment target is realistic. While multi-mission employment requirements for the WLBR will be discussed in detail in a later section, it is important to note the potential impact of this employment target approach. Since seagoing buoy tenders are designed to service aids to navigation, the numbers of WLBRs will be based on the number required to perform the ATON servicing mission. Even with a consistent 60% ATON employment level, if fewer WLBRs than current WLB's are required for the ATON mission, fewer total hours will be available for multi-mission employment.

2.3.2 Coastal Buoy Tenders - As shown in Figure 2 and Figure 3, the employment profiles of the two classes of coastal buoy

tenders are very similar. A review of the AOPS data for WLM133's and WLM157's for FY-86 through FY-90 shows some differences between the two classes in the distribution of resource hours in the non-primary-mission employment categories. These differences are

WLM.133 RESOURCE HOURS

FY-86 TO FY-90

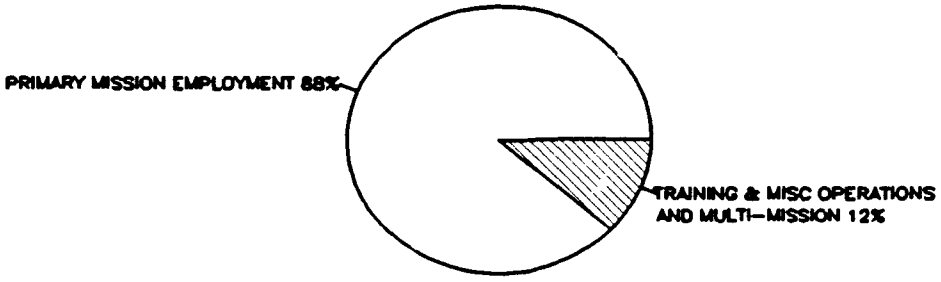

FIGURE 2.

WLM.157 RESOURCE HOURS

FY-86 TO FY-90

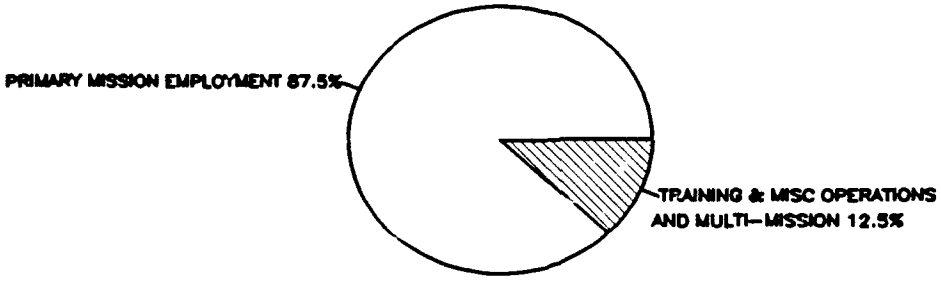

FIGURE 3.

minor, however. Since we consider the coastal buoy tenders to be "focused mission" resources and the ATON employment profiles are very similar, Figure 4 is an accurate reflection of the historical coastal buoy tender employment.

COMBINED WLM RESOURCE HOURS

FY-86 TO FY-90

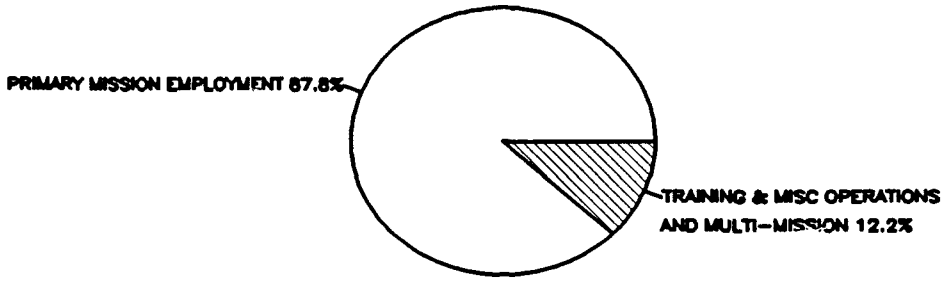

FIGURE 4.

The employment target indicated in the Sponsor's Requirements Document for the replacement coastal buoy tender class (WLMR)is 85% for ATON. This acknowledges the focused mission nature of the coastal buoy tender fleet. Based on the AOPS historical data, the 85% ATON employment target is realistic.

2.4 RESOURCE HOURS AND UNDERWAY DAYS

As reflected in the different sections of the AOPS reports, we talk about employment data both in terms of resource hours and in terms of days. Time spent in support of an employment category is reported in terms of hours. The number of underway days is reported in total, but not for any particular employment category. For example, a buoy tender may get underway to service the aids to navigation in a waterway. After transiting for a couple hours and working two hours servicing two buoys and a fixed structure light, it finds a person in the water clinging to the next buoy. It spends two hours rescuing the person (whose boat had sunk) and transporting the survivor in its RHIB to the closest town for medical attention. The buoy tender spends two hours cleaning up the small oil slick coming from the sunken boat and then returns to home port. The AOPS report for that day's work would reflect 6 resource hours for ATON, 2 for SAR, and 2 for MER (total 10 resource hours) and one underway day. As you can see, using only resource hours or only underway days would not give a full picture of our resource employment.

One measure of how our resources are used is to look at the ratio of total resource (underway) hours to total underway days. For example, a cutter which gets underway infrequently but for long trips would have a higher ratio than one which does many

shorter day-trips. Table 1 shows the average over 5 years of this ratio for our buoy tender fleet. These operational profiles reflect the shorter endurance of our coastal buoy tenders and the geographically concentrated nature of ATON servicing. In comparison, a medium endurance cutter involved in law enforcement patrols over a wide geographic area may average over 20 hours per underway day.

TABLE 1.

AVERAGE UNDERWAY HOURS PER UNDERWAY DAY FY-86 TO FY-90

	(low)	Average	(high)
WLM(133)	10.09 (D01)	11.16	12.59 (D08)
WLM(157)	8.92 (D01)	9.67	10.17 (D05)
WLB	12.78 (D11)	14.49	17.50 (D08)

This analysis is valuable to us in any type of modeling process - from our individual seat-of-the-pants heuristic models, to more complex computer simulations. For example, we know from the AOPS reports how many resource hours the average 180' WLB spent servicing Aids to Navigation in FY-86 to FY-90 (1069.76). Of the average total underway days in that same period (125.58), we can estimate the mumber of days spent servicing aids to navigation as 73.83 days. This is calculated by dividing ATON Resource Hours by Underway (Resource) Hours per Underway Day (1069.76 ÷ 14.49 = 73.83).

As with any data analysis tools, however, we must be aware of the limitations of this analysis. Since our buoy tender fleet provides resource hours for several Coast Guard employment categories, sometimes during the same day as described above, converting resource hours to days is valuable only for analytical purposes. It does not reflect the reality of multi-mission underway days. In addition, the operational profiles for the different missions are different, so the average resource hour per underway day in reality will vary by employment category. For example, the average WLB which does both ATON servicing and MLE patrols averaged 14.49 resource hours per underway day. If medium endurance cutters average over 20 resource hours per underway day, we would expect that WLB's would also have a higher resource hour per underway day for its MLE patrols than their 14.49 hour average. It would also follow that the average for servicing ATON would be lower than the 14.49 hour per day average.

2.5 OPERATIONAL PROFILES

Both the Seagoing Buoy Tender and the Coastal Buoy Tender Sponsor's Requirements Documents (SRD's) project an operational profile of 150 underway days for each ship of each class of replacement buoy tender. Table 2 shows the historical operational profiles for our buoy tender fleet.

TABLE 2.

BUOY TENDER OPERATIONAL PROFILES FY-86 TO FY-90

	UNDERWAY DAYS/YR	RESOURCE HRS/YR	ATON HRS/YR
WLM(133)	107.80	1357.70	1240.60
WLM(157)	127.00	1227.88	1074.80
WLB	125.58	1820.27	1069.76

Based on a review of this data, a target of 150 underway days per year for our replacement buoy tender fleet appears to be optimistic. We do expect, however, to see less maintenance time with the new fleet, due both to the age of the fleet and to the low maintenance design requirements in the SRD's.

Table 3 shows the projected replacement buoy tender operational profile which will be used in modeling the service force mix of replacement resources.

TABLE 3.

PROJECTED REPLACEMENT BUOY TENDER OPERATIONAL PROFILES

	UNDERWAY DAYS/YR	RESOURCE HRS/YR	ATON HRS/YR
WLMR	150	1500	1275
WLBR	150	2100	1260

Projected resource hours per year were calculated by multiplying the projected underway day target (150 days per year)

by 10 underway (resource) hours per underway day for the WLMR, and by 14 underway (resource) hours per underway day for the WLBR. The underway (resource) hours per underway day are based on the historical averages shown in Table 1, rounded to the nearest whole number. Projected ATON hours per year were calculated by multiplying the projected resource hours per year by the ATON employment targets (85% of resource hour employment for WLM's and 60% for WLBRs).

2.6 MULTI-MISSION EMPLOYMENT

Traditionally, we have considered employment in categories other than primary mission areas as "multi-mission" employment. This description does not adequately account for the resource hours expended by our buoy tenders, or any other cutters for that matter. As we have seen in our analysis of the AOPS data, some resource hours must be accounted for as TMO - resource hour employment generated by virtue of the fact that these are Coast Guard cutters. The remaining hours (after accounting for primary mission employment and TMO) are available to operational commanders for discretionary multi-mission employment.

The Mission Needs Statement indicates the multi-mission nature of the WLBR and the "focused mission" nature of the WLMR. It also indicates that the number of ships will be based on ATON requirements, not driven by multi-mission requirements. This means that relative employment levels in multi-mission areas should remain constant as a % of resource hours expended by buoy tenders. Total levels of multi-mission hours available will be a function of the number of ships. That is, fewer ships would mean less multi-mission employment available. The operational requirements for multi-mission employment of seagoing buoy tenders will therefore be one of the key inputs in developing the ATON Service Force Mix. Multi-mission scheduling for our seagoing buoy tenders is desired in order to provide surge capacity (for additional primary or essential multi-mission tasking), while otherwise keeping them fully employed. The 60% ATON target provides for this, regardless of the number of buoy tenders.

For WLMRs the combined resource hour employment target in the "TMO", "Essential multi-mission" and "Other multi-mission" categories is 15%. Historical employment of WLM's in these categories is 12.2%. Due to the relatively low percentage of time dedicated to multi-mission employment, this analysis considers WLM's and their replacements to be "targets of opportunity" for this employment. The slight increase in the target (15%) over the historical level (12.2%) will account for an increase of essential multi-mission employment due to the WLMRs Vessel of Opportunity Skimming System (VOSS) capabilities. Further analysis of non-primary mission resource hour employment for WLMRs was not conducted.

The WLB fleet resource hour employment from FY86 to FY90 averaged 14.1% in "TMO", 8.4% in "Essential multi-mission", and 18.8% in "Other multi-mission" categories. Table 4 shows the historical resource hour employment in these categories by district.

TABLE 4.

AVERAGE WLB RESOURCE HOUR EMPLOYMENT PER DISTRICT (FY-86 TO FY-90)

WLBR TARGET (%)	D01	D05	D07	D08	D09	D11	D13	D14	D17
PRIMARY (60%)	1031 (65%)	1002 (69%)	1297 (63%)	1232 (56%)	758 (50%)	1001 (53%)	1174 (68%)	996 (54%)	1249 (58%)
TMO (14%)	211 (13%)	148 (10%)	187 (9%)	314 (14%)	250 (16%)	257 (14%)	154 (9%)	199 (11%)	413 (19%)
ESSENTIAL (9%)	131 (8%)	48 (3%)	81 (4%)	278 (13%)	115 (8%)	224 (12%)	140 (8%)	231 (13%)	173 (8%)
OTHER (17%)	214 (13%)	249 (17%)	481 (24%)	361 (17%)	402 (26%)	396 (21%)	264 (15%)	411 (22%)	311 (15%)
TOTAL	1588 (100%)	1447 (100%)	2046 (100%)	2184 (100%)	1524 (100%)	1877 (100%)	1731 (100%)	1838 (100%)	2146 (100%)

2.7 MULTI-MISSION RESOURCE HOUR REQUIREMENTS

The "multi-mission" employment categories have been divided into two groups: "essential" and "other" (i.e. more discretionary). The primary employment targets of 60% ATON for WLBRs and 85% ATON for WLMRs are derived from historical averages, acknowledging the "multi-mission" nature of the WLBR and the "focused mission" nature of the WLMR, as well as "TMO" requirements. Within a fairly static fleet (by numbers of ships) the historical AOPS analysis is valid. It requires a closer look, however, when considering fleet replacement.

Historical multi-mission employment represents both geographic requirements and "vessel of opportunity" usage of buoy tenders. It is also important to recognize that geographic requirements may differ among districts (for example, District 1 will have greater DOM ICE requirements than District 7). To help project future multi-mission employment requirements, an attempt must be made to identify those geographic-specific requirements. In addition, new requirements and capabilities such as spilled

oil recovery may require a change in allocation of hours between "essential" and "other" multi-mission employment categories.

2.7.1 TMO, SAR and Domestic Icebreaking - As stated previously, employment in these non-primary mission categories is based both on geographic requirements and "vessel of opportunity" usage. It is impossible to distinguish between these types of employment based solely on review of the AOPS data. To make projections of the requirements for the WLBR fleet, some simplifying assumptions are required.

1. TMO is mostly a function of the resource itself and will remain near average historical levels per ship.

2. Projections of "essential" multi-mission employment will consider employment in SAR and Domestic Icebreaking as target of opportunity and will remain near historical levels per ship per district.

Table 5 shows the days per ship reserved from the non-primary mission employment target for TMO, Search and Rescue, and Domestic Icebreaking. TMO days were calculated by multiplying the SRD projected underway days (150) by the TMO percentage (14%). SAR and DOM ICE days were calculated by dividing each District's average (FY-86 to FY-90) resource hours per ship by that District's average underway (resource) hours per underway day. (See Appendix A.)

TABLE 5.

PROJECTED REPLACEMENT SEAGOING BUOY TENDER PER-SHIP REQUIREMENTS (DAYS)

	D01	D05	D07	D08	D09	D11	D13	D14	D17
TMO	21	21	21	21	21	21	21	21	21
SAR	3	3	2	2	3	3	2	10	4
DOM ICE	0	1	0	0	9	0	0	0	0

2.7.2 Marine Science Activities - Employment in MSA is primarily geographically based. In addition to International Ice Patrol responsibilities, the Coast Guard has agreements with NOAA to service their deep water moored weather data buoys and coastal marine automated network (C-MAN) stations. Many of these missions require seagoing buoy tenders' capabilities. Resource employment is coordinated with the NOAA Data Buoy Center (NDBC) and is commonly referred to as NDBC OPS. Table 6 shows the development of MSA projections in days per district.

TABLE 6.

PROJECTED WLBR MSA EMPLOYMENT (DAYS PER DISTRICT)

	D01[1]	D05[2]	D07[3]	D08	D09[4]	D11	D13	D14	D17[5]
HISTORICAL AVG (*)	19	2	9	24	5	27	6	17	7
NDBC (**) PROJECTION	11	11	14	21	27	15	34	23	18
DISTRICT PROJECTION	49	15	23	23	36	24	10	16	
TARGET	39	15	10	23	27	24	10	16	7

* SEE AOPS DATA APPENDIX A. CALCULATED BY DIVIDING AVERAGE TOTAL MSA HOURS IN EACH DISTRICT BY THE DISTRICT' AVERAGE UNDERWAY (RESOURCE) HOURS PER U/W DAY.

** NDBC PROJECTED DAYS FOR FY-92 IS USED AS A CHECK ON THE HISTORICAL AVERAGES AND DISTRICT PROJECTIONS. PROJECTIONS ARE FOR SCHEDULED VISITS AND DO NOT INCLUDE NEW STATION DEPLOYMENTS OR UNSCHEDULED SERVICING. THESE NUMBERS ARE THEREFORE CONSERVATIVE ESTIMATES, ALTHOUGH ALL SERVICING IS NOT ALWAYS PERFORMED BY SEAGOING BUOY TENDERS.

Notes to accompany Table 6.

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[1] District 1 estimates include 30 days International Ice Patrol previously done by USCGC EVERGREEN which was decommissioned in 3rd. QTR FY-90. G-NIO has validated the requirement for this mission for buoy tenders, but estimates an average of 20 days per year.

[2] Discrepancy between Historical Average and the NDBC and District projections believed to be due to units recording NDBC operations as ATON vs. MSA.

[3] Weighted toward Historical Average. In FY-91, the majority of NDBC requirements were accomplished by other than buoy tenders.

[4] Target weighted toward NDBC Requirements. District projection appears to be weighted toward FY91 employment, which was 300 hrs. more than FY90. Most NDBC employment in the Ninth District has been handled by WLB's. Note 2 also applies.

[5] District projection not yet provided.

2.7.3 Marine Environmental Response - Employment in MER is a combination of geographic requirements (spill response) and per-ship requirements (operational training and exercises). Historical data is an inadequate predictor due to changes in platform requirements and capabilities (e.g. built in Spilled Oil Recovery System (SORS)). Inputs on projected requirements were developed by the Districts in consultation with their local COTP's and MSO's. Commandant (G-MEP) has also reviewed these projections. Target reflects G-MEP inputs.

Table 7 shows the MER days per ship required from the non-primary mission employment target.

TABLE 7.

PROJECTED WLBR MER EMPLOYMENT (DAYS PER SHIP)

DISTRICT REQ'M'TS.	D01	D05	D07	D08	D09	D11	D13	D14	D17 (*)	TARGET
TRAINING	10	2	4	4	14	5	4	4		4
EXERCISES	5	2	2	1	7	5	4	1		2
EQUIPMENT CLEANING	1	2								1
TOTAL	16	6	6	5	21	10	8	5		7

(*) DISTRICT 17 INPUTS NOT YET RECEIVED

Table 8 shows the additional MER days per district required from the non-primary mission employment target.

TABLE 8.

ADDITIONAL PROJECTED WLBR MER EMPLOYMENT (DAYS PER DISTRICT)

DISTRICT REQ'M'TS.	D01	D05	D07	D08	D09	D11	D13	D14	D17 (*)
SPILL RESPONSE	2	0	2	5	7	12	7	14	
EQUIPMENT CLEANING	0	0	2	1	6	0	6	3	
TOTAL	2	0	4	6	13	12	13	17	
TARGET	8	8	6	6	8	6	6	6	11

(*) DISTRICT 17 INPUTS NOT YET RECEIVED

2.7.4 Other Multi-mission -- Employment in the "Other Multi-mission" categories can also be considered a combination of geographic requirements (e.g. fisheries or drug law enforcement patrol areas) and per-ship requirements (vessel of opportunity). For seagoing buoy tenders, these are the most discretionary employment categories. For example, if a hurricane or typhoon damaged the ATON system in a given OPAREA, the buoy tender assigned to restore the system may "buy" the time for this unscheduled servicing (surge response) from its "other multi-mission" schedule. Time for primary mission employment takes priority. These "other multi-mission" categories are, therefore, the most likely to be reduced if the multi-mission capacity of the buoy tender fleet is reduced. Identifying the operational requirements - what the Coast Guard needs or expects from the buoy tender fleet for these "other multi-mission" categories - is necessary for determining the ATON Service Force Mix.

Program inputs received from G-OP indicate minimal requirements for WLBR resource hours. There is no *requirement* for ELT employment. While the ELT Program benefits from seagoing buoy tender resource hours, the Program considers them as "vessels of opportunity". MILOPS employment projections are 5 days per WLBR per year. Cooperation with other agencies (COOP) was not discussed.

These inputs are at variance with historical data, indicating that the operational commanders sometimes use buoy tenders in ways not directly related to Program requirements. It is important to identify what the district commanders believe are buoy tender "other multi-mission" employment requirements. District Aids to Navigation offices were asked to provide projections of their district's requirements for "other multi-mission" resource hour employment. Coupled with historical averages and Program inputs, these projections can be used to help identify multi-mission requirements.

Table 9 shows the development of this information. All districts reported employment in these categories geographically (independent of the number of ships). In addition, the First District projects an *additional per-ship* requirement of 28 days per ship for MILOPS and 14 days per ship for COOP. For comparison purposes, these per-ship requirements were multiplied by the current number of WLB's to determine the per-district requirements.

Analysis of Table 9 shows that with the exception of Districts 1, 8, and 11, district projections for "Other Multi-mission" employment are lower than historical averages. These projections appear to be the district commander's best estimate of minimum "Other Multi-mission" requirements.

TABLE 9.

PROJECTED WLBR "OTHER MULTI-MISSION" EMPLOYMENT (DAYS PER DISTRICT)

	D01	D05	D07	D08	D09	D11	D13	D14	D17[6]
DISTRICT PROJECTION									
ELT	74	5	10	4	0	0	10	31	
MIL OPS	84	5	4	54	36	72	15	6	
COOP	42	5	4	4	14	10	5	4	
TOTAL	200	15	18	62	50	82	30	41	
PROGRAM PROJECTION									
TOTAL[7]	15	15	10	10	15	10	10	15	30
HISTORICAL AVG[8]									
ELT	12	6	71	25	125	30	16	71	79
MIL OPS	24	38	8	13	3	23	17	7	19
COOP	13	13	6	4	16	8	7	4	15
TOTAL	49	57	85	42	144	61	40	82	113

Notes to accompany Table 9.

[6] District input not yet received.

[7] 5 days/ship, multiplied by current number of ships for comparison.

[8] Calculated by dividing the FY-86 to FY-90 district average u/w (resource) hours per underway day into the average total resource hours for that district.

Table 10 combines historical AOPS averages with Program inputs and district projections to develop a comprehensive analysis of "Other Multi-mission" requirements for seagoing buoy tenders.

TABLE 10.

WLBR "OTHER MULTI-MISSION" REQUIREMENTS

	D01	D05	D07	D08	D09	D11	D13	D14	D17
DAYS PER DISTRICT									
ELT	12[9]	5	10	4	0[10]	0	10	31	79
COOP	13	5	4	4	6[11]	10[12]	5	4	15
TOTAL	25	10	14	8	6	10	15	35	94
DAYS/SHIP									
MIL OPS[13]	5	5	5	5[14]	5	10	5	5	5

Notes to accompany Table 10.

---

[9] Used historical average. District projection far exceeded average, and District Service Force Mix analysis was not received to validate inputs.

[10] D09 ELT projection is significantly below historical averages. This reflects fact that ELT Program has no need for WLB ELT time and therefore D09 seagoing buoy tenders will no longer be sent out of the Lakes for ELT.

[11] D09 Service Force Mix analysis states 3 WLBRs would be used, providing 7 days MIL OPS/COOP per ship, for a district total of 21 days. This is less than the district multi-mission projection, but more in line with historical AOPS averages. The 21 days was allocated here as 5 days MIL OPS per ship and 6 COOP per district.

[12] D11 District Service Force Mix analysis states 2 WLBRs Would provide a total of 530 "Other Multi-mission" hours. Divided by the District's average 12.78 u/w hours per u/w day = 41 days. If Q-Route Surveys are no longer required, D11 (oan) indicates 10 days/ship for MIL OPS plus 10 days for COOP would meet D11 "Other Multi-mission" requirements.

[13] Used Program inputs. No more Q-Route surveys anticipated. REFTRA hours provided in "Overhead". D11 req 10 days/ship; more exercises than average.

[14] D08 MIL OPS projection (Table 9) was higher than the historical average in order to include REFTRA which was previously recorded in the CG Overhead categories. Since historical average overhead is used for this study, D08 MIL OPS was changed to program input. (REFTRA included in CG Overhead).

Tables 11 and 12 combine the per-ship requirements, non-primary ission days available per ship, and per-district requirements to determine he number of replacement seagoing buoy tenders required to meet the dentified multi-mission requirements.

TABLE 11.

"VESSEL OF OPPORTUNITY" DAYS REQUIRED PER WLBR BY DISTRICT

	D01	D05	D07	D08	D09	D11	D13	D14	D17
DAYS/SHIP REQUIRED									
TMO[15]	21	21	21	21	21	21	21	21	21
SAR[16]	3	3	2	2	3	3	2	10	4
DOM ICE[17]	0	1	0	0	9	0	0	0	0
MER[18]	7	7	7	7	7	7	7	7	7
MIL OPS[19]	5	5	5	5	5	10	5	5	5
TOTAL/SHIP REQUIRED	36	37	35	35	45	41	35	43	37
DAYS/SHIP AVAILABLE[20]	60	60	60	60	60	60	60	60	60
DAYS/SHIP REMAIN[21]	24	23	25	25	15	19	25	17	23

otes to accompany Table 11.

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[5] From Table 5.

[6] From Table 5.

[7] From Table 5.

[8] G-MEP has reviewed the MER requirements. Values used in this Table are stimates based on G-MEP inputs (Table 7).

[9] MIL OPS is the only "Other Multi-mission" category with per-ship equirements. Values from Table 10.

[10] 150 day u/w day target (Table 3). 60% ATON target = 90 days. days emaining for overhead and multi-mission 150 - 90 = 60 days.

[11] Days/ship available minus total days/ship required.

TABLE 12.

GEOGRAPHIC DAYS REQUIRED BY DISTRICT[22]

	D01	D05	D07	D08	D09	D11	D13	D14	D17
DAYS/ DISTRICT REQUIRED									
MER[23]	8	8	6	6	8	6	6	6	11
MSA[24]	39	15	10	23	27	24	10	16	7
"OTHER"[25]	25	10	14	8	6	10	15	35	94
TOTAL	72	33	30	37	41	40	31	57	112
DAYS/SHIP REMAIN[26]	24	23	25	25	15	19	25	17	23
SHIPS PER DISTRICT[27]	3.0	1.4	1.2	1.5	2.7	2.1	1.2	3.4	4.9

Notes to accompany Table 12.

[22] Total days required per district is a function of the geographic requirements PLUS the "vessel of opportunity" days per ship required in that district.

[23] G-MEP has reviewed MER requirements. Values here are estimates based on inputs from G-MEP (Table 8).

[24] From Table 6.

[25] "Other Multi-mission" from Table 10.

[26] From Table 11.

[27] Calculated by dividing the total Days/District Required by Days per Ship Remaining.

2.8 FLEET MIX SCENARIOS

Tables 13, 14 and 15 present the information from Tables 11 and 12 for three sample WLBR mix scenarios. The shortfall in required non-primary mission days is allocated among employment categories as one possible indication of the impact of that shortfall. The shortfall is first apportioned to the "Other Multi-mission" employment categories; any remaining shortfall is then apportioned to the "Essential Multi-mission" categories.

TABLE 13.

SAMPLE NON-PRIMARY MISSION IMPACT - 19 WLBR FLEET MIX SCENARIO

	D01	D05	D07	D08	D09	D11	D13	D14	D17
WLBRs[29]	3	1	1	2	2	2	1	3	4
TMO	63	21	21	42	42	42	21	63	84
SAR	9	3	2	4	6	6	2	30	16
DOM ICE	0	1	0	0	18	0	0	0	0
MSA	39	15	10	23	27	24	10	16	7
MER	29	15	13	20	22	20	13	27	39
ELT	12	5	10	4	0	0	10	31	79
MIL OPS	15	5	5	10	10	20	5	15	20
COOP	13	5	4	4	6	10	5	4	15
TOTAL DAYS REQUIRED[30]	180	70	65	107	131	124	66	186	260
TOTAL DAYS PROVIDED[31]	180	60	60	120	120	120	60	180	240
TOTAL DAYS SHORTFALL	0	-10	-5	+13	-11	-4	-6	-6	-20
SHORTFALL APPORTIONED BY EMPLOYMENT CATEGORY[32]									
SAR									
DOM ICE									
MSA									
MER									
ELT		-4	-3	+3			-3	-4	-14
MIL OPS		-3	-1	+7	-7	-2	-1	-2	-3
COOP		-3	-1	+3	-4	-2	-2		-3

TABLE 14.

SAMPLE NON-PRIMARY MISSION IMPACT - 16 WLBR FLEET MIX SCENARIO

	D01	D05	D07	D08	D09	D11	D13	D14	D17
WLBRs[29]	2	1	1	1	2	1	1	3	4
TMO	42	21	21	21	42	21	21	63	84
SAR	6	3	2	2	6	3	2	30	16
DOM ICE	0	1	0	0	18	0	0	0	0
MSA	39	15	10	23	27	24	10	16	7
MER	22	15	13	13	22	13	13	27	39
ELT	12	5	10	4	0	0	10	31	79
MIL OPS	10	5	5	5	10	10	5	15	20
COOP	13	5	4	4	6	10	5	4	15
TOTAL DAYS REQUIRED[30]	144	70	65	72	131	81	66	186	260
TOTAL DAYS PROVIDED[31]	120	60	60	60	120	60	60	180	240
TOTAL DAYS SHORTFALL	-24	-10	-5	-12	-11	-21	-6	-6	-20
SHORTFALL APPORTIONED BY EMPLOYMENT CATEGORY[32]									
SAR									
DOM ICE									
MSA									
MER						-1			
ELT	-8	-4	-3	-4			-3	-4	-14
MIL OPS	-7	-3	-1	-4	-7	-10	-1	-2	-3
COOP	-9	-3	-1	-4	-4	-10	-2		-3

TABLE 15.

SAMPLE NON-PRIMARY MISSION IMPACT - 12 WLBR FLEET MIX SCENARIO

	D01	D05	D07	D08	D09	D11	D13	D14	D17
WLBRs[29]	1	1	1	0	2	1	0	2	4
CODB	21	21	21	0	42	21	0	42	84
SAR	3	3	2	0	6	3	0	20	16
DOM ICE	0	1	0	0	18	0	0	0	0
MSA	39	15	10	23	27	24	10	16	7
MER	15	15	13	6	22	13	6	20	39
ELT	12	5	10	4	0	0	10	31	79
MIL OPS	5	5	5	0	10	10	0	10	20
COOP	13	5	4	4	6	10	5	4	15
TOTAL DAYS REQUIRED[30]	108	70	65	37	131	81	31	143	260
TOTAL DAYS PROVIDED[31]	60	60	60	0	120	60	0	120	240
TOTAL DAYS SHORTFALL	-48	-10	-5	-37	-11	-21	-31	-23	-20
SHORTFALL APPORTIONED BY EMPLOYMENT CATEGORY[32]									
SAR	-2								
DOM ICE									
MSA	-9			-23			-10		
MER	-7			-6		-1	-6		
ELT	-12	-4	-3	-4			-10	-15	-14
MIL OPS	-5	-3	-1		-7	-10		-7	-3
COOP	-13	-3	-1	-4	-4	-10	-5	-1	-3

Notes to accompany Tables 13, 14 and 15.

[28] Only WLBRs are considered in these scenarios. The numbers of WLMRs will vary, but impact on multi-mission requirements is not considered since these are focused-mission ships and their multi-mission employment is low.

[29] Estimated geographic distribution of WLBRs for the given mix scenario.

[30] Calculated as: # of WLBRs multiplied by Days/Ship Required (Table 11) PLUS Total Geographic Days Required (Table 12). In Table 13, for example, District 1 MER is calculated as: (3 x 7) + 8 = 29.

[31] Total Days/Ship Available (Table 11) multiplied by # of WLBRs.
For example, District 1 is calculated as: 60 x 3 = 180.

[32] The shortfall is allocated to each employment category based on the ratio of the days in that category to the total days in the employment category grouping.
In Table 13, for example, D17 shortfall allocation is calculated:

SHORTFALL = 20 Days
ELT + MIL OPS + COOP = Total = 79 + 20 + 15 = 114
Shortfall Allocation to ELT = (ELT/Total) x Shortfall
= (79/114) x 20 = 13.86 = 14
Shortfall Allocation to MIL OPS = (MIL OPS/Total) x Shortfall
= (20/114) x 20 = 3.5 = 3
Shortfall Allocation to COOP = (COOP/Total) x Shortfall
= (15/114) x 20 = 2.6 = 3

3.0 PLANNING FACTORS DEVELOPMENT

As discussed in Section 1.2, several input parameters, or Planning Factors, are critical to the effective employment and support of the replacement buoy tender fleet. In Section 2.0, we examined buoy tender employment. Multi-mission employment projections for WLBRs were analyzed in terms of:

1. Historical use of the existing fleet, from review of the Abstract of Operations Data (FY-86 to FY-90)

2. District (oan) projections for use of future fleet capabilities

3. Headquarters program inputs on projected fleet requirements

Historical data and district projections of resource employment differ from some program projected requirements, specifically in the ELT, MIL OPS and COOP employment categories.

At the direction of G-CCS, a working group of Program Directors' representatives was convened to address these differences and the impacts of the possible mix scenarios on engineering and personnel support.

3.1 WORKING GROUP

The working group included representatives of G-CPA, G-E, G-M, G-N, G-O, G-P and G-R. Based on the tasking from G-CCS, this working group met to:

1. Review/validate G-N's analysis of projected multi-mission employment levels (Section 2.0 of this report)

2. Review differences between projected employment levels and program projected requirements

3. Recommend multi-mission employment capacity for replacement seagoing buoy tender fleet (i.e. the number of ships each program could accept in terms of need for WLBR multi-mission employment).

In addition to multi-mission employment considerations, Program Directors identified other key input parameters which must be accounted for in developing the Service Force Mix for the replacement buoy tender fleet.

3.2 PROGRAM DIRECTORS' CONSIDERATIONS

Each Operating Program Director's representative reviewed G-N's analysis of projected multi-mission employment of the buoy tender fleet from their Program's perspective. In addition, Support Program Directors' representatives reviewed the projected

3.2 PROGRAM DIRECTORS' CONSIDERATIONS (CON'T)

operational profiles for impact on personnel, training and engineering support requirements. The following is a summary of each Program Director's findings.

3.2.1 Office of Engineering, Logistics and Development - The G-E representative indicated either the nineteen or sixteen WLBR fleet mix scenario would have an impact on engineering support considerations. Specific concerns include the need to provide sufficient shore-based maintenance support billets in personnel levels requested for the replacement fleet. While still under study, the number of billets required for maintenance and crew support may range from six to ten per WLMR. Also of concern is the reduction of afloat engineering billets.

3.2.2 Office Marine Safety, Security and Environmental Protection - The G-M representative indicated that the resource days spelled out in Section 2.7.3 are days that must be set aside for the replacement buoy tenders in order to meet MEP requirements. These days are critical to plan for pollution response and also to meet the intent of the Oil Pollution Act of 1990 § 4203 for replacement buoy tenders to have readily available oil skimming capabilities. The resource days identified as "vessel of opportunity" days (for training and exercises) are also necessary for response preparation, not only for the buoy tender itself but also for overall Coast Guard oil spill response preparedness.

The G-M Program Director states that either the nineteen or sixteen WLBR fleet mix scenario would meet the mission needs for Marine Environmental Protection. The Marine Environmental Protection program needs are a multi-mission capability that the WLBRs and WLMRs must have.

3.2.3 Office of Navigation Safety and Waterway Services - As the project sponsor, the G-N Program Director was represented by three separate divisions. Each division's representative addressed concerns related to their areas of responsibility.

The Search and Rescue Division representative supported the SAR analysis, projecting continuation of the "vessel of opportunity" employment in SAR for WLBRs and WLMRs. Concern was expressed that operational commanders require a significant "high readiness" SAR standby role for the current WLBRs. As the district's only heavy weather offshore resource, SAR readiness requirements should be considered in determining the geographic distribution of WLBRs.

The Ice Operations Division representative validated the domestic icebreaking employment levels, increasing the number of days in District Nine (+3 days/ship) and deleting the requirement (-1 day/ship) for District Seventeen. He also validated the International Ice Patrol requirement for District One.

3.2.3 Office of Navigation Safety and Waterway Services (Con't) - The Short Range Aids to Navigation Division representatives reported that based on preliminary results from exercising the Aids to Navigation Service Force Mix Decision Support System, the Aids to Navigation mission could successfully be accomplished with a service force mix that includes 16 WLBRs. While as few as 12 WLBRs (with a commensurate increase in the number of WLMRs) could accomplish all routine ATON servicing requirements, this would not provide adequate geographic distribution for surge response requirements. Surge response includes unusually heavy ATON servicing requirements caused by severe ice seasons or hurricanes. It also includes emergency discrepancy or oil pollution response beyond normally assigned operating areas to meet operational requirements when the responsible WLBRs are in maintenance or training status. Responsible fleet management requires a minimum of 16 WLBRs.

A reduction in the number of ships in the buoy tender fleet will impact the performance of operational and administrative requirements usually performed by a ship's crew in inport operations status. For example, many discrepancies are responded to by a team of personnel from a ship, using either the ship's small boat or a station boat, while the ship is moored. WAMS studies are also conducted by ship personnel. In ports or geographic regions with fewer replacement ships, additional buoy boats and/or billets must be provided to augment ANTS, stations and groups for discrepancy response. Billets must also be provided to district staffs to accomplish the waterways management functions lost with the reductions.

3.2.4 Office of Law Enforcement and Defense Operations - The G-O representative indicated that the program has no identified need for scheduled WLBR ELT employment. However, the employment levels in the Section 2.7.4 analysis are the best estimate of how the WLBRs may actually be employed by operational commanders. The numbers of WLBRs should not be based on the projected ELT employment levels.

Based on the above analysis, the G-O Program Director can accept the shortfall in program days identified in either the 19 WLBR or 16 WLBR fleet mix scenario.

3.2.5 Office of Personnel and Training - The G-P representative indicated that any replacement fleet mix scenario will have significant impact on the workforce due to the projected numbers of billets and pay grade/rating distribution. Specific concerns include the decrease in afloat CWO billets, afloat training billets, junior officer afloat opportunities, and afloat non-rate pool. Projected increases in E-8 billets could pose a long-term problem with the E-8 cap. Concern was also expressed that the reduced crewing levels specified will require increased emphasis on "pre-arrival" training. This may require an increase in the General Detail percentage allocated for each ship. In addition, shore based maintenance support billets need to be included in personnel levels requested for the replacement fleet.

3.2.5 Office of Personnel and Training (Con't) - The G-P Program Director states that the fleet mix scenario which includes 16 WLBRs and 14 WLMRs is acceptable if the above concerns are considered. With the phased introduction of the replacement fleet, these workforce issues can be effectively managed.

3.2.5 Office of Readiness and Reserve - The G-R representative supports the five days per year per WLBR figure used in the analysis for MIL OPS as previously provided by G-ODO. The Navy no longer supports the Q-Route mission and can find no credible threat for continuing to fund this area of operations. Projections indicate that by the time the replacement buoy tender fleet is in operation, MARDEZLANT will no longer require this mission. Additionally, reduced emphasis on major FTXs involving WLBRs is expected.

The G-R Program Director supports a fleet mix scenario which calls for at least 18 WLBRs which will best meet projected military utilization rates. However, it is recognized that the increased cost for providing more WLBRs than required for the primary mission capability (ATON) is probably unsupportable.

3.3 PLANNING FACTORS

The Mission Needs Statements, Sponsor's Requirements Documents, Circulars of Requirements, and Coast Guard policy and operational directives all provide guidance for the effective employment and support of the replacement buoy tender fleet. Based on this guidance and input from cognizant Program Directors, several key input parameters, or planning factors, have been identified. Planning factors used in this process which impact on the multi-mission employment considerations and engineering and personnel support requirements include:

1. Employment targets established in the Sponsor's Requirements Documents remain valid.

2. WLMRs will be focused-mission resources and WLBRs will be multi-mission.

3. Marine Environmental Protection is an essential multi-mission requirement.

4. Both the WLBR and WLMR will operate with reduced crewing levels (as compared with the existing fleet). The WLMR will be minimally crewed for operations.

   (a) Shore-based maintenance support billets must be provided.

   (b) Additional billets to augment aids to navigation teams, groups and district staffs must be provided to replace discrepancy response capabilities and waterways management functions lost with the reduction of ships.

3.3 PLANNING FACTORS (CON'T)

(c) Billets must be included in the General Detail to provide pre-arrival training to ensure assigned crew members arrive fully qualified. This may require an increase in the General Detail percentage allocated to each ship.

5. The analysis described in section 2.0 of this report accurately reflects Coast Guard WLBR multi-mission requirements and employment projections.

4.0 CONCLUSION

We have identified in our Mission Needs Statement for the Seagoing and Coastal Buoy Tender Replacement Project that the WLBRs will be "multi-mission" and the WLMRs will be "focused mission". Based on traditional employment of these resources, this means that the WLBR will spend 60% of its resource hours on aids to navigation and the WLMR will spend 85% of its resource hours on aids to navigation. Within these guidelines, the total number of ships required will be based on ATON servicing requirements. The amount of multi-mission employment available from the buoy tender fleet will depend on the number of WLBRs in the ATON service force mix. The analysis in this report was conducted to identify the multi-mission employment capacity required from the buoy tender fleet to ensure that the number of WLBRs provided in the service force mix would meet these minimum, baseline requirements.

At the direction of the Chief of Staff, a working group of cognizant Program Directors' representatives was convened to review the multi-mission requirements analysis and to identify any other input parameters critical to effective employment and support of the replacement buoy tender fleet. The planning factors identified in section 3.3 reflect the Program Directors' considerations.

Based on the multi-mission analysis and Program Directors' review, 16 WLBRs is the recommended baseline, or minimum, requirement. Fewer WLBRs would result in an unacceptable shortfall in essential multi-mission capacity. It would also provide an unacceptable level of ATON support due to lack of sufficient geographic distribution for surge response capabilities. While 3 additional WLBRs (with a commensurate decrease in WLMRs) would provide more multi-mission capacity to accomplish identified requirements, it does not appear to be a cost-effective use of resources. The shortfall in multi-mission employment capacity provided by 16 WLBRs is acceptable to the Program Directors; alternative resources such as patrol boats and medium endurance cutters will be considered by Program Directors to overcome any operational shortfalls as required.

The results of the multi-mission capacity analysis and review by the Program Directors were provided to the Commandant of the Coast Guard in a decision briefing on 27 February 1992. In a decision memo from G-N, on 12 March 1992 the Commandant approved the planning factors (identified in section 3.0 of this report) and determined that the multi-mission capacity provided by 16 WLBRs is the baseline multi-mission requirement for developing the Aids to Navigation Service Force Mix. A copy of this decision memo is included in Appendix B to this report.

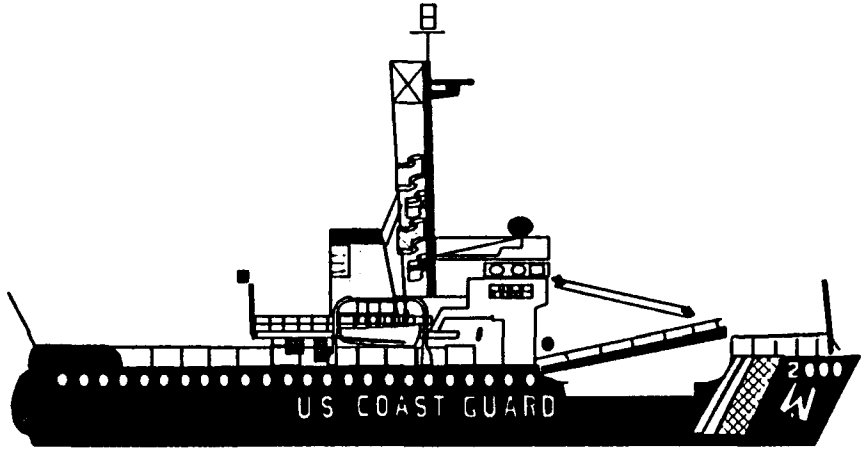
APPENDIX A

ABSTRACTS OF OPERATIONS SUMMARY SPREADSHEETS

FY86 – FY90

US COAST GUARD BUOY TENDERS

Abstract of Operations Data



Summary Spreadsheets

FY86 – FY 90

Prepared by G–NSR–4 12 July 1991

/WLM ABSTRACT DATA FY86 - FY90

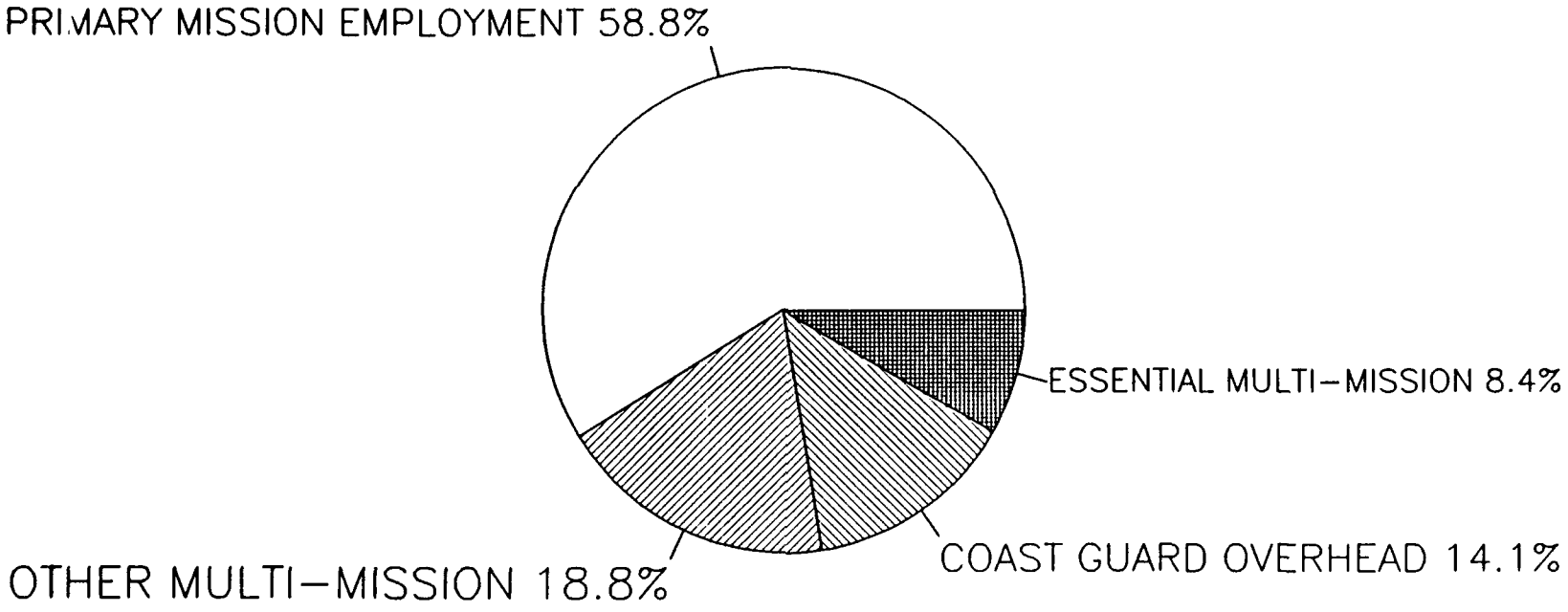
CUTTER: WLB.ALL DISTRICT: ALL
AREA: LANT & PAC TYPE: WLB
REGION: ALL CLASS: 180 &175

	FY-86		FY-87		FY-88		FY-89		FY-90	
	RESOURCE HOURS	I/O HOURS	RES HRS	I/O HRS	RES HRS	I/O HRS	RES HRS	I/O HRS	RES HRS	I/O HRS
PRIMARY MISSION EMPLOYMENT										
ATON	29639	7415	28265	7775	30899	6999	32289	5880	29902	6176
RADNAV	9	11	54	35	114	16	94	0	182	0
TOTAL	29648	7426	28319	7810	31013	7015	32383	5880	30084	6176
COAST GUARD OVERHEAD										
MIO	0	0	0	0	0	0	0	2	10	5
RBS	0	3	0	0	0	1	126	49	5	22
CADET/OC	57	73	406	230	501	796	277	60	347	117
PSS	32	7	143	138	136	5	34	35	48	10
PIA	250	432	446	688	482	772	506	500	601	663
MISC	3017	1269	2571	1472	1667	1234	1990	1601	2593	1208
OP TRA	3837	4661	3738	5178	4823	8151	4101	5766	3378	4798
RESERVE	0	600	40	849	65	229	98	401	26	191
BRIDGE	0	0	0	0	0	0	0	112	0	0
TOTAL	7193	7045	7344	8555	7674	11188	7132	8526	7008	7014
ESSENTIAL MULTI-MISSION										
SAR	1270	80	1500	79	1317	100	1293	159	1594	133
DOM ICE	106	0	268	74	27	8	574	7	1155	8
MER	48	88	168	9	195	16	3032	164	715	83
MSA	837	105	1756	151	1554	159	1921	109	2220	195
TOTAL	2261	273	3692	313	3093	283	6820	439	5684	419
OTHER MULTI-MISSION										
ELT (ALL)	10085	278	8174	130	7069	474	3464	169	2874	148
MIL OPS	1228	277	2610	496	2556	782	2497	553	1801	428
COOP (ALL)	1613	203	1490	141	1106	212	824	194	958	92
TOTAL	12926	758	12274	767	10731	1468	6785	916	5633	668
TOTAL U/W (RESOURCE) HOURS	52028		51629		52511		53120		48409	
TOTAL U/W DAYS	3608		3613		3689		3558		3311	
U/W HOURS PER U/W DAY	14.42018		14.29		14.23		14.93		14.62	
HIGH READINESS DAYS	234		193		195		208		110	
TOTAL INPORT OPS HOURS		15502		17445		19954		15761		14277
TOTAL INPORT OPS DAYS		1281		1395		1516		1315		1113
INPORT OPS HOURS PER DAY		12.10148		12.51		13.16		11.99		12.83
ATON INPORT OPS DAYS		613.6438		624.5		533		490.6		481.5
STANDBY DAYS	1939		2049		2059		1939		1842	
MAINTENANCE DAYS	3523		3335		2998		3200		3479	
TOTAL DAYS ACCOUNTED FOR	10585		10585		10457		10220		9855	
RESOURCE YEARS ACCOUNTED FOR	29		29		28.57		28		27	

CUTTER: WLB.ALL	DISTRICT: ALL	5-YR TOTAL		5-YR AVG	
AREA: LANT & PAC	TYPE: WLB	RES	I/O	RES	I/O
REGION: ALL	CLASS: 180 &175	HRS	HRS	HRS	HRS
PRIMARY MISSION EMPLOYMENT					
ATON		150994	34245	1066.56	241.8927
RADNAV		453	62	3.199807	0.4379427
TOTAL		151447	34307	1069.7598	242.33064
COAST GUARD OVERHEAD					
MIO		10	7	0.0706359	0.0494451
RBS		131	75	0.9253305	0.5297694
CADET/OC		1588	1276	11.216983	9.0131429
PSS		393	195	2.7759915	1.3774004
PIA		2285	3055	16.140307	21.579272
MISC		11835	6784	83.618798	47.919406
OP TRA		19877	28554	140.40301	201.6938
RESERVE		229	2270	1.6175625	16.034353
BRIDGE		0	112	0	0.7911223
TOTAL		36351	42328	256.76862	298.98771
ESSENTIAL MULTI-MISSION					
SAR		6974	551	49.261488	3.892039
DOM ICE		2130	97	15.04545	0.6851684
MER		4158	360	29.370414	2.542893
MSA		8288	719	58.543047	5.0787224
TOTAL		21550	1727	152.2204	12.198823
OTHER MULTI-MISSION					
ELT (ALL)		31666	1199	223.67569	8.4692464
MIL OPS		10692	2536	75.523922	17.913268
COOP (ALL)		5991	842	42.317977	5.9475441
TOTAL		48349	4577	341.51759	32.330059
TOTAL U/W (RESOURCE) HOURS		257697		1820.2664	
TOTAL U/W DAYS		17779		125.5836	
U/W HOURS PER U/W DAY		14.49		14.49	
HIGH READINESS DAYS		940		6.6397761	
TOTAL INPORT OPS HOURS			82939		585.84723
TOTAL INPORT OPS DAYS			6620		46.760977
INPORT OPS HOURS PER DAY			12.53		12.53
ATON INPORT OPS DAYS			2738.31		19.34
STANDBY DAYS		9828		69.420978	
MAINTENANCE DAYS		16535		116.79649	
TOTAL DAYS ACCOUNTED FOR		51702		365.20181	
RESOURCE YEARS ACCOUNTED FOR		141.57104			

WLB RESOURCE HOURS

FY–86 TO FY–90 AVERAGE



SUMMARY DATA FOR DISTRICT: ALLCOGARD TYPE: WLB CLASS: 180

	CUTTER: LANTAREAWLB 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS	CUTTER: PACAREA.WLB 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS
PRIMARY MISSION EMPLOYMENT								
ATON	77186	15924	1008.03	207.96	73808	18321	1135.51	281.86
RADNAV	109	53	1.42	0.76	344	4	5.29	0.06
TOTAL	77295	15982	1009.45	208.72	74152	18325	1140.80	281.92
COAST GUARD OVERHEAD								
MIO	0	0	0.00	0.00	10	7	0.15	0.11
RBS	126	0	1.65	0.00	5	75	0.08	1.15
CADET/OC	788	546	10.29	7.13	800	730	12.31	11.23
PSS	46	3	0.60	0.04	347	192	5.34	2.95
PIA	1007	1566	13.15	20.45	1278	1489	19.66	22.91
MISC	5560	4392	72.61	57.36	6278	2392	96.58	36.80
OP TRA	9329	13963	121.83	182.35	10548	14591	162.28	224.48
RESERVE	19	647	0.25	8.45	210	1623	3.23	24.97
BRIDGE	0	112	0.00	1.46	0	0	0.00	0.00
TOTAL	16875	21229	220.38	277.25	19476	21099	299.63	324.60
ESSENTIAL MULTI-MISSION								
SAR	2632	65	34.37	0.85	4342	486	66.80	7.48
DOM ICE	1778	91	23.22	1.19	352	6	5.42	0.09
MER	533	108	6.96	1.41	3625	252	55.77	3.88
MSA	4310	380	56.29	4.96	3978	339	61.20	5.22
TOTAL	9253	644	120.84	8.41	12297	1083	189.18	16.66
OTHER MULTI-MISSION								
ELT (ALL)	16774	664	219.06	8.67	14892	535	229.11	8.23
MIL OPS	5968	1480	77.94	19.33	4724	1056	72.68	16.25
COOP (ALL)	3509	397	45.83	5.18	2482	445	38.18	6.85
TOTAL	26251	2541	342.83	33.18	22098	2036	339.97	31.32
TOTAL U/W (RESOURCE) HOURS	129674		1693.51		128023		1969.58	
TOTAL U/W DAYS	9269		121.05		8510		130.92	
U/W HOURS PER U/W DAY	13.99		13.99		15.04		15.04	
HIGH READINESS DAYS	628		8.2015343		312		4.8	
TOTAL INPORT OPS HOURS		40396		527.56		42543		654.51
TOTAL INPORT OPS DAYS		3079		40.21		3541		54.48
INPORT OPS HOURS PER DAY		13.12		13.12		12.01		12.01
ATON INPORT OPS DAYS		1218.15		15.91		3525.25		23.47
STANDBY DAYS	5466		71.38		4362		67.11	
MAINTENANCE DAYS	9522		124.36		7013		107.89	
TOTAL DAYS ACCOUNTED FOR	27964		365.20		23738		365.20	
RESOURCE YRS ACCOUNTED FOR	76.571038				65			

SUMMARY DATA FOR DISTRICT: ALLCOGARD TYPE: WLB CLASS: 180

SUMMARY FY86 THROUGH FY90

	5 YEAR TOTALS RESOURCE HOURS	5 YEAR TOTALS I/O HOURS	5 YEAR AVERAGE RESOURCE HOURS	5 YEAR AVERAGE I/O HOURS
PRIMARY MISSION EMPLOYMENT				
ATON	150994	34245	1066.56	241.89
RADNAV	453	62	3.20	0.44
TOTAL	151447	34307	1069.76	242.33
COAST GUARD OVERHEAD				
MIO	10	7	0.07	0.05
RBS	131	75	0.93	0.53
CADET/OC	1588	1276	11.22	9.01
PSS	393	195	2.78	1.38
PIA	2285	3055	16.14	21.58
MISC	11838	6784	83.62	47.92
OP TRA	19877	28554	140.40	201.69
RESERVE	229	2270	1.62	16.03
BRIDGE	0	112	0.00	0.79
TOTAL	36351	42328	256.77	298.99
ESSENTIAL MULTI-MISSION				
SAR	6974	551	49.26	3.89
DOM ICE	2130	97	15.05	0.69
MER	4158	360	29.37	2.54
MSA	8288	719	58.54	5.08
TOTAL	21550	1727	152.22	12.20
OTHER MULTI-MISSION				
ELT (ALL)	31666	1199	223.68	8.47
MIL OPS	10692	2536	75.52	17.91
COOP (ALL)	5991	842	42.32	5.95
TOTAL	48349	4577	341.52	32.33
TOTAL U/W (RESOURCE) HOURS	257697		1820.27	
TOTAL U/W DAYS	17779		125.58	
U/W HOURS PER U/W DAY	14.49		14.49	
HIGH READINESS DAYS	940		6.6397761	
TOTAL INPORT OPS HOURS		82939		585.85
TOTAL INPORT OPS DAYS		6620		46.76
INPORT OPS HOURS PER DAY		12.53		12.53
ATON INPORT OPS DAYS		2738.31		19.34
STANDBY DAYS	9828		69.42	
MAINTENANCE DAYS	16535		116.80	
TOTAL DAYS ACCOUNTED FOR	51702		365.20	
RESOURCE YRS ACCOUNTED FOR	141.57104			

SUMMARY DATA FOR DISTRICT: LANTAREA TYPE: WLB CLASS: 180

PRIMARY MISSION EMPLOYMENT	CUTTER: D01WLB180 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS	CUTTER: D05WLB180 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS
ATON	15353	2877	1023.53	191.80	15035	3358	1002.33	223.87
RADNAV	109	56	7.27	3.73	0	2	0.00	0.13
TOTAL	15462	2933	1030.80	195.53	15035	3360	1002.33	224.00
COAST GUARD OVERHEAD								
MIO	0	0	0.00	0.00	0	0	0.00	0.00
RBS	0	0	0.00	0.00	0	0	0.00	0.00
CADET/OC	528	534	35.20	35.60	29	0	1.93	0.00
PSS	38	3	2.53	0.20	8	0	0.53	0.00
PIA	41	140	2.73	9.33	52	118	3.47	7.87
MISC	924	1336	61.60	89.07	874	883	58.27	58.87
OP TRA	1619	3745	107.93	249.67	1260	2300	84.00	153.33
RESERVE	19	647	1.27	43.13	0	0	0.00	0.00
BRIDGE	0	0	0.00	0.00	0	112	0.00	7.47
TOTAL	3169	6405	211.27	427.00	2223	3413	148.20	227.53
ESSENTIAL MULTI-MISSION								
SAR	630	7	42.00	0.47	538	10	35.87	0.67
DOM ICE	0	0	0.00	0.00	82	79	5.47	5.27
MER	114	49	7.60	3.27	2	1	0.13	0.07
MSA	1227	75	81.80	5.00	100	10	6.67	0.67
TOTAL	1971	131	131.40	8.73	722	100	48.13	6.67
OTHER MULTI-MISSION								
ELT (ALL)	796	41	53.07	2.73	407	59	27.13	3.93
MIL OPS	1587	237	105.80	15.80	2475	571	165.00	38.07
COOP (ALL)	834	52	55.60	3.47	848	121	56.53	8.07
TOTAL	3217	330	214.47	22.00	3730	751	248.67	50.07
TOTAL U/W (RESOURCE) HOURS	23819		1587.93		21710		1447.33	
TOTAL U/W DAYS	1831		122.07		1670		111.33	
U/W HOURS PER U/W DAY	13.01		13.01		13.00		13.00	
HIGH READINESS DAYS	136		9.0666667		224		14.933333	
TOTAL INPORT OPS HOURS		9799		653.27		7624		508.27
TOTAL INPORT OPS DAYS		695		46.33		660		44.00
INPORT OPS HOURS PER DAY		14.10		14.10		11.55		11.55
ATON INPORT OPS DAYS		208.02		13.87		290.87		19.39
STANDBY DAYS	1067		71.13		893		59.53	
MAINTENANCE DAYS	1749		116.60		2031		135.40	
TOTAL DAYS ACCOUNTED FOR	5478		365.20		5478		365.20	
RESOURCE YRS ACCOUNTED FOR	15				15			

SUMMARY DATA FOR DISTRICT: LANTAREA TYPE: WLB CLASS: 180

	CUTTER: D07WLB180 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS	CUTTER: D08WLB180 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS
PRIMARY MISSION EMPLOYMENT								
ATON	16301	1957	1296.71	155.68	12316	1341	1231.60	134.10
RADNAV	0	0	0.00	0.00	0	0	0.00	0.00
TOTAL	16301	1957	1296.71	155.68	12316	1341	1231.60	134.10
COAST GUARD OVERHEAD								
MIO	0	0	0.00	0.00	0	0	0.00	0.00
RBS	0	0	0.00	0.00	0	0	0.00	0.00
CADET/OC	227	12	18.06	0.95	0	0	0.00	0.00
PSS	0	0	0.00	0.00	0	0	0.00	0.00
PIA	60	69	4.77	5.49	27	127	2.70	12.70
MISC	1120	828	89.09	65.87	238	644	23.80	64.40
OP TRA	939	972	74.70	77.32	2875	3309	287.50	330.90
RESERVE	0	0	0.00	0.00	0	0	0.00	0.00
BRIDGE	0	0	0.00	0.00	0	0	0.00	0.00
TOTAL	2346	1881	186.62	149.63	3140	4080	314.00	408.00
ESSENTIAL MULTI-MISSION								
SAR	361	12	28.72	0.95	320	0	32.00	0.00
DOM ICE	0	0	0.00	0.00	0	0	0.00	0.00
MER	0	0	0.00	0.00	379	13	37.90	1.30
MSA	662	63	52.66	5.01	2082	217	208.20	21.70
TOTAL	1023	75	81.38	5.97	2781	230	278.10	23.00
OTHER MULTI-MISSION								
ELT (ALL)	5072	108	403.47	8.59	2143	91	214.30	9.10
MIL OPS	574	200	45.66	15.91	1101	432	110.10	43.20
COOP (ALL)	399	28	31.74	2.23	362	53	36.20	5.30
TOTAL	6045	336	480.87	26.73	3606	576	360.60	57.60
TOTAL U/W (RESOURCE) HOURS	25715		2045.57		21843		2184.30	
TOTAL U/W DAYS	1790		142.39		1248		124.80	
U/W HOURS PER U/W DAY	14.37		14.37		17.50		17.50	
HIGH READINESS DAYS	22		1.7500543		47		4.7	
TOTAL INPORT OPS HOURS		4249		338.00		6227		622.70
TOTAL INPORT OPS DAYS		407		32.38		488		48.80
INPORT OPS HOURS PER DAY		10.44		10.44		12.76		12.76
ATON INPORT OPS DAYS		187.46		14.91		105.09		10.51
STANDBY DAYS	1004		79.87		590		59.00	
MAINTENANCE DAYS	1368		108.82		1279		127.90	
TOTAL DAYS ACCOUNTED FOR	4591		365.20		3652		365.20	
RESOURCE YRS ACCOUNTED FOR	12.571038				10			

SUMMARY DATA FOR DISTRICT: LANTAREA TYPE: WLB CLASS: 180

CUTTER: D09WLB180

	5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS
PRIMARY MISSION EMPLOYMENT				
ATON	18181	6391	757.54	266.29
RADNAV	0	0	0.00	0.00
TOTAL	18181	6391	757.54	266.29
COAST GUARD OVERHEAD				
MIO	0	0	0.00	0.00
RBS	126	0	5.25	0.00
CADET/OC	4	0	0.17	0.00
PSS	0	0	0.00	0.00
PIA	827	1112	34.46	46.33
MISC	2404	701	100.17	29.21
OP TRA	2636	3637	109.83	151.54
RESERVE	0	0	0.00	0.00
BRIDGE	0	0	0.00	0.00
TOTAL	5997	5450	249.87	227.08
ESSENTIAL MULTI-MISSION				
SAR	783	36	32.63	1.50
DOM ICE	1696	12	70.67	0.50
MER	38	45	1.58	1.88
MSA	239	15	9.96	0.63
TOTAL	2756	108	114.83	4.50
OTHER MULTI-MISSION				
ELT (ALL)	8356	365	348.17	15.21
MIL OPS	231	40	9.63	1.67
COOP (ALL)	1066	143	44.42	5.96
TOTAL	9653	548	402.21	22.83
TOTAL U/W (RESOURCE) HOURS	36587		1524.46	
TOTAL U/W DAYS	2730		113.75	
U/W HOURS PER U/W DAY	13.40		13.40	
HIGH READINESS DAYS	199		8.2916667	
TOTAL INPORT OPS HOURS		12497		520.71
TOTAL INPORT OPS DAYS		829		34.54
INPORT OPS HOURS PER DAY		15.07		15.07
ATON INPORT OPS DAYS		423.95		17.66
STANDBY DAYS	1912		79.67	
MAINTENANCE DAYS	3095		128.96	
TOTAL DAYS ACCOUNTED FOR	8765		365.21	
RESOURCE YRS ACCOUNTED FOR	24			

SUMMARY DATA FOR DISTRICT: LANTAREA TYPE: WLB CLASS: 180

SUMMARY FY86 THROUGH FY90

	5 YEAR TOTALS		5 YEAR AVERAGE	
	RESOURCE HOURS	I/O HOURS	RESOURCE HOURS	I/O HOURS
PRIMARY MISSION EMPLOYMENT				
ATON	77186	15924	1008.03	207.96
RADNAV	109	58	1.42	0.76
TOTAL	77295	15982	1009.45	208.72
COAST GUARD OVERHEAD				
MIO	0	0	0.00	0.00
RBS	126	0	1.65	0.00
CADET/OC	788	546	10.29	7.13
PSS	46	3	0.60	0.04
PIA	1007	1566	13.15	20.45
MISC	5560	4392	72.61	57.36
OP TRA	9329	13963	121.83	182.35
RESERVE	19	647	0.25	8.45
BRIDGE	0	112	0.00	1.46
TOTAL	16875	21229	220.38	277.25
ESSENTIAL MULTI-MISSION				
SAR	2632	65	34.37	0.85
DOM ICE	1778	91	23.22	1.19
MER	533	108	6.96	1.41
MSA	4310	380	56.29	4.96
TOTAL	9253	644	120.84	8.41
OTHER MULTI-MISSION				
ELT (ALL)	16774	664	219.06	8.67
MIL OPS	5968	1480	77.94	19.33
COOP (ALL)	3509	397	45.83	5.18
TOTAL	26251	2541	342.83	33.18
TOTAL U/W (RESOURCE) HOURS	129674		1693.51	
TOTAL U/W DAYS	9269		121.05	
U/W HOURS PER U/W DAY	13.99		13.99	
HIGH READINESS DAYS	628		8.2015343	
TOTAL INPORT OPS HOURS		40396		527.56
TOTAL INPORT OPS DAYS		3079		40.21
INPORT OPS HOURS PER DAY		13.12		13.12
ATON INPORT OPS DAYS		1218.15		15.91
STANDBY DAYS	5466		71.38	
MAINTENANCE DAYS	9522		124.36	
TOTAL DAYS ACCOUNTED FOR	27964		365.20	
RESOURCE YRS ACCOUNTED FOR	76.571038			

SUMMARY DATA FOR DISTRICT: PACAREA TYPE: WLB CLASS: 180 & 175

	CUTTER: D11WLB180 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS	CUTTER: D13WLB 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS
PRIMARY MISSION EMPLOYMENT								
ATON	10006	2563	1000.60	256.30	11739	1695	1173.90	169.50
RADNAV	0	0	0.00	0.00	0	0	0.00	0.00
TOTAL	10006	2563	1000.60	256.30	11739	1695	1173.90	169.50
COAST GUARD OVERHEAD								
MIO	0	0	0.00	0.00	10	5	1.00	0.50
RBS	0	0	0.00	0.00	0	0	0.00	0.00
CADET/OC	220	0	22.00	0.00	101	46	10.10	4.60
PSS	264	9	26.40	0.90	27	19	2.70	1.90
PIA	171	271	17.10	27.10	222	469	22.20	46.90
MISC	684	482	68.40	48.20	282	249	28.20	24.90
OP TRA	1228	2291	122.80	229.10	824	1666	82.40	166.60
RESERVE	0	0	0.00	0.00	71	917	7.10	91.70
BRIDGE	0	0	0.00	0.00	0	0	0.00	0.00
TOTAL	2567	3053	256.70	305.30	1537	3371	153.70	337.10
ESSENTIAL MULTI-MISSION								
SAR	369	18	36.90	1.80	239	32	23.90	3.20
DOM ICE	0	0	0.00	0.00	0	0	0.00	0.00
MER	164	4	16.40	0.40	735	31	73.50	3.10
MSA	1706	184	170.60	18.40	422	20	42.20	2.00
TOTAL	2239	206	223.90	20.60	1396	83	139.60	8.30
OTHER MULTI-MISSION								
ELT (ALL)	1947	98	194.70	9.80	1061	129	106.10	12.90
MIL OPS	1490	289	149.00	28.90	1103	160	110.30	16.00
COOP (ALL)	525	65	52.50	6.50	475	34	47.50	3.40
TOTAL	3962	452	396.20	45.20	2639	323	263.90	32.30
TOTAL U/W (RESOURCE) HOURS	18774		1877.40		17311		1731.10	
TOTAL U/W DAYS	1469		146.90		1299		129.90	
U/W HOURS PER U/W DAY	12.78		12.78		13.33		13.33	
HIGH READINESS DAYS	29		2.9		99		9.9	
TOTAL INPORT OPS HOURS		6274		627.40		5472		547.20
TOTAL INPORT OPS DAYS		446		44.60		493		49.30
INPORT OPS HOURS PER DAY		14.07		14.07		11.10		11.10
ATON INPORT OPS DAYS		182.20		18.22		152.71		15.27
STANDBY DAYS	725		72.50		774		77.40	
MAINTENANCE DAYS	983		98.30		987		98.70	
TOTAL DAYS ACCOUNTED FOR	3652		365.20		3652		365.20	
RESOURCE YRS ACCOUNTED FOR	10				10			

SUMMARY DATA FOR DISTRICT: PACAREA TYPE: WLB CLASS: 180 & 175

	CUTTER: D14WLB180 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS	CUTTER: D17WLB180 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS
PRIMARY MISSION EMPLOYMENT								
ATON	14593	6983	972.87	465.53	37470	7080	1249.00	236.00
RADNAV	344	4	22.93	0.27	0	0	0.00	0.00
TOTAL	14937	6987	995.80	465.80	37470	7080	1249.00	236.00
COAST GUARD OVERHEAD								
MIO	0	0	0.00	0.00	0	2	0.00	0.07
RBS	5	2	0.33	0.13	0	73	0.00	2.43
CADET/OC	0	0	0.00	0.00	479	684	15.97	22.80
PSS	45	139	3.00	9.27	11	25	0.37	0.83
PIA	530	399	35.33	26.60	355	350	11.83	11.67
MISC	609	337	40.60	22.47	4703	1324	156.77	44.13
OP TRA	1760	2635	117.33	175.67	6736	7999	224.53	266.63
RESERVE	43	706	2.87	47.07	96	0	3.20	0.00
BRIDGE	0	0	0.00	0.00	0	0	0.00	0.00
TOTAL	2992	4218	199.47	281.20	12380	10457	412.67	348.57
ESSENTIAL MULTI-MISSION								
SAR	2150	102	143.33	6.80	1584	334	52.80	11.13
DOM ICE	0	0	0.00	0.00	352	6	11.73	0.20
MER	14	77	0.93	5.13	2712	140	90.40	4.67
MSA	1302	124	86.80	8.27	548	11	18.27	0.37
TOTAL	3466	303	231.07	20.20	5196	491	173.20	16.37
OTHER MULTI-MISSION								
ELT (ALL)	5344	93	356.27	6.20	6540	215	218.00	7.17
MIL OPS	561	356	37.40	23.73	1570	251	52.33	8.37
COOP (ALL)	265	84	17.67	5.60	1217	262	40.57	8.73
TOTAL	6170	533	411.33	35.53	9327	728	310.90	24.27
TOTAL U/W (RESOURCE) HOURS	27565		1837.67		64373		2145.77	
TOTAL U/W DAYS	1835		122.33		3907		130.23	
U/W HOURS PER U/W DAY	15.02		15.02		16.48		16.48	
HIGH READINESS DAYS	94		6.2666667		90		3	
TOTAL INPORT OPS HOURS		12041		802.73		18756		625.20
TOTAL INPORT OPS DAYS		1083		72.20		1519		50.63
INPORT OPS HOURS PER DAY		11.12		11.12		12.35		12.35
ATON INPORT OPS DAYS		628.43		41.90		573.39		19.11
STANDBY DAYS	895		59.67		1968		65.60	
MAINTENANCE DAYS	1571		104.73		3472		115.73	
TOTAL DAYS ACCOUNTED FOR	5478		365.20		10956		365.20	
RESOURCE YRS ACCOUNTED FOR	15				30			

SUMMARY DATA FOR DISTRICT: PACAREA TYPE: WLB CLASS: 180 & 175

SUMMARY FY86 THROUGH FY90

	5 YEAR TOTALS RESOURCE HOURS	5 YEAR TOTALS I/O HOURS	5 YEAR AVERAGE RESOURCE HOURS	5 YEAR AVERAGE I/O HOURS
PRIMARY MISSION EMPLOYMENT				
ATON	73808	18321	1135.51	281.86
RADNAV	344	4	5.29	0.06
TOTAL	74152	18325	1140.80	281.92
COAST GUARD OVERHEAD				
MIO	10	7	0.15	0.11
RBS	5	75	0.08	1.15
CADET/OC	800	730	12.31	11.23
PSS	347	192	5.34	2.95
PIA	1278	1489	19.66	22.91
MISC	6278	2392	96.58	36.80
OP TRA	10548	14591	162.28	224.48
RESERVE	210	1623	3.23	24.97
BRIDGE	0	0	0.00	0.00
TOTAL	19476	21099	299.63	324.60
ESSENTIAL MULTI-MISSION				
SAR	4342	486	66.80	7.48
DOM ICE	352	6	5.42	0.09
MER	3625	252	55.77	3.88
MSA	3978	339	61.20	5.22
TOTAL	12297	1083	189.18	16.66
OTHER MULTI-MISSION				
ELT (ALL)	14892	535	229.11	8.23
MIL OPS	4724	1056	72.68	16.25
COOP (ALL)	2482	445	38.18	6.85
TOTAL	22098	2036	339.97	31.32
TOTAL U/W (RESOURCE) HOURS	128023		1969.58	
TOTAL U/W DAYS	8510		130.92	
U/W HOURS PER U/W DAY	15.04		15.04	
HIGH READINESS DAYS	312		4.8	
TOTAL INPORT OPS HOURS		42543		654.51
TOTAL INPORT OPS DAYS		3541		54.48
INPORT OPS HOURS PER DAY		12.01		12.01
ATON INPORT OPS DAYS		1525.25		23.47
STANDBY DAYS	4362		67.11	
MAINTENANCE DAYS	7013		107.89	
TOTAL DAYS ACCOUNTED FOR	23738		365.20	
RESOURCE YRS ACCOUNTED FOR	65			

SUMMARY DATA FOR DISTRICT: ALLCOGARD TYPE: WLM CLASS: 157

	CUTTER: D01WLM157 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS	CUTTER: D05WLM157 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS
PRIMARY MISSION EMPLOYMENT								
ATON	9663	4440	966.30	444.00	17207	6100	1147.13	406.67
RADNAV	0	0	0.00	0.00	0	0	0.00	0.00
TOTAL	9663	4440	966.30	444.00	17207	6100	1147.13	406.67
COAST GUARD OVERHEAD								
MIO	116	5	11.60	0.50	3	0	0.20	0.00
RBS	0	0	0.00	0.00	0	0	0.00	0.00
CADET/OC	18	20	1.80	2.00	0	179	0.00	11.93
PSS	38	1	3.80	0.10	36	92	2.40	6.13
PIA	61	384	6.10	38.40	282	603	18.80	40.20
MISC	484	329	48.40	32.90	260	1038	17.33	69.20
OP TRA	708	1383	70.80	138.30	982	1343	65.47	89.53
RESERVE	0	48	0.00	4.80	56	170	3.73	11.33
BRIDGE	0	0	0.00	0.00	1	0	0.07	0.00
TOTAL	1425	2170	142.50	217.00	1620	3425	108.00	228.33
ESSENTIAL MULTI-MISSION								
SAR	22	1	2.20	0.10	56	9	3.73	0.60
DOM ICE	3	0	0.30	0.00	56	6	3.73	0.40
MER	43	33	4.30	3.30	73	0	4.87	0.00
MSA	156	55	15.60	5.50	0	0	0.00	0.00
TOTAL	224	89	22.40	8.90	185	15	12.33	1.00
OTHER MULTI-MISSION								
ELT (ALL)	28	17	2.80	1.70	127	33	8.47	2.20
MIL OPS	65	11	6.50	1.10	132	173	8.80	11.53
COOP (ALL)	1	0	0.10	0.00	20	4	1.33	0.27
TOTAL	94	28	9.40	2.80	279	210	18.60	14.00
TOTAL U/W (RESOURCE) HOURS	11406		1140.60		19291		1286.07	
TOTAL U/W DAYS	1278		127.80		1897		126.47	
U/W HOURS PER U/W DAY	8.92		8.92		10.17		10.17	
HIGH READINESS DAYS	28		2.8		77		5.1333333	
TOTAL INPORT OPS HOURS		6727		672.70		9750		650.00
TOTAL INPORT OPS DAYS		529		52.90		880		58.67
INPORT OPS HOURS PER DAY		12.72		12.72		11.08		11.08
ATON INPORT OPS DAYS		349.15		34.92		550.56		36.70
STANDBY DAYS	694		69.40		1012		67.47	
MAINTENANCE DAYS	1123		112.30		1612		107.47	
TOTAL DAYS ACCOUNTED FOR	3652		365.20		5478		365.20	
RESOURCE YRS ACCOUNTED FOR	10				15			

SUMMARY DATA FOR DISTRICT: ALLCOGARD TYPE: WLM CLASS: 157

SUMMARY FY86 THROUGH FY90

	5 YEAR TOTALS		5 YEAR AVERAGE	
	RESOURCE HOURS	I/O HOURS	RESOURCE HOURS	I/O HOURS
PRIMARY MISSION EMPLOYMENT				
ATON	26870	10540	1074.80	421.60
RADNAV	0	0	0.00	0.00
TOTAL	26870	10540	1074.80	421.60
COAST GUARD OVERHEAD				
MIO	119	5	4.76	0.20
RBS	0	0	0.00	0.00
CADET/OC	18	199	0.72	7.96
PSS	74	93	2.96	3.72
PIA	343	987	13.72	39.48
MISC	744	1367	29.76	54.68
OP TRA	1690	2726	67.60	109.04
RESERVE	56	218	2.24	8.72
BRIDGE	1	0	0.04	0.00
TOTAL	3045	5595	121.80	223.80
ESSENTIAL MULTI-MISSION				
SAR	78	10	3.12	0.40
DOM ICE	59	6	2.36	0.24
MER	116	33	4.64	1.32
MSA	156	55	6.24	2.20
TOTAL	409	104	16.36	4.16
OTHER MULTI-MISSION				
ELT (ALL)	155	50	6.20	2.00
MIL OPS	197	184	7.88	7.36
COOP (ALL)	21	4	0.84	0.16
TOTAL	373	238	14.92	9.52
TOTAL U/W (RESOURCE) HOURS	30697		1227.88	
TOTAL U/W DAYS	3175		127.00	
U/W HOURS PER U/W DAY	9.67		9.67	
HIGH READINESS DAYS	105		4.2	
TOTAL INPORT OPS HOURS		16477		659.08
TOTAL INPORT OPS DAYS		1409		56.36
INPORT OPS HOURS PER DAY		11.69		11.69
ATON INPORT OPS DAYS		901.31		36.05
STANDBY DAYS	1706		68.24	
MAINTENANCE DAYS	2735		109.40	
TOTAL DAYS ACCOUNTED FOR	9130		365.20	
RESOURCE YRS ACCOUNTED FOR	25			

SUMMARY DATA FOR DISTRICT: AALLCOGARD TYPE: WLB CLASS: 133

	CUTTER: D01WLM133 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS	CUTTER: D07WLM133 5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS
PRIMARY MISSION EMPLOYMENT								
ATON	14994	10536	999.60	702.40	6240	2928	1248.00	585.60
RADNAV	0	0	0.00	0.00	0	0	0.00	0.00
TOTAL	14994	10536	999.60	702.40	6240	2928	1248.00	585.60
COAST GUARD OVERHEAD								
MIO	0	0	0.00	0.00	0	0	0.00	0.00
RBS	0	0	0.00	0.00	0	0	0.00	0.00
CADET/OC	52	0	3.47	0.00	0	0	0.00	0.00
PSS	0	0	0.00	0.00	0	0	0.00	0.00
PIA	351	155	23.40	10.33	12	61	2.40	12.20
MISC	700	323	46.67	21.53	148	20	29.60	4.00
OP TRA	575	371	38.33	24.73	155	236	31.00	47.20
RESERVE	71	4	4.73	0.27	0	0	0.00	0.00
BRIDGE	0	0	0.00	0.00	0	0	0.00	0.00
TOTAL	1749	853	116.60	56.87	315	317	63.00	63.40
ESSENTIAL MULTI-MISSION								
SAR	72	11	4.80	0.73	10	1	2.00	0.20
DOM ICE	8	0	0.53	0.00	0	0	0.00	0.00
MER	0	0	0.00	0.00	5	0	1.00	0.00
MSA	0	0	0.00	0.00	0	0	0.00	0.00
TOTAL	80	11	5.33	0.73	15	1	3.00	0.20
OTHER MULTI-MISSION								
ELT (ALL)	547	0	36.47	0.00	229	4	45.80	0.80
MIL OPS	37	91	2.47	6.07	209	74	41.80	14.80
COOP (ALL)	92	66	6.13	4.40	123	23	24.60	4.60
TOTAL	676	157	45.07	10.47	561	101	112.20	20.20
TOTAL U/W (RESOURCE) HOURS	17499		1166.60		7131		1426.20	
TOTAL U/W DAYS	1734		115.60		612		122.40	
U/W HOURS PER U/W DAY	10.09		10.09		11.65		11.65	
HIGH READINESS DAYS	296		19.733333		35		7	
TOTAL INPORT OPS HOURS		11557		770.47		3347		669.40
TOTAL INPORT OPS DAYS		981		65.40		233		46.60
INPORT OPS HOURS PER DAY		11.78		11.78		14.36		14.36
ATON INPORT OPS DAYS		894.33		59.62		203.83		40.77
STANDBY DAYS	823		54.87		436		87.20	
MAINTENANCE DAYS	1644		109.60		510		102.00	
TOTAL DAYS ACCOUNTED FOR	5478		365.20		1826		365.20	
RESOURCE YRS ACCOUNTED FOR	15				5			

SUMMARY DATA FOR DISTRICT: AALLCOGARD TYPE: WLB CLASS: 133

CUTTER: D08WLM133

	5YR (FY86-FY90) TOTALS RESOURCE HOURS	I/O HOURS	5YR (FY86-FY90) AVG RESOURCE HOURS	I/O HOURS
PRIMARY MISSION EMPLOYMENT				
ATON	12406	3818	1240.60	381.80
RADNAV	0	0	0.00	0.00
TOTAL	12406	3818	1240.60	381.80
COAST GUARD OVERHEAD				
MIO	0	0	0.00	0.00
RBS	0	0	0.00	0.00
CADET/OC	0	0	0.00	0.00
PSS	0	0	0.00	0.00
PIA	6	56	0.60	5.60
MISC	254	333	25.40	33.30
OP TRA	87	247	8.70	24.70
RESERVE	41	197	4.10	19.70
BRIDGE	0	0	0.00	0.00
TOTAL	388	833	38.80	83.30
ESSENTIAL MULTI-MISSION				
SAR	224	4	22.40	0.40
DOM ICE	0	0	0.00	0.00
MER	21	8	2.10	0.80
MSA	41	9	4.10	0.90
TOTAL	286	21	28.60	2.10
OTHER MULTI-MISSION				
ELT (ALL)	41	8	4.10	0.80
MIL OPS	121	21	12.10	2.10
COOP (ALL)	335	56	33.50	5.60
TOTAL	497	85	49.70	8.50
TOTAL U/W (RESOURCE) HOURS	13577		1357.70	
TOTAL U/W DAYS	1078		107.80	
U/W HOURS PER U/W DAY	12.59		12.59	
HIGH READINESS DAYS	84		8.4	
TOTAL INPORT OPS HOURS		4757		475.70
TOTAL INPORT OPS DAYS		690		69.00
INPORT OPS HOURS PER DAY		6.89		6.89
ATON INPORT OPS DAYS		553.80		55.38
STANDBY DAYS	806		80.60	
MAINTENANCE DAYS	994		99.40	
TOTAL DAYS ACCOUNTED FOR	3652		365.20	
RESOURCE YRS ACCOUNTED FOR	10			

SUMMARY DATA FOR DISTRICT: AALLCOGARD TYPE: WLB CLASS: 133

SUMMARY FY86 THROUGH FY90

	5 YEAR TOTALS RESOURCE HOURS	5 YEAR TOTALS I/O HOURS	5 YEAR AVERAGE RESOURCE HOURS	5 YEAR AVERAGE I/O HOURS
PRIMARY MISSION EMPLOYMENT				
ATON	33640	17282	1121.33	576.07
RADNAV	0	0	0.00	0.00
TOTAL	33640	17282	1121.33	576.07
COAST GUARD OVERHEAD				
MIO	0	0	0.00	0.00
RBS	0	0	0.00	0.00
CADET/OC	52	0	1.73	0.00
PSS	0	0	0.00	0.00
PIA	369	272	12.30	9.07
MISC	1102	676	36.73	22.53
OP TRA	817	854	27.23	28.47
RESERVE	112	201	3.73	6.70
BRIDGE	0	0	0.00	0.00
TOTAL	2452	2003	81.73	66.77
ESSENTIAL MULTI-MISSION				
SAR	306	16	10.20	0.53
DOM ICE	8	0	0.27	0.00
MER	26	8	0.87	0.27
MSA	41	9	1.37	0.30
TOTAL	381	33	12.70	1.10
OTHER MULTI-MISSION				
ELT (ALL)	817	12	27.23	0.40
MIL OPS	367	186	12.23	6.20
COOP (ALL)	550	145	18.33	4.83
TOTAL	1734	343	57.80	11.43
TOTAL U/W (RESOURCE) HOURS	38207		1273.57	
TOTAL U/W DAYS	3424		114.13	
U/W HOURS PER U/W DAY	11.16		11.16	
HIGH READINESS DAYS	415		13.833333	
TOTAL INPORT OPS HOURS		19661		655.37
TOTAL INPORT OPS DAYS		1904		63.47
INPORT OPS HOURS PER DAY		10.33		10.33
ATON INPORT OPS DAYS		1673.61		55.79
STANDBY DAYS	2065		68.83	
MAINTENANCE DAYS	3148		104.93	
TOTAL DAYS ACCOUNTED FOR	10956		365.20	
RESOURCE YRS ACCOUNTED FOR	30			

APPENDIX B

COMMANDANT'S DECISION MEMO ON PLANNING FACTORS AND MULTI-MISSION CAPACITY REQUIREMENTS

DEPARTMENT OF TRANSPORTATION
U.S. COAST GUARD
CG-4229 (Rev. 6-90)

DIGEST

APPROVAL: ☒
SIGNATURE: ☐
INFORMATION: ☐

28 FEB 92

FROM: G-N

TO: G-CCS

RE: DECISION MEMO - WLBR MULTI-MISSION CAPACITY REQUIREMENTS

1. Attached is the decision memo requesting that the Commandant establish the multi-mission requirements for the relacement seagoing buoy tender fleet. Attached as enclosures to the decision memo are the briefing slides and script presented on 27 FEB 92, as well as copies of the Multi-mission Issue Paper and Multi-mission Background Paper.

2. I have included in the decision memo the planning factors that affect the size and mix of the replacement ATON fleet. These factors are critical to the effective employment and support of the replacement buoy tender fleet and must be locked in.

Very Respectfully,

W. J. ECKER

SIGNER'S COMMENTS

U.S. Department of Transportation

United States Coast Guard

Memorandum

Subject: AIDS TO NAVIGATION SERVICE FORCE MIX MULTI-MISSION CAPACITY REQUIREMENTS

Date: FEB 28 1992

16500

Reply to: G-NSR
Attn. of: CDR Ihnat X70980

From: Chief, Office of Navigation Safety and Waterway Services

To: Chief of Staff

1. ISSUE: To establish the multi-mission employment capacity requirements for the replacement buoy tender fleet.

2. BACKGROUND: The Coast Guard is in the process of acquiring new resources to replace the capabilities of its aging seagoing and coastal buoy tender fleet. In conjunction with that effort, a detailed analysis of the required number and mix of the new generation buoy tenders has been undertaken.

In 1991 we contracted with the Volpe National Transportation Systems Center (TSC) to develop a computer based Decision Support System (DSS) for the Coast Guard to use in analyzing fleet mix requirements. TSC has submitted their draft report on the development and application of the Aids to Navigation Service Force Mix Decision Support System (SFM DSS).

TSC's Aids to Navigation SFM DSS uses a Geographic Information System (GIS) with built-in transportation analysis routines to project buoy tender employment in servicing aids to navigation. Inputs include numbers, locations and characteristics of the aids to navigation population, weather factors, discrepancy response requirements, special operating constraints, and planned capabilities of the replacement fleet. The SFM DSS was validated by applying existing vessel capabilities and service force mix as inputs and comparing the DSS hours predicted with historical data. I am satisfied with the validity of the SFM DSS itself, and that the input parameters adequately describe aids to navigation servicing practices.

My staff conducted a three-pronged effort to analyze the multi-mission capacity requirements for the replacement buoy tender fleet. They analyzed data from the Abstract of Operations (AOPS) reports for the past five years. They requested information from program managers on planned use of seagoing buoy tenders for multi-mission operations. Finally, they collected data from the field on individual districts' multi-mission requirements.

Subj: AIDS TO NAVIGATION SERVICE FORCE MIX MULTI-MISSION CAPACITY REQUIREMENTS

3. DISCUSSION: Our analysis of multi-mission capacity requirements is based on the following planning factors which affect the total number and mix of ships in the replacement ATON fleet.

(1) Employment targets established in the Sponsor's Requirements Documents remain valid.

(2) WLMRs will be focused-mission resources and WLBRs will be multi-mission.

(3) Marine Environmental Protection is an essential multi-mission requirement.

(4) Both the WLBR and WLMR will operate with reduced crewing levels (as compared with the existing fleet). The WLMR will be minimally crewed for operations.

(a) Shore-based maintenance support billets must be provided.

(b) Additional billets to augment aids to navigation teams, groups and district staffs must be provided to replace discrepancy response capabilities and waterways management functions lost with the reduction of ships.

(c) Billets must be included in the General Detail to provide pre-arrival training to ensure assigned crewmembers arrive fully qualified. This may require an increase in the General Detail percentage allocated to each ship.

(5) The analysis described in the Multi-mission Employment Background Package (enclosure (1)) accurately reflects Coast Guard WLBR multi-mission requirements and employment projections.

Multi-mission capacity requirements are analyzed in scenarios developed in terms of numbers of WLBRs.

A 16 WLBR scenario would annually provide 960 days of non-primary mission employment capacity. While this is a shortfall of 115 multi-mission days from the projected requirements, multi-mission requirements are substantially met.

A 19 WLBR scenario would reduce the above shortfall to 49 multi-mission days. The cost for gaining these 66 days is an increase of approximately $90 million in ship acquisition costs alone.

Subj: AIDS TO NAVIGATION SERVICE FORCE MIX MULTI-MISSION CAPACITY REQUIREMENTS

As indicated in the Multi-Mission Employment paper of 14 February 1992 (enclosure (2)), program directors have stated that the projected multi-mission capacity provided by the 16 WLBR scenario would be acceptable.

4. RECOMMENDATION: As discussed in the decision briefing for the Commandant on 27 February 1992 (enclosure (3)), I recommend that the Commandant:

(1) approve the planning factors indicated in paragraph 3 above; and

(2) determine that the multi-mission capacity provided by a 16 WLBR scenario is the baseline multi-mission requirement for developing the Aids to Navigation Service Force Mix.

/Resp
W. J. ECKER

Encl: (1) Multi-Mission Employment Background Information
(2) Multi-Mission Employment Issue Paper
(3) Commandant Briefing Slides (with script attached)

G-CPA
16500
9 MAR 1992

FIRST ENDORSEMENT ON G-N memo 16500 of 28 Feb 92

From: Chief of Staff
To: Commandant

Subj: AIDS TO NAVIGATION SERVICE FORCE MIX
MULTI-MISSION CAPACITY REQUIREMENTS

1. The attached information documents the results of G-N's analysis of multi-mission requirements for the new buoy tender fleet. I was extremely impressed with the depth of analysis conducted by G-N and personally believe this will be the benchmark from which future ones will be compared. G-N's recommendation is procedurally sound and is defensible, both internally and externally. The process G-N used to review their mission need and come to a recommendation throws out the previous norm of one-for-one replacements and instead focuses on the mission to be accomplished and the best way to accomplish it.

2. One special concern I have with our decision - also highlighted by G-N - is the impact of the reduced crewing on the new fleet. First, we must insist on pipeline training for the WLB and WLM crews, because of their minimal manning. Secondly, we must ensure that shore maintenance detachments are available as the ships are deployed. With your concurrence, I will ensure that these important issues are accounted for in our future budget requests.

3. I recommend that you:

a. Approve the planning factors in paragraph 3 of G-N's memo; and

b. Determine that the multi-mission capacity provided by the 16 WLB scenario is the baseline multi-mission requirement for developing the Aids to Navigation service Force Mix.

VIR
R. T. Nelson
R. T. NELSON

Approve J. W. Kime J. W. KIME Disapprove _____

Date 3/12/92