Manpower Requirements Plan

Report to Congress
March 9, 2023

U.S. Coast Guard

Foreword

March 9, 2023

I am pleased to present the following report, "Manpower Requirements Plan," as prepared by the U.S. Coast Guard.

Section 5104 of title 14, United States Code, directs the quadrennial submission of an assessment of all projected mission requirements for fiscal year 2023 and each of the next three fiscal years to include the number of personnel assigned, the number of personnel required, capability gaps between mission requirements and mission performance, and the actions planned to address these gaps.

Pursuant to Congressional requirements, this report is being provided to the following members of Congress:

The Honorable Maria Cantwell
Chair, Senate Committee on Commerce, Science, and Transportation

The Honorable Ted Cruz
Ranking Member, Senate Committee on Commerce, Science, and Transportation

The Honorable Sam Graves
Chairman, House Committee on Transportation and Infrastructure

The Honorable Rick Larsen
Ranking Member, House Committee on Transportation and Infrastructure.

I am pleased to answer any further questions you may have, or your staff may contact my Senate Liaison Office at (202) 224-2913 or House Liaison Office at (202) 225-4775.

Sincerely,

Linda L. Fagan
Admiral, U.S. Coast Guard
Commandant

Manpower Requirements Plan

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I. Legislative Language

This report responds to the language set forth in Section 5104 of title 14, U.S. Code, which states:

SEC. 5104. MANPOWER REQUIREMENTS PLAN

(a) IN GENERAL.—On the date on which the President submits to the Congress a budget for fiscal year 2017 under section 1105 of title 31, on the date on which the President submits to the Congress a budget for fiscal year 2019 under such section, and every 4 years thereafter, the Commandant shall submit to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a manpower requirements plan.

(b) SCOPE.—A manpower requirements plan submitted under subsection (a) shall include for each mission of the Coast Guard—
    (1) an assessment of all projected mission requirements for the upcoming fiscal year and for each of the 3 fiscal years thereafter;
    (2) the number of active duty, reserve, and civilian personnel assigned or available to fulfill such mission requirements—
        (A) currently; and
        (B) as projected for the upcoming fiscal year and each of the 3 fiscal years thereafter;
    (3) the number of active duty, reserve, and civilian personnel required to fulfill such mission requirements—
        (A) currently; and
        (B) as projected for the upcoming fiscal year and each of the 3 fiscal years thereafter;
    (4) an identification of any capability gaps between mission requirements and mission performance caused by deficiencies in the numbers of personnel available—
        (A) currently; and
        (B) as projected for the upcoming fiscal year and each of the 3 fiscal years thereafter; and
    (5) an identification of the actions the Commandant will take to address capability gaps identified under paragraph (4).

(c) CONSIDERATION.—In composing a manpower requirements plan for submission under subsection (a), the Commandant shall consider—
    (1) the marine safety strategy required under section 2116 of title 46;
    (2) information on the adequacy of the acquisition workforce included in the most recent report under section 2903 of this title; and
    (3) any other Federal strategic planning effort the Commandant considers appropriate.

II. Background

The Coast Guard evaluates manpower requirements to determine the workforce size and composition necessary for Coast Guard units to effectively execute their missions. This evaluation is accomplished through two primary methods: the manpower requirements determination (MRD) process and use of program-level staffing models.

MRD's allow the Coast Guard to appropriately account for and allocate human capital resources, as well as to make data-driven changes to the workforce as requirements emerge or change. These determinations are conducted by specialized manpower analysts from outside the program to provide an objective, external assessment. Separately, program-level models are developed and maintained by experts within various program offices and are evaluated and validated by the Coast Guard's Manpower Requirements Determination Division (CG-1B4). Both methods assess workload requirements and compare them to the workforce capacity in order to determine the quantity of employees needed and evaluate required skillsets or competencies the workforce in those positions should have.

The Coast Guard has explored the use of other methods to conduct large scale manpower estimations through use of a Force Planning Construct (FPC). A FPC approach was utilized to analyze the size and makeup of the Service's Reserve force. While the process did provide some insight, the Coast Guard has determined that existing methods, MRD's and program level staffing models, are better suited to meet the needs of the Service.

In 2020, the Government Accountability Office (GAO) issued a report[1] on the Coast Guard's effectiveness at determining workforce needs. In this report, GAO found that the Coast Guard's data was "sufficiently reliable for determining the number of positions within each type of Coast Guard unit".

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[1] Coast Guard: Actions Needed to Evaluate the Effectiveness of Organizational Changes and Determine Workforce Needs (GAO-20-223) Feb 2020.

III. Report

A. Program Improvements

The Coast Guard's goal is the establishment of manpower requirements for all authorized billets in all unit types. To progress towards this goal, the Coast Guard has streamlined the manpower analysis process, while maintaining sufficient rigor for reliability and credibility. Since the last submission of the Coast Guard Manpower Requirements Plan to Congress in April 2018, several improvements to the MRD process and doctrine have been completed.

In 2020, the Coast Guard updated its Manpower Requirements Determination Manual[2] which established standards for certain common allowances and factors used in a manpower analysis. Standardizing these items allows analysts to focus their effort on the direct mission related work of the organization under review, which reduces the total time required for each manpower analysis. Additionally, in 2021, the Coast Guard published its first ever MRD Tactics, Techniques, and Procedures (TTP). The MRD TTP is used to instruct new analysts, as well as standardize phases of analysis, algorithms used in analysis, and the required deliverables in the analysis process. By publishing the MRD TTP, the Coast Guard enabled program offices outside the MRD enterprise to conduct their own preliminary staffing studies while employing the standards used by trained analysts. This ensures that program analyses can more easily gain approval from the Coast Guard's Manpower Requirements Determination Division (CG-1B4) and accelerates the Coast Guard toward its goal of establishing requirements for all authorized billets.

Approximately 36 percent of the current Coast Guard workforce structure remains unstudied through a formal manpower analysis and demand for studies to support new assets, initiatives, and/or functions continues to increase. New requests are prioritized along with the previously unstudied billets with an ultimate goal of completing studies for all authorized billets in all unit types. Prioritization criteria is established within the MRD TTP through use of a matrix which weighs five factors:

1) Organizational function
2) Size of the organization element
3) Alignment with Coast Guard strategies
4) Operational risk
5) Organizational element lifecycle phase

Annually, all unstudied elements of the Coast Guard are ranked based on this prioritization. Manpower requirement determination resources are focused on the top priorities. When requirements for additional manpower analyses arise (i.e., those for new assets, initiatives, and/or functions), the request is weighed against the other unstudied rankings. This process allows limited resources to be focused on the highest priority programs.

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[2] Coast Guard Manpower Requirements Manual, Commandant Instruction M5310.6A, Nov 2020.

B. Analysis Tools

The Coast Guard began implementing its MRD process is 2003. Since that time, the Coast Guard has used the analytical tools summarized in Table 1 to determine workforce requirements. MRDs and the Staffing Models are the two primary methods currently in use by the Service. Two other tools, the FPC which was utilized to determine workforce requirements for the Coast Guard Reserve to respond to contingency requirements, and the Mission Support Staffing Model to be used in determining workforce staffing levels and requirements throughout the field level of the mission support enterprise, are also detailed below.

Table 1: U.S. Coast Guard Analytical Tools to Determine Workforce Requirements

Tool	Personnel Included	Description
Manpower Requirements Determinations (MRD)	All positions at analyzed units	Starts with a manpower requirements analysis (MRA), structured to determine the number and types of personnel needed to effectively perform each mission to a specified standard. Each MRA takes into account the effect of existing, new, or modified requirements on Coast Guard's workforce.
Sector Staffing Model (SSM)	97 shore forces units, including 37 Sectors	This program-level model is a Staffing requirements decision-making tool to determine needs at field level ashore operations, Coast Guard Sectors, and subordinate ashore operations units, generally based on historic levels of activities.
Activity-Based Staffing Model – Stations	193 boat stations	This program-level model calculates staffing standards based on readiness requirements, subordinate units supported, maritime security and response operation requirements, and historic activity level.
Activity-Based Staffing Model – Aids to Navigation Team (ANT)	64 ANTs	This program-level model calculates staffing standards based on evaluation of preventive and corrective maintenance for aids to navigation, including maintenance completed from vessels and from ashore.
Mission Support Services Model[3]	79 functions, performed at 17 Bases	A joint MRD and program developed analysis and model for field level mission support functions, including personnel management, facilities engineering, naval engineering, command, control, communications, computers and information technology, medical services, and employee assistance.
Force Planning Construct (FPC)[4]	Coast Guard Reserve Forces	Model employed to determine the size and shape of the Reserve force needed for a given set of scalable contingencies.

1. Manpower Requirements Determinations (MRDs)

The MRD process is designed to translate mission-based capabilities requirements into Manpower Requirements, providing both the number and the type of positions required to accomplish the Coast Guard's missions. MRD's begin with an MRA as described in the table above. The analyses and determinations ultimately provide an objective, standardized staffing

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[3] Mission Support Services Model is under-development, not approved for use at this time. Note: Activity-based models identify workforce needs based on the activities previously conducted by the unit. Requirements analysis identifies the workforce needed to accomplish the unit's mission, based on documented requirements. For this reason, the Coast Guard prefers requirements analysis for determining workforce needs.
[4] No longer in use.

logic for identifying, measuring, analyzing, and reporting work and labor consumption, accounts for human capital allocation, increases understanding the effect existing, new, or modified missions or business processes on the workforce of and helps inform asset life cycle cost.

2. Sector Staffing Model (SSM)

The SSM is an activity-based model designed to quantify steady-state staffing requirements at 97 shore forces units. Shore forces units include 37 Sectors, 16 Marine Safety Units (MSU), 32 Marine Safety Detachments (MSD), 9 Sector Field Offices (SFO), and 2 overseas Activities. SSM went through the required Verification, Validation and Accreditation process and was accredited in 2012. The SSM is accredited to:

- Evaluate Sector, MSU, MSD, SFO, and Activity staffing for the purposes of informing resource requests;

- Serve as a quantifiable, traceable, and repeatable basis for personnel reallocation between represented units;

- Enable senior leadership and program managers to evaluate proposed policy changes for staffing implications;

- Forecast future staffing needs based on projected activity and mission growth/decline; and

- Collect, codify, and evaluate programmatic business rules that affect staffing requirements for these unit types.

The SSM has an established configuration control process to manage updates. The Configuration Control Board reviews any proposed changes to SSM functional or business rules submitted by program offices. The SSM has been updated to reflect changes in security boarding's, contingency planning, and pollution response. Staffing studies which were completed for the vessel traffic service and command centers have also been incorporated into the SSM. Updates are pending for the port recovery specialist and the logistics section through synergy with the Mission Support staffing model.

3. Activity Based Staffing Model (ABSM) – Stations

The ABSM-Stations produces a standard personnel allowance list (PAL) for the 193 Coast Guard boat stations. The ABSM-Stations uses a combination of requirements based evaluation for missions that have a set requirement (e.g., ports, waterways, and coastal security), and historically based evaluation for missions that are demand driven (e.g., search and rescue). After its last major update, the model was accepted for use in 2017 and is currently the standard for staffing management at all boat stations. It is updated monthly with any changes to the approved PAL, as well as annually to add the fiscal year's underway hours to the projection of future demand. Major updates are completed as changes to the algorithm are warranted.

4. Activity Based Staffing Model (ABSM) – Aids to Navigation Team (ANT)

The ABSM-ANT produces a standard PAL for 64 ANTs. The ABSM-ANT uses an activity based measurement to evaluate preventive and corrective maintenance for aids, splitting the workload into parts that are worked from a boat and those worked from shore. The model was accepted for use in 2020 and is currently the standard for staffing management at all ANTs. It is

updated monthly with any changes to the approved PAL, as well as yearly to add the fiscal year's underway hours to the projection of future demand. Major updates are completed as changes to the algorithm are warranted.

5. Mission Support Services Model

The mission support services model is a long-term project that is under development, review, and enhancement. The goal is to cover staffing requirements at the point of service delivery for mission support services provided in the field by Bases. The model is a hybrid model based on activity standards and staffing studies.

Mission Support is horizontally and vertically integrated and aligned with the Mission Support Business Model as well as operational partner priorities at the point of service delivery. The Base is the intersection between the vertical service delivery from the logistics/service center and the horizontal integration of field support activities. It is the execution arm for the logistics/service center in the field. Bases exist where large concentrations of personnel, assets, or commands require mission support services. Bases typically provide mission support services through seven departments:

- Command, Control, Communications, Computers, Cyber and Intelligence;
- Comptroller and Base Operations;
- Facilities Engineering;
- Health, Safety, and Work-life;
- Naval Engineering;
- Personnel Support; and
- Procurement and Contracting.

To identify the manpower requirements at Bases, the Coast Guard chartered the Base Services Analysis Working Group (BSAWG) to utilize past studies and leverage standard processes to identify established, approved, or accepted workload and staffing standards, as well to project future needs. The BSAWG identified 79 business lines encompassing over 4,300 positions. A business line is defined as a group of tasks or activities that result in a product or service output that can be coupled to an organizational element and is reasonably severable from other business lines or is independently scalable.

The Mission Support Staffing Model is still in development, with 47 percent of the positions capable of being forecasted using staffing standards and MRA. Analysis of current work and workload drivers account for an additional 29 percent of positions. 24 percent of the positions/full-time equivalent remain to be fully analyzed to complete the model. The model is continuously updated when major changes in services or customers are identified (i.e., medical clinic added, Cutter homeport change) and when a manpower analysis provides a higher level of fidelity to an existing business line estimate.

Current planned improvements are for a full MRA for those business lines based on activity measurements or lower accuracy estimates. Additionally, there are plans to expand the model to include the nearly 5,400 positions located at other units, including Training Centers, logistics/service centers, and the Coast Guard Academy that perform similar support work aligned with the business lines.

The Mission Support Staffing Model will be used to quantify mission support staffing needs, optimize homeporting decisions, balance workload distributions, standardize mission support functions across the enterprise, align resource allocations, and improve effectiveness and efficiency of the Mission Support Business Model.

6. Force Planning Construct (FPC)

A FPC working group conducted a manpower estimation of the total workforce to meet the "Commandant's Strategic Intent 2015-2019," including steady state operations, major contingency operations, and heightened maritime security requirements. The Coast Guard entered into a two-year contract with Integral Consulting, which developed a tool to inform the size of the force needed to perform all Coast Guard missions. As envisioned the FPC was meant to define and document the size and shape of the force needed to fulfill current and future mission demands.

In a demonstration of practical utility, this tool was employed to analyze the size and shape of the Reserve force for a given set of scalable contingencies. While the FPC process was insightful, the Service determined efforts to expand the FPC beyond the Reserve force would be duplicative to existing manpower estimating processes, which are better suited to meet the Coast Guard's current workforce analysis needs.

C. Coast Guard Summary

At this time, 64 percent of all Coast Guard units have been analyzed or reviewed using one of the analytical tools described above, a ten percent increase from the last report to Congress. Figure 1 shows the breakdown by analysis tool. While the Coast Guard's goal is to review and validate all manpower analyses at least every five years, to account for changes in mission requirements, the Service continues to prioritize those unit types that have never undergone an analysis. The Coast Guard also exempts Coast Guard cutters from the five-year standard requirement. The Coast Guard has determined that cutter staffing generally remains fixed until there is a significant change to the cutter class's equipment, such as during a service life extension program.

The number of active duty, reserve, and civilian positions available to fulfill steady-state Coast Guard mission requirements are listed in Table 2.

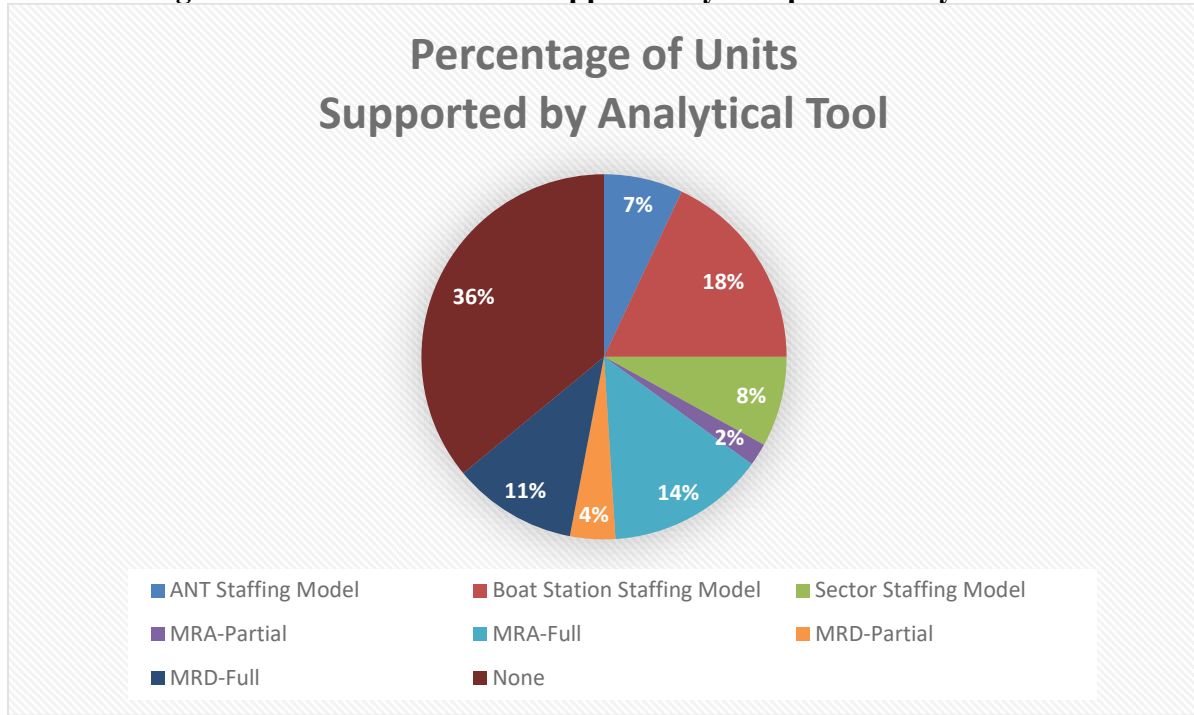**Figure 1. Coast Guard units supported by manpower analysis tools**

Table 2. Coast Guard Military and Civilian Positions[5]

FY	Officer[6]	Warrant Officer	Enlisted	Civilian	Reserve	Total
2019	7,020	1,727	32,293	9,730	7,015	57,785
2020	7,151	1,781	32,532	9,873	7,039	58,376
2021	7,144	1,718	32,424	10,185	7,029	58,500
2022	7,274	1,785	33,063	10,673	7,015	59,810
2023[7]	7,399	1,811	33,102	10,525	7,017	59,854

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[5]Table does not reflect total personnel onboard, only positions on budget.
[6] Does not include Coast Guard Academy Cadets or Officer Candidates.
[7] As requested in the Fiscal Year 2023 President's Budget.

IV. Conclusion

The Coast Guard began implementing its MRD program in 2003. Employing continuous process improvement, programmatic changes were identified to remain current within the MRD enterprise and to better serve the Coast Guard needs.

In FY 2020, the Coast Guard published a new Manpower Requirements Determination Manual and TTP. These new resources focus on standardizing processes in alignment with other military services. Processes including Manpower Availability Factors, Standard Indirect Allowance Factors, Make Ready/Put Away Allowance, and Personal, Fatigue and Delay Allowance. Additionally, the MRD TTP formalized a MRD Prioritization Matrix, which is used to prioritize the portions of the Coast Guard without a manpower analysis supporting its positions. The Coast Guard continues to focus its efforts on completing analyses of units which have never been the focus of an analysis. As a result, the Coast Guard is delivering a more precise and predictable manpower requirements plan and targeting manpower analysis resources to the highest needs, to have the largest impact.

The Coast Guard workforce is currently able to meet current mission demands through dedication, readiness, and innovation. The requirements determination analyses which have been completed using the methods employed and quantified in this report continue to better define and document the size and shape of the force needed to meet current and future mission demands.

Appendix: Abbreviations

Abbreviation	Definition
ABSM	Activity Based Staffing Model
ANT	Aids to Navigation Team
BSAWG	Base Services Analysis Working Group
FPC	Force Planning Construct
GAO	Government Accountability Office
MRA	Manpower Requirements Analysis
MRD	Manpower Requirements Determination
MSD	Marine Safety Detachment
MSU	Marine Safety Units
PAL	Personnel Allowance List
SFO	Sector Field Office
SSM	Sector Staffing Model
TTP	Tactics, Techniques, and Procedures