



441 G St. N.W.
Washington, DC 20548

October 11, 2023

Congressional Committees

Navy Readiness: Challenges to Addressing Sailor Fatigue in the Surface Fleet Continue

The Navy issued policy for managing fatigue in 2017 after it determined that fatigue was a contributing factor in the fatal ship collisions of 2017 in which 17 sailors lost their lives and the Navy incurred hundreds of millions of dollars in damage to two destroyers. Subsequently, we examined the Navy’s fatigue management policy and reported in May 2021 that the Navy had:

- 1) inconsistently implemented its policy and 14 percent of officers were getting adequate sleep;
- 2) continued its practice of routinely assigning fewer crewmembers to its ships than its workload studies determined were needed to safely operate them—with 85 percent of required crewmembers assigned on average across the fleet in September 2020;
- 3) used inaccurate baselines for calculating future personnel needs that could perpetuate crewing shortfalls into the future; and
- 4) begun to implement its Ready Relevant Learning training initiative, but had not accounted for the time that sailors would be expected to spend on modernized training when it is delivered.¹

We made eight recommendations (hereafter, our May 2021 recommendations) for the Navy to address our findings in these areas, and the Navy concurred with each of them.

The National Defense Authorization Act for Fiscal Year 2022 required the Secretary of the Navy to implement each of our recommendations. It also required the Navy to report on the status of actions taken to monitor crew fatigue and ensure equitable fatigue management throughout the surface ship fleet (hereafter, the Navy’s report to Congress).² The Navy submitted its report to Congress in March 2023 and submitted it to us in April 2023.³ The act also includes a provision for us to provide a briefing to the congressional defense committees on the extent to which the actions and goals described in the Navy’s report to Congress addressed our recommendations.

In this report, we describe the extent to which (1) the Navy has implemented our May 2021 recommendations.⁴ We also describe the extent to which the Navy’s report to Congress (2) assesses the extent of crew fatigue throughout the surface fleet and (3) identifies goals for effective fatigue management and timeframes for achieving them. To address our objectives,

¹GAO, *Navy Readiness: Additional Efforts Are Needed to Manage Fatigue, Reduce Crewing Shortfalls, and Implement Training*, [GAO-21-366](#) (Washington, D.C.: May 27, 2021). Ready Relevant Learning is the Navy’s initiative to reform training by delivering the right training, at the right time, in the right way, so that sailors are ready to operate their equipment at the end of its capability.

²Pub. L. No. 117-81, § 379 (2021).

³Commander, Naval Surface Force Atlantic, *Report to Congress: Management of Fatigue among Crew of Naval Surface Ships and Related Improvements* (Mar. 17, 2023).

⁴GAO-21-366.

we analyzed the Navy’s report to Congress and related documentation, and interviewed cognizant Navy officials.

We conducted this performance audit from May 2023 to October 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The Navy Has Implemented Four of Eight GAO Recommendations

The Navy has addressed GAO’s eight recommendations from May 2021 to varying degrees. The Navy has taken action to implement four of the recommendations. However, for the remaining four, the Navy continues to take implementing actions (see table 1).

Table 1: Implementation Status of GAO’s May 2021 Recommendations

Recommendation summary	Status as of August 2023
1) Revise guidance to require systematic collection of quality and timely fatigue data from sailors	Implemented, recommendation closed
2) Use collected data on sailor fatigue to identify, monitor, and evaluate factors that contribute to fatigue and inadequate sleep	Partially implemented
3) Take actions to address the factors causing sailor fatigue and inadequate sleep	Not implemented
4) Establish a process for identifying and assisting units that have not implemented its fatigue management policy	Partially implemented
5) Revise guidance to institutionalize the practice of using crew requirements to track and report positions that are filled	Implemented, recommendation closed
6) Establish crewing targets that are based on analysis and assessment of risk	Implemented, recommendation closed
7) Use crew requirements to project future personnel needs	Implemented, recommendation closed
8) Account for additional sailor workload resulting from the continued implementation of Ready Relevant Learning	Partially implemented

Source: GAO-21-366, GAO analysis of Navy documents and interviews with Navy officials. | GAO-24-106819

Additional details on each recommendation, its status, and the Navy’s actions to implement them are included below.

Recommendation 1

The Secretary of the Navy should ensure that the Office of Chief of Naval Operations and the Commander, U.S. Fleet Forces Command and Commander, U.S. Pacific Fleet revise guidance to require systematic collection of quality and timely fatigue data from sailors that are accessible to operational commanders to support underway decision-making.

Status: Implemented

In September 2022, the Navy issued an instruction requiring systemic collection of quality and timely fatigue data from sailors that are accessible to operational commanders to support underway decision-making.⁵

⁵Commander, U.S. Fleet Forces Command Instruction 5100.10A; Commander, U.S. Naval Forces Europe and Africa Instruction 5100.1D; and Commander, U.S. Pacific Fleet Instruction 5100.6A, *Fleet Safety and Occupational Health Program* (Sept. 12, 2022).

Recommendation 2

The Secretary of the Navy should ensure that the Office of Chief of Naval Operations and the Commander, U.S. Fleet Forces Command and Commander, U.S. Pacific Fleet use collected data on sailor fatigue to identify, monitor, and evaluate factors that contribute to fatigue and inadequate sleep such as the effects of crew shortfalls, work requirements, administrative requirements, and collateral duties.

Status: Partially implemented

The Naval Surface Forces use Afloat Safety Climate Assessment Surveys as their primary means of collecting data on the extent and causes of fatigue in the surface fleet. These surveys provide key information on organizational climate, safety-related measures, and leader perceptions of subordinates, in addition to measures that include sleep hours and the factors negatively affecting sleep. However, the timeliness and completeness of the surveys' data is limited by the frequency with which the Navy conducts the surveys and by sailors' response rate. The Navy conducts the surveys with ship crews twice over the course of a 36-month deployment cycle. Completion of the survey by crewmembers is voluntary, and in fiscal year 2022, there was a 43 percent survey completion rate. According to the Navy's report to Congress, the surface force currently sleeps an average of 5.25 hours—short of the 7.5 hours that should be made available for sleep per surface force policy.⁶

In addition, the Navy began two pilot programs in 2020 addressing this recommendation:

- 1) The Command Readiness, Endurance and Watchstanding (CREW) program collects biometric sleep, activity, and health data through the use of wearable devices (rings and watches) to provide near real-time information to the sailor, medical department, and ship leadership.
- 2) The Optimized Watchbill Logistics (OWL) program is a system that has the capability to leverage the biometric data collected by CREW wearables to assist with sailor workload planning and fatigue management.

The Navy expects CREW to reach initial operating capability later in 2023, and OWL reached this milestone in 2022. The Navy expects to complete testing of these efforts in 2024. Officials confirmed that CREW has been assessed on 11 ships, OWL has been installed on nine ships, and their integrated capability has been demonstrated during a summer 2023 training exercise. According to officials, these programs show promise for their ability to identify fatigue issues and mitigate risks in real time, but both are limited from further expansion due to a lack of dedicated funding. Officials said that both programs receive research funding that is insufficient to expand and sustain the programs across the surface fleet. We will continue to monitor the Navy's efforts to expand the CREW and OWL pilot programs and to gather more data before closing this recommendation as implemented.

Recommendation 3

The Secretary of the Navy should ensure that the Office of Chief of Naval Operations and the Commander, U.S. Fleet Forces Command and Commander, U.S. Pacific Fleet take actions to address the factors causing sailor fatigue and inadequate sleep.

⁶Commander, Naval Surface Force Atlantic, *Report to Congress: Management of Fatigue among Crew of Naval Surface Ships and Related Improvements* (Mar. 17, 2023); Commander, Naval Surface Force, U.S. Pacific Fleet and Commander, Naval Surface Force Atlantic Instruction 3120.2A, *Comprehensive Crew Endurance Management Policy* (Dec. 11, 2020).

Status: Not implemented

The Navy's fiscal year 2022 survey found that workload and uncomfortable mattresses, respectively, are the two leading factors causing inadequate sleep and fatigue.⁷

In our May 2021 report, we found that the Navy routinely assigned fewer crewmembers to its ships than its workload studies determined are needed to safely operate them.⁸ According to Navy officials, while this condition persists, the Navy is developing a 15-year plan to reverse enduring personnel shortfalls and to fully crew the fleet. However, until the Navy takes action to fill required positions with qualified sailors, personnel shortfalls will likely continue to be a leading factor causing inadequate sleep and sailor fatigue. We are conducting other ongoing work to further examine, among other things, current crewing issues.⁹

The second leading cause of inadequate sleep and fatigue cited by sailors in the Navy's survey were the uncomfortable mattresses onboard Navy ships. However, Navy officials told us that this problem does not have a Navy resource sponsor willing to examine it further and fund mattress improvements across the fleet and so it remains unaddressed. Officials added that they have received approval to replace mattresses every 3 years instead of every 5 years to help improve conditions, but that the discomfort issue remains. We will keep this recommendation open as we continue to monitor Navy actions to correct crewing and mattress issues.

Recommendation 4

The Secretary of the Navy should ensure that the Office of Chief of Naval Operations and the Commander, U.S. Fleet Forces Command and Commander, U.S. Pacific Fleet establish a process for identifying and assisting units that have not implemented its fatigue management policy.

Status: Partially implemented

The Navy's experiences with the CREW and OWL pilot programs show promise for monitoring sailor fatigue in real time and using the data generated by wearables to better mitigate the risks of fatigue. In addition to the CREW studies conducted to date, the Navy has instituted other changes to identify and assist ships in managing fatigue. According to Navy officials:

- 1) For each completed Afloat Safety Climate Assessment Survey, Navy officials conduct a debrief with ship leadership and provide them with the ship's survey results.¹⁰ Any issues that arise are discussed, and additional assistance is provided both at the brief and as a follow up, allowing for a personal and tailored ship-by-ship approach to address issues uncovered through the survey.
- 2) In January 2023, the Navy began external assessments of surface ships that are in the training phase of their deployment cycle. The assessment evaluators are senior Surface Warfare Officers who mentor ship leadership and also ride onboard the ships during training periods. The evaluators ask ship leadership about their implementation of the Navy's crew

⁷Commander, Naval Surface Forces, *Afloat Safety Climate Assessment Survey FY22 Insights* (Dec. 15, 2022) (CUI).

⁸The Navy measures both "fill"—the rate that positions on a ship are filled by sailors, and "fit"—the rate that the positions are filled with sailors who have the skills and qualifications for the positions.

⁹See H.R. Rep. No. 117-118, at 131-32 (2021).

¹⁰The Navy does not identify individuals who completed the survey to allow for anonymity, but analyzes survey data by ship class, ship, and ship department.

endurance policy, including their use of circadian rhythm watchbills, individual risk management, and crew sleep hours, among other questions.¹¹

- 3) The Navy also has ship leadership complete quarterly self-assessments using the same questions posed during external assessments. Given the recency of these assessment programs, the Navy has collected few data points from them to date. However, Navy officials responsible for collecting and analyzing the data gathered through external and self-assessments said they have been very useful for identifying sleep-related issues, and corroborating findings from other surveys on work stress, crewing, and mattress problems.

The Navy needs to gain more experience with its external and self-assessment efforts and collect more actionable data from the CREW and OWL pilot programs in order to ensure that it has an established process for identifying and assisting units with fatigue issues. We will continue to monitor the Navy's efforts to expand the CREW and OWL pilot programs and to gather more data from assessments before closing this recommendation as implemented.

Recommendation 5

The Secretary of the Navy should ensure that the Office of Chief of Naval Operations and the Commander, U.S. Fleet Forces Command and Commander, U.S. Pacific Fleet revise guidance to institutionalize the practice of using crew requirements to track and report positions that are filled.

Status: Implemented

The Navy uses crew requirements in addition to funded positions to track and report filled positions that are filled on a monthly basis. Further, it issued a memorandum in December 2021 directing that this practice continue.¹²

Recommendation 6

The Secretary of the Navy should ensure that the Commander, U.S. Fleet Forces Command and Commander, U.S. Pacific Fleet establish crewing targets that are based on analysis and assessment of risk.

Status: Implemented

Navy officials described the evolutionary process by which crew targets were first established and added that crewing against these targets is reviewed regularly through multiple forums. Additionally, Navy officials said that they review crew targets annually and adjust them as necessary based on assessments of risk. The Navy then reissues an annual notice containing the current targets. The Navy issued its latest crew targets in April 2023 through updated guidance.¹³

Recommendation 7

The Secretary of the Navy should ensure that the Office of Chief of Naval Operations uses crew requirements to project future personnel needs.

¹¹Watchbills are schedules for when sailors stand watch. Circadian rhythm watchbills are designed so that sailors stand watch and sleep at the same time each day, allowing the body to follow its natural biological processes on a 24-hour cycle.

¹²Vice Chief of Naval Operations Memorandum, *Manpower Requirements Standards* (Dec. 30, 2021).

¹³Commander, U.S. Fleet Forces Command and Commander, U.S. Pacific Fleet Notice 1000, *Enlisted Sea Duty Minimum Manning Threshold Levels* (Apr. 4, 2023).

Status: Implemented

Previously, the Navy used funded positions—a measure of how many positions the Navy has historically funded—to project personnel needs and plan for annual accessions. In 2022, the Navy calculated its future personnel needs using both funded positions and crew requirements. When using the projection of crew requirements instead of funded positions, the results show that the Navy needs 3,000 to 10,000 more personnel over the next 30 years.

Recommendation 8

The Secretary of the Navy should ensure that the Office of the Chief of Naval Operations accounts for additional sailor workload resulting from the continued implementation of Ready Relevant Learning when determining crew requirements.¹⁴

Status: Partially implemented

Navy officials affirmed they have the ability to account for training workload that may result from further stages of Ready Relevant Learning (RRL) implementation, especially when sailors will be expected to train while underway. Navy personnel officials have already assessed the workload effects resulting from RRL's initial implementation, and stated that they will continue working with the Navy's training community to ensure that it factors additional training workload into crew requirements as RRL is further developed and fielded.

The Navy has continued to implement RRL since we last reported on it in May 2021. See enclosure 1 for more information on RRL implementation as of September 2023 and changes since February 2021. We plan to continue monitoring the Navy's implementation of RRL and will keep this recommendation open as partially implemented, until the Navy implements RRL and accounts for additional training workload in its crew requirements.

The Navy has taken significant actions to monitor and address the extent and causes of fatigue in the surface fleet. However, the Navy has not implemented half of the recommendations from our May 2021 report, and three primary concerns remain about the Navy's ongoing efforts. First, the lack of dedicated funding for expanding the CREW and OWL pilot programs precludes the Navy from collecting actionable data to manage sailor fatigue across the fleet and raises concerns about whether these important efforts will endure. Second, failure to address frequently-reported mattress problems further limits the Navy's ability to address a leading cause of sailor fatigue. Finally, a root cause of sailor overwork and fatigue—shortfalls in the number and skill level of ship crew members—will likely persist until the Navy commits to fully crewing required positions with qualified sailors.

The Navy Assessment Shows That Sailors Continue to Fall Short of Required Sleep Hours

The Navy's report to Congress states that average sleep levels remain below healthy levels with a surface force-wide average of 6.26 hours available to sleep per day and 5.25 hours of sleep obtained.¹⁵ These averages fall below the surface fleet standard of sailors having at least 7.5 hours available to sleep per day, placing sailor health and ship safety and readiness at risk.

¹⁴Ready Relevant Learning is the Navy's initiative to reform training by delivering the right training, at the right time, in the right way, so that sailors are ready to operate their equipment at the technical end of its capability.

¹⁵The Navy developed this average from self-reported sailor responses to the Afloat Safety Climate Assessment Surveys, which occur twice in a ship's deployment schedule. CREW wearable technology studies have also shown that average levels of sleep are below healthy levels.

DOD guidance calls for DOD component heads to, as mission requirements permit, commit to at least 7 hours of uninterrupted sleep, with sleep recovery time provided when a service member's sleep is reduced or interrupted.¹⁶ Navy surface force guidance states that sailors must be given the opportunity to obtain a minimum of 7.5 hours of sleep per day, either through one uninterrupted sleep period or split 6-hour and 1.5-hour sleep opportunities.¹⁷ The Navy guidance also cautions that getting by on less daily sleep than the minimum requirement can rapidly and significantly degrade alertness and performance, which can lead to mishaps and numerous negative health outcomes. Navy data show that sailor effectiveness declines after prolonged periods without sleep, equating to impairment levels comparable to intoxication.

The Navy States It Has Mostly Met Its Goals for Managing Fatigue but Obstacles Remain

The Navy's report to Congress identifies the following three goals for effective fatigue management:

1. Implement comprehensive fatigue and endurance management as a matter of routine aboard ships and afloat staffs.
2. Factor fatigue and crew endurance considerations into operational risk management with Go/No Go criteria implemented.
3. Incorporate fatigue and endurance management training in all levels of leadership training throughout the Navy.

The Navy's report to Congress states that most of the deployed ships in the surface force have met these goals based on the Navy's internal assessment, but officials could not provide documentation to confirm this. Because the Navy's report to Congress states it has met its goals, the report did not include timeframes for doing so. The report also lists related policy reforms, but states that ship crews' ability to meet these goals varies over the ships' deployment cycles and is affected by crew shortfalls.

Further, the Navy's report to Congress states that Engineering and Combat Systems departments have not been able to implement these goals to the same extent as other departments. According to Navy officials, these departments have greater shortages of qualified sailors than other departments and, as a result, have more difficulty achieving appropriate crew levels and managing fatigue and endurance. Additionally, according to these officials, smaller ships such as mine countermeasures ships have greater difficulty implementing these goals because they have smaller crews and must divide watches and other work among fewer sailors.

Although the Navy has made progress toward each of its three goals, it has reported that some ships and ship departments have not met them. Without fully addressing the root causes of fatigue—such as high workload caused by under-crewing and mattress problems—the Navy may better manage fatigue but not eradicate it. On the basis of interviews with Navy officials and our review of documents related to progress on these goals, we found:

¹⁶Department of Defense Instruction 1010.10, *Health Promotion and Disease Prevention* (Apr. 28, 2014) (incorporating change 3, effective May 16, 2022).

¹⁷Commander, Naval Surface Force, U.S. Pacific Fleet, and Commander, Naval Surface Force Atlantic Instruction 3120.2A, *Comprehensive Crew Endurance Management Policy* (Dec. 11, 2020).

Goal 1: Implement comprehensive fatigue and endurance management as a matter of routine aboard ships and afloat staffs.

The Navy has developed a Naval Surface Forces instruction that provides the basis for surface fleet fatigue and endurance management policy.¹⁸ In addition to providing best practices for sleep, nutrition, and physical fitness, this instruction includes requirements for fatigue and endurance management, such as:

- Ship Commanding Officers will implement crew endurance policies for their ships while at sea and in port, to include regular 24-hour schedules that allow sailors to sleep at the same time each day and maintain healthy circadian rhythms.¹⁹
- Sailors have a minimum of 7.5 hours available to sleep per 24-hour day, in either one uninterrupted 7.5-hour period or one 6-hour period and one 1.5-hour nap period.
- Sailor workdays should not routinely exceed 12 hours per 24-hour day.

Despite the Navy's actions to ensure that its policy is implemented through external and self-assessments, it will be difficult for sailors in the surface force to obtain adequate sleep while crew sizes and their composition remain below required levels, as we identified in our 2021 report. The Navy expressed a desire to fully crew all required positions on its ships, but has not committed this intention to policy. Guidance emphasizes that the Navy is working to fully fund crew requirements, but does not give an expected date for accomplishing this.²⁰ According to Navy officials, the Navy is developing a plan to fill 100 percent of required positions within 15 years. As such, even if the Navy achieves this goal, there would remain a 15-year period where the surface fleet will experience operational risk and sailors will experience health risk from ongoing crew shortfalls.

Goal 2: Factor fatigue and crew endurance into operational risk management and implement Go/No Go criteria.

The Navy developed individual fatigue and crew endurance go/no go risk management criteria for the surface fleet. Surface fleet guidance includes an individual risk management tool that advises ship leadership on management of fatigued and inexperienced watch standers, taking the amount of rest an individual has received into consideration.²¹ This instruction provides risk levels based on sailor rest prior to watch. It also recommends potential mitigations to improve operational safety, such as replacing fatigued watch standers, scheduling watches to complement sailor rest, and asking questions of watch standers to gauge their ability to safely stand watch.

The individual risk management tool included in the Navy's guidance is useful for commanders to make more informed decisions based on self-reported fatigue information, as recommended

¹⁸Commander, Naval Surface Force, U.S. Pacific Fleet, Commander, Naval Surface Force Atlantic Instruction 3120.2A, *Comprehensive Crew Endurance Management Policy* (Dec. 11, 2020).

¹⁹To assist with this requirement, the Navy developed a template standing order that Commanding Officers can adapt to help create the policy for their ship. The template order includes provisions to promote quality sleep at healthy levels to support readiness and safety.

²⁰Commander, U.S. Fleet Forces Command, and Commander, U.S. Pacific Fleet Notice 1000, *Enlisted Sea Duty Minimum Manning Threshold Levels* (Apr. 4, 2023).

²¹Commander, Naval Surface Force, U.S. Pacific Fleet, Commander, Naval Surface Force Atlantic, Instruction 3120.2A, *Comprehensive Crew Endurance Management Policy* (Dec. 11, 2020).

in our 2021 report. However, the CREW and OWL pilot programs present an opportunity to enhance fatigue information with more real-time and actionable data. Navy officials said that expansion of the pilot programs would greatly assist ship leaders by displaying sleep and fatigue data from sailors' CREW wearables. For example, leadership could use this data when planning watches and other work activities. However, according to Navy officials, most ships now rely on self-reported fatigue information when assessing risk since the Navy has not expanded the CREW and OWL programs across the fleet.²²

Goal 3: Incorporate fatigue and endurance management in all levels of leadership throughout the Navy.

The Navy added training on fatigue and endurance management for sailors and ship crews. These training materials address issues such as health benefits of sleep and detriments from sleep deprivation; use of circadian-based watchbills and managing ship routines and duties to support sailor sleep; and crew endurance for ships in port.

Since our May 2021 report, sailors and ship crews now are to receive additional training on fatigue and endurance management. According to officials, the Navy plans to provide fatigue and endurance information as an online General Military Training resource available to all sailors in fiscal year 2024. Further, key personnel on ship crews now receive training on these principles when they begin their deployment cycle. The Navy expects that this training will help ship crews understand fatigue management principles and their personal responsibilities.

Further, the Navy expanded training on fatigue and crew endurance for Surface Warfare Officers (SWO). The Navy now provides training on these concepts for newly commissioned SWO candidates through a module in the Officer of the Deck Phase 1 training. According to Navy officials, all new SWO candidates receive this training when they enter the fleet. Additionally, the Navy provides training modules on fatigue and crew endurance to more advanced SWOs in Department Head and Executive Officer courses. According to Navy officials, with fatigue and endurance management incorporated into SWO training, all new SWO candidates will be trained on these principles upon entering the fleet, and existing SWOs will receive training on these principles when they undertake further leadership training.

The Navy's efforts to develop and incorporate fatigue and endurance management training in multiple levels of leadership support efforts to reduce negative effects of fatigue that we identified in our 2021 report. Officials said that this training is expected to shift the culture within the Navy from viewing fatigue as an unfortunate yet inevitable condition to a problem that should and can be proactively managed.

²²The Navy also has unit-level crew fit and fill targets based on operational risk management priorities. Navy guidance states that its mission is to generate persistent and sustained readiness at sea to deter aggression, assure allies, and compete and win against peer and near-peer adversaries. According to Navy officials, given ongoing crew shortfalls, Navy guidance prioritizes higher crew levels for those ships most needed to meet national priorities. While these targets are not directly related to fatigue, ships with higher fill and fit levels should have better-distributed workload and less fatigue among their crews. See Commander, U.S. Fleet Forces Command, and Commander, U.S. Pacific Fleet, Notice 1000, *Enlisted Sea Duty Minimum Manning Threshold Levels* (Apr. 4, 2023).

Agency Comments

We provided a draft of this report to DOD for review and comment. In written comments (reproduced in enclosure II), the Navy, on behalf of DOD, concurred with our findings. The Navy also provided technical comments which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Defense, the Secretary of the Navy, and other interested parties. In addition, the report is available at no charge on the GAO website at <https://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-5431 or russellc@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are Suzanne Wren (Assistant Director), Steven Banovac (Analyst-in-Charge), David Beardwood, Lillian Moyano Yob, Terry Richardson, and Carter Stevens.

A handwritten signature in black ink that reads "Cary Russell". The signature is written in a cursive style with a large, looping initial "C".

Cary Russell
Director, Defense Capabilities and Management

Enclosures – 2

List of Committees

The Honorable Jack Reed
Chairman
The Honorable Roger Wicker
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Jon Tester
Chair
The Honorable Susan Collins
Ranking Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Mike Rogers
Chairman
The Honorable Adam Smith
Ranking Member
Committee on Armed Services
House of Representatives

The Honorable Ken Calvert
Chair
The Honorable Betty McCollum
Ranking Member
Subcommittee on Defense
Committee on Appropriations
House of Representatives

Enclosure I: The Navy’s Implementation of Ready Relevant Learning, as of September 2023

The following table summarizes the status of the Navy’s implementation of the Ready Relevant Learning initiative. We classify the implementation status of each phase as of September 2023 and address changes since February 2021.

Table 2: The Navy’s Implementation of Ready Relevant Learning, as of September 2023

Phase	Description	Implementation status as of September 2023	Change since February 2021
Block learning	<p>Divide training into phased blocks (Blocks 0, 1, and 2) to avoid knowledge atrophy and align training more closely with point and time of need in a sailor’s career.</p> <p>Block 0 is new sailor induction training (bootcamp and “A school”).</p> <p>Block 1 is provided after a sailor completes the first 2 years of a sea tour.</p> <p>Block 2 is more advanced training provided prior to the second sea tour.</p>	<p>This phase has been implemented for accession-level training for all planned ratings (enlisted sailor occupations). The Navy has begun to train enlisted sailors in phased blocks over their first two sea tours. To date, over 9,800 sailors have completed Block 1 training.</p>	<p>About 7,700 additional sailors have completed Block 1 training.</p>
Requirements development	<p>Establish the exact scope and span of the knowledge and skills that will need to be addressed through RRL training for most ratings. This includes reviews and revision of training curricula, to include establishing performance objectives, related task steps, and decisions on how best to deliver new course content, such as through simulations or mobile platforms.</p>	<p>The Navy has finalized training requirements for 47 of 68 planned ratings.</p>	<p>The Navy has completed training requirements development for 10 additional ratings.</p>
Content conversion	<p>Design and develop the modernized training content that will be delivered to sailors.</p>	<p>The Navy has completed conversion of training content for 22 of 68 ratings, with conversion in process for an additional 24.</p>	<p>The Navy has completed content conversion for 14 additional ratings.</p>
Modernized delivery	<p>Provide converted training content to sailors through training technology that ranges from simple visual demonstration tools such as videos to more complex, immersive simulators and virtual trainers. According to the Navy, modernized delivery will provide for a more flexible and immersive learning experience than traditional instructor-led training and will allow for more repetition on-ship at the site of a sailor’s performance.</p>	<p>The Navy has completed modernized delivery for 16 ratings, each of which include tools such as interactive self-directed courseware, game-based virtual simulation software, demonstration videos, and step-by-step guides.</p>	<p>The Navy has completed modernized delivery for 12 additional ratings, and tested a new training system aboard a ship in 2022. The system provides training through a multi-touch screen and places sailors in an interactive, 3D environment specific to their job requirements. Approximately 170 Sailors conducted training with the system over the course of 8 days.</p>

Source: GAO analysis of Navy documents and interviews with Navy officials | GAO-24-106819

Enclosure II: Comments from the Department of the Navy



DEPARTMENT OF THE NAVY
COMMANDER
NAVAL SURFACE FORCE ATLANTIC
1751 MORRIS STREET BOX 168
NORFOLK VA 23511-2808

1000
Ser N00/393
2 Oct 23

From: Commander, Naval Surface Force Atlantic
To: Mr. Cary Russell, Director, Defense Capabilities and Management, U.S. Government
Accountability Office, 441 G Street, NW, Washington, DC 20548
Subj: DEPARTMENT OF DEFENSE RESPONSE TO THE GOVERNMENT
ACCOUNTABILITY OFFICE DRAFT REPORT, GAO-23-106819
Encl: (1) GAO Report: 'Navy Readiness: Challenges to Addressing Fatigue in the Surface Navy
Continue'

1. This is the Department of Defense (DoD) response to the Government Accountability Office (GAO) Draft Report, GAO-23-106819, 'Navy Readiness: Challenges to Addressing Sailor 2 Fatigue in the Surface Fleet Continue,' dated September 14, 2023 (GAO Code 106819). I have reviewed enclosure (1) and concur with its findings.
2. After nearly six years of working under the Crew Endurance and Fatigue Management Program, awareness and integration of Crew Endurance and Fatigue Management have significantly improved in the Surface Navy. For example, the use of circadian watch rotations is almost universal, with a noted positive impact on fatigue mitigation. As Sailors and Officers who served under the current policy in a previous tour advance to more senior positions, acceptance of and application of these requirements will continue to increase.
3. Unfortunately, despite the aforementioned efforts, the amount of sleep obtained by our Sailors at sea has not increased significantly in the past five years. Barriers to further improvement include a continued shortage of qualified Sailors, increased OPTEMPO on deployment, the lack of a funded fatigue monitoring technology, and uncomfortable berthing conditions (mattresses and rack curtains).
4. The Navy will continue to advocate for fully manned ships, a funded Program of Record for technology to monitor fatigue of shipboard Sailors, resourcing to support deployment OPTEMPO, and improved mattresses and rack curtains.
5. My Action Officer for this issue is Dr. John P. Cordle; please contact him with any questions or issues at john.p.cordle.civ@us.navy.mil or (757) 632-9555.


J. F. CAHILL

Copy to:
Dr. Cordle

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