



DEPARTMENT OF HOMELAND SECURITY

Coast Guard

46 CFR Parts 10, 11, and 15

Docket No. USCG-2018-0100

RIN 1625-AC46

Amendments to the Marine Radar Observer Refresher Training Regulations

AGENCY: Coast Guard, DHS.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Coast Guard proposes to revise its merchant mariner credentialing regulations to remove obsolete portions of the radar observer requirements and harmonize the radar observer endorsement with the merchant mariner credential. Under this proposed rule, an active mariner who serves in a relevant position for 1 year in the previous 5 years using radar for navigation and collision avoidance purposes on vessels equipped with radar, or has served as a qualified instructor for a Coast Guard-approved radar course at least twice within the past 5 years, would not be required to complete a Coast Guard-approved radar refresher or re-certification course in order to renew his or her radar observer endorsement. This proposed rule would not change the existing requirements for mariners seeking an original radar observer endorsement or mariners who do not have either 1 year of relevant sea service on board radar-equipped vessels in the previous 5 years or service as a qualified instructor for a Coast Guard-approved radar course at least twice within the past 5 years. Elimination of the requirement to take a radar refresher or re-certification course every 5 years would reduce burden on affected mariners without impacting safety.

DATES: Comments and related material must be received by the Coast Guard on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may submit comments identified by docket number USCG-2018-0100 using the Federal eRulemaking Portal at <http://www.regulations.gov>. See the “Public Participation and Request for Comments” portion of the **SUPPLEMENTARY INFORMATION** section for further instructions on submitting comments.

FOR FURTHER INFORMATION CONTACT: For information about this document call or email Mr. Davis Breyer, Coast Guard; telephone 202-372-1445, email davis.j.breyer@uscg.mil.

SUPPLEMENTARY INFORMATION:

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I. Public Participation and Request for Comments

The Coast Guard views public participation as essential to effective rulemaking, and will

consider all comments and material received during the comment period. Your comment can help shape the outcome of this rulemaking. If you submit a comment, please include the docket number for this rulemaking, indicate the specific section of this document to which each comment applies, and provide a reason for each suggestion or recommendation.

We encourage you to submit comments through the Federal eRulemaking Portal at <http://www.regulations.gov>. If your material cannot be submitted using <http://www.regulations.gov>, contact the person in the **FOR FURTHER INFORMATION CONTACT** section of this proposed rule for alternate instructions. Documents mentioned in this proposed rule, and all public comments, are available in our online docket at <http://www.regulations.gov>, and can be viewed by following that website's instructions. Additionally, if you go to the online docket and sign up for email alerts, you will be notified when comments are posted or a final rule is published.

We accept anonymous comments. All comments received will be posted without change to <http://www.regulations.gov> and will include any personal information you have provided. For more about privacy and the docket, visit <http://www.regulations.gov/privacyNotice>.

We do not plan to hold a public meeting but we will consider doing so if public comments indicate that a meeting would be helpful. We would issue a separate **Federal Register** notice to announce the date, time, and location of such a meeting.

II. Abbreviations

BLS	Bureau of Labor Statistics
CFR	Code of Federal Regulations
CGAA 2015	Coast Guard Authorization Act of 2015
DHS	Department of Homeland Security
FR	Federal Register
MERPAC	Merchant Marine Personnel Advisory Committee
MMLD	Merchant Mariner Licensing and Documentation
MMC	Merchant Mariner Credential

OMB	Office of Management and Budget
§	Section
STCW	International Convention on the Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended
STCW Code	Seafarers' Training, Certification and Watchkeeping Code
U.S.C.	United States Code

III. Basis and Purpose

The purpose of this proposed rule is to amend the radar observer endorsement requirements by removing obsolete portions and harmonizing the expiration dates of the radar observer endorsement and the merchant mariner credential (MMC).

The Coast Guard is authorized to determine and establish the experience and professional qualifications required for the issuance of officer credentials pursuant to 46 U.S.C. 7101. Authority under 46 U.S.C. 7101 has been delegated to the Commandant of the Coast Guard by Department of Homeland Security Delegation No. 0170.1(II)(92)(e). The specifics of these professional qualifications and the Coast Guard's evaluation process are prescribed by 46 CFR parts 10 and 11, and the manning requirements are in 46 CFR part 15.

Section 304 of the Coast Guard Authorization Act of 2015 (CGAA 2015), Public Law 114-120, February 8, 2016 (codified as a statutory note to 46 U.S.C. 7302), requires the harmonization of expiration dates of a mariner's radar observer endorsement with his or her MMC and the medical certificate, subject to certain exceptions.¹ Furthermore, the CGAA 2015 specifies that the process to harmonize cannot require a mariner to renew the MMC before it expires. This proposed rule would meet the statutory requirement with regard to the radar

¹ Public Law 114-120, sec. 304(c), creates an exception for individuals (1) holding a merchant mariner credential with—(A) an active Standards of Training, Certification, and Watchkeeping endorsement; or (B) Federal first-class pilot endorsement; or (2) who have been issued a time-restricted medical certificate.

observer endorsement. The requirement regarding the medical certificate is already met through policy.²

IV. Background

Currently, 46 CFR 11.480 requires that a mariner with a radar observer endorsement complete a Coast Guard-approved radar observer refresher or re-certification course every 5 years to maintain a valid radar observer endorsement on his or her MMC. The MMC is typically valid for a 5-year period in accordance with 46 U.S.C. 7302(f). Under the current regulation, the radar observer endorsement must be added to the MMC. However, the course completion certificate dictates the validity of the radar observer endorsement. This requires the mariner to carry the MMC and have the course completion certificate available in order to demonstrate compliance with the regulations. Under current regulation, it is not possible to harmonize the expiration dates of the radar course completion certificate and the MMC.

The Coast Guard sought comments from the Merchant Marine Personnel Advisory Committee (MERPAC) about harmonization. In September 2015, at Meeting 43, MERPAC recommended that the Coast Guard review whether requiring a radar refresher or re-certification course for mariners with relevant and recent underway service on a vessel equipped with radar should be considered adequate experience for renewal (MERPAC Recommendation 2015-56).³ MERPAC recommended the Coast Guard consider the history of the radar observer endorsement, the current state of radar observer training and prevalence of radar, and the concept that knowledge and skills will degrade with time if not used or refreshed through training.

² CG-MMC Policy Letter 01-18: Guidelines for Requesting Harmonization of Expiration Dates of Merchant Mariner Credentials and Mariner Medical Certificates when Applying for an Original or Renewal Merchant Mariner Credential. <https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/MMC/CG-MMC-2%20Policies/CG-MMC%2001-18%20Harmonization.pdf?ver=2018-03-02-071916-180>.

³ See Task Statement #91 from MERPAC <https://homeport.uscg.mil/Lists/Content/DispForm.aspx?&ID=805&Source=https://homeport.uscg.mil/missions/ports-and-waterways/safety-advisory-committees/merpac/task-statements-2>.

MERPAC also recommended the Coast Guard consider whether the radar observer endorsement must be on the credential.

The Coast Guard first added a requirement to prove continued competence in radar operation every 5 years by completing a professional examination or completing a Coast Guard-approved course in 1958 (23 FR 3447, May 21, 1958). As discussed in that final rule, the merchant mariner license endorsement “Radar Observer” has its roots in a report by the Technical Staff of the Committee on Merchant Marine and Fisheries to the U.S. House of Representatives concerning the *S.S. Andrea Doria* and the *M.V. Stockholm* collision.⁴ That report recommended providing adequate training for deck officers and requiring certification of officers such as radar observers. The International Maritime Organization included a requirement for radar training in its International Convention on the Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW) and the STCW Code.⁵

The Coast Guard believes that the potential for accidents continues, and that it is important for mariners to continue to benefit from training to be proficient in the use of radar as both a navigation and collision avoidance tool. The Coast Guard also believes that radar is now a commonly used navigation and collision avoidance tool. Radar carriage requirements, both in the United States and internationally, have increased in the last 60 years, and the current domestic training requirements have been in place for the last 35 years. Currently, mariners on vessels outfitted with radar maintain proficiency in the use of radar through its constant use to navigate and prevent collisions. Therefore, the Coast Guard has concluded that the current

⁴ The *S.S. Andrea Doria* and the *M.V. Stockholm* collision occurred off Nantucket in heavy fog at approximately 10:30 p.m. on July 25, 1956, and resulted in multiple fatalities.

⁵ In response to increased marine casualties because of untrained mariners, the Port and Tanker Safety Act of 1978 and the International Maritime Organization, through adoption of STCW resolution 18, “Radar simulator training” and resolution 20, “Training in the use of collision avoidance aids” developed training standards centered on live marine radar equipment, including radar simulators.

requirement for the completion of a radar refresher or re-certification course for mariners with relevant and recent service in a position using radar for navigation and collision avoidance purposes on board vessels equipped with radar is not necessary. Completion of refresher training is unnecessarily burdensome to mariners who routinely use radar.

Section 304 of the CGAA 2015 requires the harmonization of expiration dates of a mariner's radar observer endorsement with his or her MMC, and prohibits requiring a mariner to renew a credential before it expires. In this context, the Coast Guard believes that the MMC is the primary credential documenting the individual's qualifications to perform specific functions on board a ship, and should be the point of alignment when harmonizing the expiration dates of a mariner's endorsements.

In looking at this requirement, the Coast Guard also considered Executive Order 13771 of January 30, 2017, Reducing Regulation and Controlling Regulatory Costs, and Office of Management and Budget (OMB) Guidance of April 5, 2017, on that Executive order; and Executive Order 13777 of February 24, 2017, Enforcing the Regulatory Reform Agenda. These directives require agencies to review regulations in order to provide a reduction of regulatory costs to members of the public. Elimination of the requirement to take a radar refresher or re-certification course every 5 years will eliminate an unnecessary burden on the active mariner and make harmonization possible.

V. Discussion of Proposed Rule

In this proposed rule, the Coast Guard proposes to revise its regulations so that the mariner who serves in a relevant position on board a radar-equipped vessel for 1 year in the previous 5 years is not required to complete a Coast Guard-approved radar refresher or re-certification course per 46 CFR 11.480 to renew their radar observer endorsement. The proposed

requirement for 1 year of sea service within the past 5 years is consistent with similar existing sea service requirements found in, for example, 46 CFR 10.227(e)(1), Requirements for Renewal of an MMC; 46 CFR 11.302(c), Basic Training; and 46 CFR 11.303(c), Advanced Firefighting. For the purposes of this proposed rule, relevant sea service means having served in a position using radar for navigation and collision avoidance purposes on a radar-equipped vessel.

Additionally, mariners who provide evidence of being a qualified instructor and having taught a Coast Guard-approved radar endorsement refresher or re-certification course at least twice within the past 5 years would not be required to complete a radar refresher or re-certification course. The 5-year interval is based on both national and STCW endorsement requirements that follow recognized principles and standards of maritime skill acquisition and retention. The provision to allow renewal of the endorsement by an instructor of the radar course is the same provision that currently exists under 46 CFR 10.227(e)(1)(v) for MMC renewals. This provision would be applied to the radar observer endorsement.

This proposed rule would eliminate the requirement to carry a certificate of training if the radar observer endorsement is on the MMC, and would allow the endorsement and MMC to expire at the same time.

The Coast Guard did consider removing the radar refresher or re-certification course requirement altogether. However, the Coast Guard believes that the competencies required by a radar observer would degrade if the mariner does not use them on board vessels or periodically refresh them by teaching or completing a course. The concept that knowledge and skills will degrade with time if not used or refreshed has been applied in other basic maritime training arenas, such as the STCW requirements for basic training and a firefighting refresher course every 5 years, and is a recognized factor within the education industry. While there are few

specific studies in skill degradation in the maritime industry, this issue has been the subject of discussion for decades in other industries, including the aviation industry, which is very similar to the maritime industry.⁶ Also, radar continues to be incorporated into other shipboard systems and continues to change with advancements in technology. The radar observer must keep current with these changes through onboard utilization of skills or a formal course of instruction. As a result, the Coast Guard did not pursue removing refresher training altogether.

In summary, the Coast Guard is proposing to continue to require attendance at a radar refresher or re-certification course for mariners seeking to renew a radar observer endorsement who do not have 1 year of relevant sea service in the previous 5 years using radar for navigation and collision avoidance purposes on vessels equipped with radar. As discussed earlier, mariners with radar observer endorsements who do have 1 year of relevant sea service within the previous 5 years and served in a position using radar for navigation and collision avoidance purposes on board a radar-equipped vessel, or who have met certain instructor requirements, would be able to renew the radar observer endorsement without completing a course. In addition, the radar

⁶ Michael W. Gillen, “Degradation of Piloting Skills” (Master’s Thesis), University of North Dakota, Grand Forks (2008), assesses professional aircraft pilots’ basic instrument skills in the age of highly automated cockpits. In addition to the specific findings related to the aircraft pilots, the document contains a literature review of applicable background studies concerning the general theory of learning related to skill acquisition, retention, and declination. The referenced literature includes a discussion of the inverse nature of practice and completion time—previous studies showed that the time required to perform a task declined at a decreasing rate as experience with the task increased. Results from some of these previous studies indicated a rapid rate of learning depreciation. Arthur Winfred, Jr., Bennett Winston, Jr., Pamela L. Stanush, and Theresa L. McNelly, “Factors That Influence Skill Decay and Retention: A Quantitative Review and Analysis”, 11(1) *Human Performance* 57 (1998), presents a review of skill retention and skill decay literature about factors that influence the loss of trained skills or knowledge over extended periods of non-use. Results indicated that there is substantial skill loss after more than 365 days of non-use or non-practice. Physical, natural, and speed-based tasks—such as checklist and repetitive tasks—were less susceptible to skill loss than decision-making tasks that are cognitive, artificial, and accuracy-based. Collision avoidance and navigation using radar can be considered examples of the latter category. John M. O’Hara, “The Retention of Skills Acquired Through Simulator-based Training”, 33(9) *Ergonomics* 1143 (1990), examines the loss of skills among two groups of merchant marine cadets that were tested for watchstanding skills immediately preceding and following a 9-month simulator-based training program. The mitigation of decay as a function of a retraining experience was also evaluated. The results indicated that watchstanding skills improved following training and declined over the 9-month retention interval, and that refresher training was effective in terms of skill loss mitigation for some skill areas.

observer endorsement would expire with the MMC, and the mariner with a radar observer endorsement would no longer be required to present a course completion certificate within 48 hours of the demand to do so by an authorized official.

Following is a section-by-section discussion of the proposed changes.

46 CFR 11.480 Radar Observer

This proposed rule would revise 46 CFR 11.480(d), (e), (f), (g), and (h). Pursuant to these changes, a current course completion certificate from a Coast Guard-approved radar refresher or re-certification course in accordance with 46 CFR 11.480 would no longer be the only determinant of a mariner's continued competency as a radar observer.

The proposed rule would revise 46 CFR 11.480 to apply the provisions of 46 CFR 10.227(e)(1)(v) to the radar observer endorsement. A qualified instructor who has taught a Coast Guard-approved radar observer course at least twice within the past 5 years would not be required to complete a refresher or re-certification course because he or she will have met the standards to receive a course completion certificate. During the course approval process in accordance with 46 CFR subpart D, instructors are evaluated to determine whether they are qualified to teach the course; a qualified instructor does not need to complete a refresher or re-certification course.

This proposed rule would allow mariners to use recent sea service in place of completing a radar refresher or re-certification course. Mariners able to provide evidence of 1 year of relevant sea service within the last 5 years in a position using radar for navigation and collision avoidance purposes on vessels equipped with radar would not be required to attend a course to obtain a course completion certificate.

If the radar observer endorsement is on the MMC, then the radar observer endorsement is valid for the same period as the MMC. The validity of the MMC will coincide with the validity of the radar endorsement if the applicant provides the following information: (1) Evidence of 1 year of sea service within the last 5 years in a position using radar for navigation and collision avoidance purposes on board radar-equipped vessels; (2) evidence of having been a qualified instructor who has taught a Coast Guard-approved radar observer course at least twice within the past 5 years; or (3) successful completion of a Coast Guard-approved radar course within the past 5 years. If the applicant does not provide evidence of meeting the requirements for the radar observer endorsement, the endorsement will not be placed on the MMC.

46 CFR 15.815

The Coast Guard proposes to revise § 15.815 to eliminate the requirement that a person required to hold a radar endorsement must have his or her course completion certificate readily available. Having the course completion certificate available is not necessary if the MMC reflects a radar observer endorsement, because the radar observer endorsement indicates adequate training or experience demonstrated through one of the three methods described in this proposed rule.

The proposed rule would revise § 15.815(d) to allow the mariners listed in § 15.815(a), (b), and (c), to sail without a radar observer endorsement provided that they hold, and have immediately available, a course completion certificate, issued within the last 5 years, from a Coast Guard-approved radar course. This would create flexibility for mariners who were not qualified for the radar observer endorsement at their last credential application but have subsequently completed a Coast Guard-approved radar course and hold a course completion certificate.

Finally, the Coast Guard proposes to add a corresponding requirement to § 10.232(a) so that the sea service letter indicates whether the vessel the mariner has served on is equipped with radar, and that the mariner served in a position using radar for navigation and collision avoidance purposes. While certain vessels are required to carry radar, some vessels are not required to do so, such as offshore supply vessels of less than 100 gross tons and mechanically propelled vessels of less than 1,600 gross tons in ocean or coastwise service. This proposed rule would ensure that mariners serving in a position using radar for navigation and collision avoidance purposes on vessels equipped with radar will get credit towards renewal of the radar observer endorsement, regardless of whether the vessel was required to carry radar.

VI. Regulatory Analyses

We developed this proposed rule after considering numerous statutes and Executive orders related to rulemaking. A summary of our analyses based on these statutes or Executive orders follows.

A. Regulatory Planning and Review

Executive Orders 12866 (Regulatory Planning and Review) and 13563 (Improving Regulation and Regulatory Review) direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and promoting flexibility. Executive Order 13771 (Reducing Regulation and Controlling Regulatory Costs), directs agencies to reduce regulation and control regulatory costs and provides that “for every

one new regulation issued, at least two prior regulations be identified for elimination, and that the cost of planned regulations be prudently managed and controlled through a budgeting process.”

This proposed rule is not designated a significant regulatory action by OMB under section 3(f) of Executive Order 12866. Accordingly, OMB has not reviewed it. OMB considers this rule to be an Executive Order 13771 deregulatory action. See the OMB Memorandum titled “Guidance Implementing Executive Order 13771, titled ‘Reducing Regulation and Controlling Regulatory Costs’” (April 5, 2017).

This regulatory analysis provides an evaluation of the economic impacts associated with this proposed rule. The Coast Guard proposes to revise its regulations so that the mariner who served on board a radar-equipped vessel for 1 year in the previous 5 years, in a position using radar for navigation and collision avoidance purposes, is not required to complete a Coast Guard-approved radar refresher or re-certification course to renew their radar observer endorsement, as discussed in section V of this proposed rule. Additionally, mariners who provide evidence of being a qualified instructor and having taught a Coast Guard-approved radar endorsement refresher or re-certification course at least twice within the past 5 years would not be required to complete a radar refresher or re-certification course. Table 1 provides a summary of the affected population, costs, and cost savings after implementation of this proposed rule. The total 10-year discounted cost savings of the rule would be \$47,678,762 and the annualized total cost savings would be \$6,788,383, both discounted at 7 percent. We expect that an average of 7,037 mariners would benefit from this proposed rule each year. The proposed rule would result in cost savings to these mariners for no longer incurring the costs to complete the radar observer refresher course. There would be no impact to those mariners seeking an original radar observer

endorsement or who do not have 1 year of relevant sea service in a position using radar for navigation and collision avoidance purposes on board radar-equipped vessels on board radar-equipped vessels in the previous 5 years. This proposed rule would not impose costs on industry.

Table 1: Summary of the Impacts of Proposed Rule

Change	Description	Affected Population	Costs	Cost Savings
Revise 46 CFR 11.480 (d), (e), (f), (g), and (h)	Revise the merchant mariner credentialing regulations to allow mariners who are qualified instructors and mariners with 1 year of sea service in the previous 5 years using radar for navigation and collision avoidance purposes on radar-equipped vessels to retain their radar observer endorsement without being required to take a radar renewal or re-certification course	Total of 35,183 mariners would no longer be required to take radar refresher or re-certification course. Annual average of 7,037 mariners per year benefit from proposed rule (rounded)	No cost	\$6,788,830 annualized and \$47,678,762 10-year present value monetized industry benefits (cost savings) (7% discount rate)
Revise 46 CFR 15.815	Remove requirement that a person with a radar observer endorsement must have a certificate of training readily available	35,183 mariners	No cost	No cost savings
Revise 46 CFR 10.232(a)(2)	Add requirement that sea service letters include the information that the vessel the mariner has served on is radar equipped and the mariner served in a position using radar for navigation and collision avoidance purposes.	35,183 mariners	No quantifiable cost. Cost to add one line item to company's regular update to the service letter is too small to quantify.	No cost savings

The proposed revisions to 46 CFR 11.480 would result in cost savings to those mariners who no longer would have to complete the radar observer refresher course.

The proposed revisions to 46 CFR 15.815 would eliminate the requirement that a person holding a radar endorsement must also have his or her course completion certificate readily

available. While the mariner would no longer physically have to carry the certificate, the mariner would still have to physically carry an MMC that reflects a radar observer endorsement. The costs of obtaining the copy of the certificate are included in the cost of the completion of the course. Therefore, any cost savings from these revisions are included in the calculations of the cost savings to the revisions to 46 CFR 11.480. Those mariners who do not have an MMC that reflects a radar observer endorsement would be allowed to sail if they hold, and have immediately available, a course completion certificate, issued within the last 5 years, from a Coast Guard-approved radar course. There is no impact to these mariners, as they currently have to carry a certificate to show course completion.

The proposed revisions to 46 CFR 10.232 would add a requirement that the sea service letter indicate whether the mariner served on a vessel equipped with radar, and if the mariner served in a position using radar for navigation and collision avoidance purposes. The operating companies that use service letters are already required to provide mariner service information. The companies would have to add a line item once per vessel, and then the letter would be available for all other mariners serving on a radar-equipped vessel using radar for navigation and collision avoidance purposes. The companies generally produce a service letter once every 5 years to provide the employees the documentation necessary to renew their credentials. Because the cost to add one line item is a minimal burden and could be included in the company's regular updates to the service letter, we consider the proposed revisions to 46 CFR 10.232 to have no additional burden or cost savings to industry.

Affected Population

We expect that this proposed rule would affect mariners with a radar observer endorsement and mariners who would need one in the future. More specifically, it would affect

those mariners with at least 1 year of sea service in the previous 5 years in a position using radar for navigation and collision avoidance purposes on board a radar-equipped vessel, as they will no longer be required to complete a Coast Guard-approved radar refresher or re-certification course per 46 CFR 11.480 in order to renew their radar observer endorsement. It would also affect mariners who have served as instructors for a Coast Guard-approved radar course at least twice within the past 5 years, the majority of whom hold a valid endorsement and would be included in the affected population. The radar observer endorsement would expire with the MMC and the mariner would no longer be required to carry the course completion certificate so that it can be presented to the Coast Guard upon demand.

We used data from the Coast Guard’s Merchant Mariner Licensing and Documentation (MMLD) system to estimate the average number of mariners affected by this proposed rule. The MMLD system is used to produce MMCs at the National Maritime Center. Table 2 below shows the radar endorsement data from the MMLD system used to estimate the affected population. The MMLD system does not have exam data prior to 2011 for the mariners who took the rules of the road exam to renew an MMC.

Table 2: Mariners holding Radar Observer Endorsements

Year	Mariners Who Hold a Radar Observer Endorsement (Current Total Population)	Mariners Who Took Rules of the Road Exam to Renew MMC	Mariners Who Benefit from Proposed Rule
2011	37,612	488	37,124
2012	38,114	572	37,542
2013	37,011	638	36,373
2014	35,262	671	34,591
2015	34,280	716	33,564
2016	34,546	777	33,769
2017	34,076	755	33,321
Average Total Mariners	35,843	660	35,183

Impacted per Year	7,169	132	7,037
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The “Mariners Who Hold a Radar Observer Endorsement” column shows the number of unique mariners who, on January 1 of each year, held a valid MMC with a radar observer endorsement. Per § 11.480, each applicant for a renewal of a radar observer endorsement must complete the appropriate Coast Guard-approved refresher or re-certification course, receive the appropriate course completion certificate, and present the certificate or a copy of the certificate to the Coast Guard. A radar observer endorsement is typically valid for 5 years from the date of completion of the Coast Guard-approved course. From 2011 to 2017, there was an average of 35,843 total mariners with a valid MMC with a radar observer endorsement. The Coast Guard does not have more detailed information as to the expiration for each mariner’s radar observer endorsement. Therefore, we divided the total mariners by 5 to estimate that an average of 7,169 mariners currently would need to take the radar renewal course each year (35,843 total mariners/5, rounded to nearest whole number).

Under this proposed rule, the Coast Guard expects that a portion of the total mariners would not have 1 year of sea service in the last 5 years in a position using radar for navigation and collision avoidance purposes on board radar-equipped vessels. There are some mariners who are inactive but still complete the requirements to renew an MMC. The requirements for the renewal of an MMC are in § 10.227. In order to renew their credentials, mariners must present acceptable documentary evidence of at least 1 year of sea service during the past 5 years, or pass a comprehensive, open-book exercise that includes a rules of the road examination. Mariners who take the rules of the road exam are tracked in the MMLD database. The “Mariners Who Took Rules of the Road Exam to Renew MMC” column in table 3 shows the number of the unique mariners in the “Mariners Who Hold a Radar Observer Endorsement (Current Total

Population)” column who took the rules of the road examination as part of the MMC renewal process for their existing valid MMC, not the number of mariners who took the rules of the road exam in that given year. Therefore, we used this as a proxy to estimate the number of mariners who did not have 1 year of sea service in the last 5 years. Under this proposed rule, an average of 660 total mariners would still have had to take a radar refresher or re-certification course in order to maintain the radar observer endorsement. The Coast Guard does not have more detailed information as when each mariner took the radar refresher or re-certification course over the 5-year period. We divided the total mariners by 5 to find an average of 132 mariners would still need to take the exam each year (660 total mariners/5).

We subtracted the number in the “Mariners Who Took Rules of the Road Exam to Renew MMC” column from the number in the “Mariners Who Hold a Radar Observer Endorsement” column to find the mariners who, under this proposed rule, would not have had to take a radar refresher or re-certification course when they last renewed their MMC. From 2011 to 2017, there was an average of 35,183 mariners who held radar observer endorsements and had at least 1 year of relevant sea service during the past 5 years. This number represents the total number of mariners expected to benefit from this proposed rule. We divided the total number of mariners expected to benefit from this proposed rule by 5 to find the average mariners that would benefit each year (35,183 total mariners/5). This comes out to an average of 7,037 mariners per year that would no longer have to take a radar refresher or re-certification course (rounded to nearest whole number).

Costs

The regulatory changes in this proposed rule would not impose any costs to industry or government.

Cost Savings

The cost savings to industry are the difference between the current baseline cost to industry and the cost to industry if the regulatory changes in this proposed rule are implemented.

Baseline Cost to Industry

To estimate the cost savings to industry, we first estimated the current costs to industry. The costs to industry include the cost of the refresher or re-certification course, the time to take the course, and time and mileage costs to travel to take the course. The mariners incur costs for the radar refresher or re-certification course. To estimate the cost of the course, the Coast Guard researched and found a sample of course costs from five training centers that offer Coast Guard-approved radar refresher or re-certification courses. The cost of the courses ranged from \$199 to \$250. We took an average of the 5 estimates to find the average cost of the courses is \$228 $((\$199 + \$250 + \$225 + \$225 + \$243)/5, \text{ rounded to nearest dollar})$.^{7,8,9,10,11}

We then estimated the cost of the time for the mariners to take the refresher or re-certification course. The 5 training centers state that the radar renewal course is 1-day. For the purposes of complying with service requirements, a day is defined as 8 hours (46 CFR 10.107, Definitions in subchapter B).¹² We obtained the wage rate of a mariner from the Bureau of Labor Statistics (BLS), using Occupational Series 53-5021, Captains, Mates, and Pilots of Water Vessels (May 2016). The BLS reports that the mean hourly wage rate for a Captain, Mate, or

⁷ Maritime Professional Training, course cost of \$199, found at <http://www.mptusa.com/course/149-Radar-Observer-Recertification-Renewal>

⁸ Compass Courses, course cost of \$250, found at <http://compasscourses.com/maritime-safety-training-courses/radar-re-certification/>

⁹ The Marine Training Institute, course cost of \$225, found at <http://themarinetraidinginstitute.com/ecdis-radar-recertification/>

¹⁰ Calhoun MEBA Engineering School, course cost of \$225, found at <http://rro.cutwater.org/>

¹¹ Maritime Institute of Technology & Graduate Studies, course cost of \$243, found at https://www.mitags-pmi.org/courses/view/Radar_Observer_Recertification

¹² 46 CFR 10.107, https://ecfr.io/Title-46/pt46.1.10#se46.1.10_1107

Pilot is \$39.19.¹³ To account for employee benefits, we used a load factor of 1.52, which we calculated from 2016 4th quarter BLS data.¹⁴ The loaded wage for a mariner is estimated at \$59.57 (\$39.19 wage rate x 1.52 load factor). We multiplied the loaded wage rate by the hourly burden to find the current cost for a mariner to take the radar renewal course is \$476.56 (\$59.57 wage rate x 8 hour burden).

We then estimated the cost for the mariners to travel to take the refresher or re-certification course. The radar refresher or re-certification course must be taken in person at a training center. This means the mariners incur costs for time to travel to take the course. We estimated mileage using travel costs assumptions from the *Implementation of the 1995 Amendments to the International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers, 1978, and Changes to National Endorsements Final Rule*.¹⁵ On average, a mariner commutes 50 miles to a training course one-way, or 100 miles round trip. The Federal Highway Administration reports the average commute speed for private vehicles is 28.87 miles per hour.¹⁶ We divided the average round trip mileage to the training center by the average commute time to find that it takes an average of 3.46 hours for a mariner to travel to the training center (100 miles/28.87 miles per hour, rounded). We multiplied this by the loaded hourly wage rate to find that the hourly burden per mariner to travel to the training center to take the refresher or re-certification course is \$206.11 (3.46 hours x \$59.57).

¹³ Mean wage, <https://www.bls.gov/oes/2016/may/oes535021.htm>.

¹⁴ Employer Costs for Employee Compensation provides information on the employer compensation and can be found in table 9 at https://www.bls.gov/news.release/archives/ecec_03172017.pdf. The loaded wage factor is equal to the total compensation of \$28.15 divided by the wages and salary of \$18.53. Values for the total compensation, wages, and salary are for all private industry workers in the transportation and material moving occupations, 2016 4th quarter. We use 2016 data to keep estimated cost savings in 2016 dollars.

¹⁵ Found at <https://www.regulations.gov/docket?D=USCG-2004-17914>. Non-commuting driving time estimate found on page 132 of the Regulatory Analysis and Final Regulatory Flexibility Analysis, located under Supporting Documents.

¹⁶ “Summary of Travel Trends: 2009 National Household Travel Survey”, table 27, found at <http://nhts.ornl.gov/2009/pub/stt.pdf>.

The mariners also incur additional mileage costs for traveling to the training facility to take the 1-day course, such as gas and wear and tear on their vehicles. We used the U.S. General Services Administration privately owned vehicle mileage reimbursement rate of \$0.54 per mile to estimate this additional cost.¹⁷ We multiplied this rate by the 100 miles round trip to the training facility to estimate that the mariners incur a cost of \$54 per mariner for the additional mileage costs.

Table 3 summarizes the costs per mariner to take the radar refresher or re-certification course. Adding the cost of the 1-day course, the opportunity cost of time to take the course, and the opportunity cost of roundtrip travel time and mileage costs to get to the training center, we found that it costs \$964.67 per mariner to take the radar refresher or re-certification course.

Table 3: Costs per Mariner for Radar Refresher or Re-certification Course

Cost Category	Cost
1-Day Course	\$228.00
Opportunity Cost of Time (8 hours) Spent in Training Facility	\$476.56
Opportunity Cost of Roundtrip Travel Time to Training Center	\$206.11
Mileage Costs	\$54.00
<i>Total</i>	<i>\$964.67</i>

To find the baseline total cost for all mariners to take the radar refresher or re-certification course, we multiplied the total cost per mariner of \$964.67 by the annual average mariners who currently hold radar observer endorsements. As shown in table 2, we found this is an annual average of 7,169 mariners. Therefore, the total baseline annual average cost for all mariners is \$6,915,719 (7,169 mariners x \$964.67 per mariner, rounded).

¹⁷ Found at <https://www.gsa.gov/travel/plan-book/transportation-airfare-rates-pov-rates-etc/privately-owned-vehicle-pov-rates/pov-mileage-rates-archived>. We use the 2016 rate to keep all costs in 2016 dollars.

Costs to Industry after Implementation of the Regulatory Changes Proposed

Revising § 11.480 so that mariners who serve on board a radar-equipped vessel for 1 year in the previous 5 years are not required to take a radar refresher or re-certification course to renew their radar observer endorsement would reduce the number of mariners who would need to take the radar refresher or re-certification course. As shown in table 2 in the “Affected Population” subsection, an average of 132 mariners would still need to take the radar refresher or re-certification course each year. These mariners would continue to have the same costs per mariner shown in table 3. Multiplying the cost per mariner by the average mariners that would still need to take the course each year, we found the total annual cost to industry that would remain under this proposed rule would be \$127,336 (132 mariners x \$964.67 per mariner).

Cost Savings

To find the total cost savings of this proposed rule, we subtracted the costs to industry after implementation of the proposed rule from the baseline costs. Subtracting \$127,336 from \$6,915,719, we found the total cost savings of this proposed rule would be \$6,788,383. Table 4 shows the total 10-year undiscounted industry cost savings of this proposed rule would be \$67,883,830. The 10-year estimated discounted cost savings to industry would be \$47,678,762, with an annualized cost savings of \$6,788,383, using a 7-percent discount rate. Using a perpetual period of analysis, we estimated the total annualized cost savings of the proposed rule would be \$5,541,343 in 2016 dollars, using a 7-percent discount rate.

Table 4: Total Estimated Cost Savings of the Proposed Rule over a 10-year Period of Analysis (Discounted at 7 and 3 Percent)

Year	Total Undiscounted Costs	Total, Discounted	
		7%	3%
1	\$6,788,383	\$6,344,283	\$6,590,663
2	\$6,788,383	\$5,929,237	\$6,398,702

3	\$6,788,383	\$5,541,343	\$6,212,332
4	\$6,788,383	\$5,178,825	\$6,031,390
5	\$6,788,383	\$4,840,023	\$5,855,719
6	\$6,788,383	\$4,523,386	\$5,685,164
7	\$6,788,383	\$4,227,464	\$5,519,577
8	\$6,788,383	\$3,950,901	\$5,358,812
9	\$6,788,383	\$3,692,431	\$5,202,730
10	\$6,788,383	\$3,450,870	\$5,051,194
Total	\$67,883,830	\$47,678,762	\$57,906,284
Annualized		\$6,788,383	\$6,788,383

B. Small Entities

Under the Regulatory Flexibility Act, 5 U.S.C. 601-612, we have considered whether this proposed rule would have a significant economic impact on a substantial number of small entities. The term “small entities” comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

This proposed rule reduces the burden on industry by removing the requirement to attend a radar refresher or re-certification course every 5 years for mariners who have 1 year of relevant sea service in the previous 5 years in a position using radar for navigation and collision avoidance purposes on board radar-equipped vessels, or for Coast Guard-approved radar course qualified instructors who have taught the class at least twice within the past 5 years. The MMC and radar observer endorsement is in the mariner’s name and not the company’s name, so we assume the affected mariners would receive the cost savings from this proposed rule. We do not have further information that any companies would reimburse the mariners for these costs and would acquire the costs savings.

Therefore, the Coast Guard certifies under 5 U.S.C. 605(b) that this proposed rule would not have a significant economic impact on a substantial number of small entities. This proposed

rule reduces the burden associated with mariners taking the radar refresher or re-certification course and will not adversely affect small entities as defined by the Small Business Administration in 13 CFR 121.201. If you think that your business, organization, or governmental jurisdiction qualifies as a small entity and that this proposed rule would have a significant economic impact on it, please submit a comment to the docket at the address listed in the **ADDRESSES** section of this preamble. In your comment, explain why you think it qualifies and how and to what degree this proposed rule would economically affect it.

C. Assistance for Small Entities

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996, Public Law 104-121, we want to assist small entities in understanding this proposed rule so that they can better evaluate its effects on them and participate in the rulemaking. If the proposed rule would affect your small business, organization, or governmental jurisdiction and you have questions concerning its provisions or options for compliance, please contact the person in the **FOR FURTHER INFORMATION CONTACT** section of this proposed rule. The Coast Guard will not retaliate against small entities that question or complain about this proposed rule or any policy or action of the Coast Guard.

Small businesses may send comments on the actions of Federal employees who enforce, or otherwise determine compliance with, Federal regulations to the Small Business and Agriculture Regulatory Enforcement Ombudsman and the Regional Small Business Regulatory Fairness Boards. The Ombudsman evaluates these actions annually and rates each agency's responsiveness to small business. If you wish to comment on actions by employees of the Coast Guard, call 1-888-REG-FAIR (1-888-734-3247).

D. Collection of Information

This proposed rule would call for no new collection of information under the Paperwork Reduction Act of 1995, 44 U.S.C. 3501–3520. The information collection associated with this proposed rule is the currently approved collection 1625-0040 (MMC Application).¹⁸ The proposed revisions to 46 CFR 15.815 would eliminate the requirement that a person holding a radar endorsement must also have his or her course completion certificate readily available. While the mariner would no longer physically have to carry the certificate, the mariner would still have to carry an MMC that reflects a radar observer endorsement. Those mariners who do not have an MMC that reflects a radar observer endorsement would be allowed to sail provided that they hold, and have immediately available, a course completion certificate, issued within the last 5 years, from a Coast Guard-approved radar refresher or re-certification course. There is no impact to these mariners, as they currently have to carry a certificate to show course completion.

The proposed revisions to 46 CFR 10.232 would add a requirement that the sea service letter indicates whether the mariner served on a vessel equipped with radar, and if the mariner served in a position using radar for navigation and collision avoidance purposes. In place of an indication on an application or by separate certification that a mariner completed a Coast Guard-approved radar observer course, a statement would be added to the already-required sea service letter. The operating companies that use service letters are already required to provide mariner service information. The companies would have to add a line item once per vessel, and then the letter would be available for all other mariners serving on a radar-equipped vessel using radar for navigation and collision avoidance purposes. The companies generally produce a service letter once every 5 years to provide the employees the documentation necessary to renew their

¹⁸ The full title of COI 1625-0040 is “Application for Merchant Mariner Credential (MMC), Application for Medical Certificate, Application for Medical Certificate - Short Form, Small Vessel Sea Service (Optional) Form, DOT/USCG Periodic Drug Testing (Optional) Form, and Disclosure Statement for Narcotics, DWI/DUI, and/or Other Convictions (Optional) Form.”

credentials. Because the cost to add one line item is a minimal burden and could be included in the company's regular updates to the service letter, we consider the proposed revisions to 46 CFR 10.232 to have no additional burden to industry. Therefore, the proposed revisions would not change the burden in the currently approved collection 1625-0040.

E. Federalism

A rule has implications for federalism under Executive Order 13132 (Federalism) if it has a substantial direct effect on States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. We have analyzed this proposed rule under Executive Order 13132 and have determined that it is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132. Our analysis is explained below.

It is well settled that States may not regulate in categories reserved for regulation by the Coast Guard. It is also well settled that all of the categories covered in 46 U.S.C. 3306, 3703, 7101, and 8101 (design, construction, alteration, repair, maintenance, operation, equipping, personnel qualification, and manning of vessels), as well as the reporting of casualties and any other category in which Congress intended the Coast Guard to be the sole source of a vessel's obligations, are within the field foreclosed from regulation by the States. *See* the Supreme Court's decision in *United States v. Locke and Intertanko v. Locke*, 529 U.S. 89, 120 S.Ct. 1135 (2000). Because this proposed rule involves the credentialing of mariners under 46 U.S.C. 7101, it relates to personnel qualifications and, as a result, is foreclosed from regulation by the States. Therefore, because the States may not regulate within these categories, this proposed rule is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132.

While it is well settled that States may not regulate in categories in which Congress intended the Coast Guard to be the sole source of a vessel's obligations, the Coast Guard recognizes the key role that State and local governments may have in making regulatory determinations. Additionally, for rules with federalism implications and preemptive effect, Executive Order 13132 specifically directs agencies to consult with State and local governments during the rulemaking process. If you believe this rule has implications for federalism under Executive Order 13132, please contact the person listed in the **FOR FURTHER INFORMATION** section of this preamble.

F. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995, 2 U.S.C. 1531-1538, requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of \$100 million (adjusted for inflation) or more in any one year. Although this proposed rule would not result in such an expenditure, we do discuss the effects of this proposed rule elsewhere in this preamble.

G. Taking of Private Property

This proposed rule would not cause a taking of private property or otherwise have taking implications under Executive Order 12630 (Governmental Actions and Interference with Constitutionally Protected Property Rights).

H. Civil Justice Reform

This proposed rule meets applicable standards in sections 3(a) and 3(b)(2) of Executive Order 12988, (Civil Justice Reform), to minimize litigation, eliminate ambiguity, and reduce burden.

I. Protection of Children

We have analyzed this proposed rule under Executive Order 13045 (Protection of Children from Environmental Health Risks and Safety Risks). This proposed rule is not an economically significant rule and would not create an environmental risk to health or risk to safety that might disproportionately affect children.

J. Indian Tribal Governments

This proposed rule does not have tribal implications under Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), because it would not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

K. Energy Effects

We have analyzed this proposed rule under Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use). We have determined that it is not a “significant energy action” under that order because it is not a “significant regulatory action” under Executive Order 12866 and would not likely have a significant adverse effect on the supply, distribution, or use of energy.

L. Technical Standards

The National Technology Transfer and Advancement Act, codified as a note to 15 U.S.C. 272, directs agencies to use voluntary consensus standards in their regulatory activities unless the agency provides Congress, through OMB, with an explanation of why using these standards would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., specifications of materials, performance, design, or

operation; test methods; sampling procedures; and related management systems practices) that are developed or adopted by voluntary consensus standards bodies.

This proposed rule does not use technical standards. Therefore, we did not consider the use of voluntary consensus standards.

M. Environment

We have analyzed this proposed rule under Department of Homeland Security Management Directive 023-01 and Commandant Instruction M16475.ID (COMDTINST M16475.1D), which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4370f), and have made a preliminary determination that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. A preliminary (draft) Record of Environmental Consideration (REC) supporting this determination is available in the docket where indicated under the “Public Participation and Request for Comments” section of this preamble. This proposed rule would be categorically excluded under categorical exclusion (CATEX) numbers L52, L56, L57, and L62 of DHS Directive 023-01(series). As such, CATEX L52 pertains to regulations concerning vessel operation safety standards, CATEX L56 pertains to regulations concerning the training, qualifying, and licensing of maritime personnel, CATEX L57 pertains to regulations concerning manning of vessels, and CATEX L62 pertains to regulations in aid of navigation. We seek any comments or information that may lead to the discovery of a significant environmental impact from this proposed rule.

List of Subjects

46 CFR Part 10

Penalties, Personally identifiable information, Reporting and recordkeeping requirements, Seamen.

46 CFR Part 11

Penalties, Reporting and recordkeeping requirements, Schools, Seamen.

46 CFR Part 15

Reporting and recordkeeping requirements, Seamen, Vessels.

For the reasons discussed in the preamble, the Coast Guard proposes to amend 46 CFR parts 10, 11, and 15 as follows:

1. The authority citation for part 10 continues to read as follows:

Authority: 14 U.S.C. 633; 31 U.S.C. 9701; 46 U.S.C. 2101, 2103, 2110; 46 U.S.C. chapter 71; 46 U.S.C. chapter 73; 46 U.S.C. chapter 75; 46 U.S.C. 2104; 46 U.S.C. 7701, 8903, 8904, and 70105; Executive Order 10173; Department of Homeland Security Delegation No. 0170.1.

2. Amend § 10.232 by redesignating paragraphs (a)(2)(vii) through (a)(2)(x) as paragraphs (a)(2)(viii) through (a)(2)(xi), respectively and add new paragraph (a)(2)(vii) to read as follows:

§ 10.232 Sea service.

(a) * * *

(2) * * *

(vii) For those seeking to renew a radar observer endorsement, whether the vessel is equipped with radar and if the mariner served in a position using radar for navigation and collision avoidance purposes.

* * * * *

PART 11—REQUIREMENTS FOR OFFICER ENDORSEMENTS

1. The authority citation for part 11 continues to read as follows:

Authority: 14 U.S.C. 633; 31 U.S.C. 9701; 46 U.S.C. 2101, 2103, and 2110; 46 U.S.C. chapter 71; 46 U.S.C. 7502, 7505, 7701, 8906, and 70105; Executive Order 10173; Department of Homeland Security Delegation No. 0170.1. Section 11.107 is also issued under the authority of 44 U.S.C. 3507.

2. Amend § 11.480 as follows:

a. In paragraph (d), remove the text “paragraph (e)” and add, in its place, the text “paragraphs (f) or (g)”; and

b. Revise paragraphs (e) through (h) to read as follows:

§ 11.480 Radar observer.

* * * * *

(e) A radar observer endorsement issued under this section is valid until the expiration of the mariner’s MMC.

(f) A mariner may also renew his or her radar observer endorsement by providing evidence of meeting the requirements located in 46 CFR 10.227(e)(1)(v).

(g) The Coast Guard will accept on-board training and experience through acceptable documentary evidence of 1 year of relevant sea service within the last 5 years in a position using radar for navigation and collision avoidance purposes on vessels equipped with radar as meeting the refresher or re-certification requirements of paragraph (d) of this section.

(h) An applicant for renewal of a license or MMC who does not provide evidence of meeting the renewal requirements of paragraphs (d), (f), or (g) of this section will not have a radar observer endorsement placed on his or her MMC.

PART 15—MANNING REQUIREMENTS

1. The authority citation for part 15 continues to read as follows:

Authority: 46 U.S.C. 2101, 2103, 3306, 3703, 8101, 8102, 8103, 8104, 8105, 8301, 8304, 8502, 8503, 8701, 8702, 8901, 8902, 8903, 8904, 8905(b), 8906 and 9102; sec. 617, Pub. L. 111-281, 124 Stat. 2905; and Department of Homeland Security Delegation No. 0170.1.

2. Amend § 15.815 by revising paragraph (d) and removing paragraph (e) to read as follows:

§ 15.815 Radar observers.

* * * * *

(d) In the event that a person described in paragraphs (a), (b), or (c) of this section does not hold an endorsement as radar observer, he or she must have immediately available a valid course completion certificate from a Coast Guard-approved radar course.

Jeffrey G. Lantz,
Director, Office of Commercial Regulations and Standards.
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