DEPARTMENT OF TRANSPORTATION

Coast Guard

46 CFR Part 10

[CGD 94–041]

RIN 2115–AE92

Radar-Observer Endorsement for Operators of Uninspected Towing Vessels

AGENCY: Coast Guard, DOT.

ACTION: Final rule.

SUMMARY: The Coast Guard amends its rules to require a Radar-Observer endorsement. This final rule requires radar-training for licensed masters, mates, and operators of radar-equipped uninspected towing vessels 8 meters (approximately 26 feet) or more in length, toward the endorsement. The rule is necessary to ensure that radar-equipped towing vessels are manned by mariners with the qualifications, skills, and knowledge to operate the radar equipment on board.

DATES: This final rule is effective on March 11, 1997.

ADDRESSES: Unless otherwise indicated, documents referred to in this preamble are available for inspection or copying at the office of the Executive Secretary, Marine Safety Council (G–LRA, 3406), U.S. Coast Guard Headquarters, 2100 Second Street SW., room 3406, Washington, DC 20593–0001 between 9:30 a.m. and 2 p.m., Monday through Friday, except Federal holidays. The telephone number is (202) 267–1477.

FOR FURTHER INFORMATION CONTACT: Lieutenant Commander Donald J. Darcy, Project Manager, Division of Maritime Personnel Qualifications (G–MSO–1), telephone (202) 267–0221, between 7 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION:

Regulatory History

On April 4, 1994, a public hearing was held concerning this rulemaking. On October 26, 1994, the Coast Guard published an interim rule in the Federal Register (59 FR 53754) that required training and an endorsement for personnel receiving original licenses, or renewing or upgrading licenses, on or after February 15, 1995. In response to comments from members of the regulated public indicating difficulties in obtaining the required training in the time allowed, on February 14, 1995, the Coast Guard published a second document in the Federal Register (60 FR 8308) which reopened the comment period and postponed the compliance date to June 1, 1995. No public hearing was requested, and none was held. Public comments submitted, as well as further evaluation of the interim rule by the Coast Guard, revealed issues requiring additional clarification. Therefore, on May 3, 1996, the Coast Guard published a third document in the Federal Register (61 FR 19859) which reopened the comment period for the second time and invited comments on specific items. This time the comment period closed on July 2, 1996; but the compliance date of the interim rule remained June 1, 1995.

Background and Purpose

The derailment of the Amtrak Sunset Limited, a passenger train, on September 22, 1993, with extensive injury and loss of life, resulted in a study entitled ''Review of Marine Safety Issues Related to Uninspected Towing Vessels''. The study cited a number of recommendations for improving safety in the towing industry. One of the recommendations was to require Radar-Observer training and endorsements for operators of radar-equipped uninspected towing vessels 8 meters (approximately 26 feet) or more in length. That recommendation was approved by the Coast Guard, which, on October 26, 1994 (59 FR 53754), published an interim rule establishing requirements for radar training. The interim rule constituted part of a comprehensive initiative by the Coast Guard to improve navigational safety for towing vessels. It also added topics to the list of subjects taught in approved radar-training courses that must be completed for a Radar-Observer endorsement. It first became effective on November 25, 1994. However, to provide a reasonable opportunity for affected persons to complete the training and obtain the required endorsements, 46 CFR 15.815(c) requires the endorsements only for those licenses issued on and after June 1, 1995. (It compelled persons holding valid licenses issued before June 1, 1995, to undergo basic Radar-Operation training, and to obtain certificates of completion for that training before June 1, 1995.) Without an endorsement (or a certificate of completion), no person may serve after June 1, 1995, as a master, mate, or operator of a radar-equipped towing vessel, 8 meters (approximately 26 feet) or more in length. The comment period for the interim rule, as twice extended, closed on July 2, 1996.

This final rule, like the interim rule, applies to all operators of radar-equipped towing vessels 8 meters (approximately 26 feet) or more in length operating in the navigable waters of the United States, except for towing vessels engaged solely in assistance towing.

The changes to § 15.815 accomplished by the interim rule went into effect on June 1, 1995, and have already been published in the Code of Federal Regulations. They therefore need not be restated in this final rule, and are not; but this rule adopts them as final.

Discussion of Comments and Changes

The Coast Guard embarked on this rulemaking to establish a baseline of documented training and competency in the towing industry. It has carefully considered the expense and inconvenience this rule places on industry and mariners, and has determined that this training is necessary to ensure that vessels equipped with radar are manned by mariners with the skills and knowledge to use and interpret radar data.

At the close of the comment period, on July 2, 1996, the Coast Guard had received comments from 780 interested parties regarding this rulemaking.

Among the comments were 595 form letters expressing concern that under this rulemaking some Operators of Uninspected Towing Vessels (OUTVs) would have to obtain training on radar equipment that was not required on towing vessels. Section 15.815(c), as amended in the interim rule (CGD 94–041 [60 FR 8309], February 14, 1995), requires operators of towing vessels of 8 meters (approximately 26 feet) or more in length, if equipped with radar, to meet the Radar-Operation and Radar-Observer requirements. The CG notes that under a separate rulemaking, published on July 3, 1996, (CGD 94–020 [61 FR 35064]), towing vessels of 12 meters (approximately 39 feet) or more in length are required to be equipped with radar. Therefore, operators of towing vessels of 12 meters (approximately 39 feet) or more in length are required to meet the Radar-Operation and Radar-Observer requirements because those vessels are required to be fitted with radar. However, operators of towing vessels of 8 to 12 meters in length, are required to meet the Radar-Operation and Radar-Observer requirements only if the vessel is fitted with radar.

Also among the comments were 160 letters that expressed concern that mariners who already have extensive experience operating towing vessels on oceans in domestic trade, using navigational equipment, would nonetheless have to attend training under the treaty known as STCW (for Standards of Training, Certification and

Watchkeeping for Seafarers). The Coast Guard has developed this rulemaking to work in harmony with international law and, where possible, eliminates requirements that create unwarranted differences between domestic and international law in general.

Another 12 comments discussed radar as merely a navigational aid, not to be depended on entirely. The Coast Guard concurs with these comments. But, like any navigational aid (tool) used by mariners to navigate their vessels, radar—while it must not be depended on entirely— must be used correctly, or it becomes a detriment to safe navigation.

Another 11 comments questioned the necessity for the 5-day radar-operator course, and for the refresher course, for operators of assistance-towing vessels. In addition, one comment complained that the rule is written so broadly as to include the marine-assistance industry, since the industry falls under the rules that affect uninspected towing vessels; it stated that there is a need to differentiate between vessels providing assistance and those that provide commercial towing services, and it urged the Coast Guard to exempt all marine-assistance vessels from the final rule. The Coast Guard has considered these comments and appreciates the outstanding safety record the assistance-towing industry has enjoyed, and continues to exclude towing vessels operated exclusively for this industry from this final rule. Should an operator choose to engage in simple towing (where there is no peril to the vessel being towed), this rule, as well as rules governing equipment and licensing, will become applicable. The assistance-towing endorsement already is applicable to all licenses except those for OUTVs and for master or mate authorizing service on inspected vessels over 200 gross tons. Holders of these licenses may engage in assistance towing without endorsement on any vessel within the scope of the license.

Several comments expressed concern for the economic impact on small entities and on individual mariners. The greatest expense will be to obtain an original radar endorsement, which normally requires a training course of 3 to 5 days; however, for some mariners, this rule may not require this until the year 2000. After mariners have obtained the original endorsement, they need only a 4-hour course for the subsequent license renewal. Since the renewal and the endorsement are each valid for 5 years, their cost is prorated over 5 years. Neither in any one year nor in all 5 years is the cost out of line, weighed against the enhanced safety due to the training. (Please refer to the full treatment of the impact on *Small Entities* elsewhere in this preamble.)

Several comments cited the training as inconvenient, since it will take away valuable family time that is already limited simply by the nature of the job. Others cited the financial expense to the family, because mariners may lose pay during the training period and may incur additional costs for travel, food, and other necessities. The Coast Guard notes that, when a mariner enrolls in the 5-day training course to obtain the original radar endorsement, the training amounts to 1 day a year. Furthermore, the Coast Guard notes that, for the 4-hour refresher course in preparation for the license renewal, the training amounts to less than 1 hour a year.

Another 48 comments requested an extension of the compliance date for the Radar-Observer endorsement. In response to these and other comments from members of the regulated public, the Coast Guard amended the interim rule to change the date on which the Radar-Observer endorsement or the Radar-Operation certificate would become effective, from February 15, 1995, to June 1, 1995.

One comment stated that simulator training should not be a predicate of designation as a radar observer. The Coast Guard has considered this comment and has determined that simulator training will remain a part of this rulemaking since a simulator presents several scenarios in a controlled environment, in a shorter time; this allows for a demonstration of proficiency using radar equipment much earlier than usual.

One comment stated that the training requirement imposed by this rulemaking is unnecessary because use of radar is necessary in the execution of the job and because, therefore, many mariners have had years of experience as radar observers—with great success, as evidenced by the outstanding safety record of the industry. The comment requested that this experience equate to training. The Coast Guard agrees that experience is certainly an asset, but has determined that it is not a replacement for training, and notes that the success claimed for the assistance-towing industry is not supported by statistics for the entire commercial-towing industry: statistics indicate that this training is necessary for the commercial-towing industry.

Still other comments suggested that a Coast Guard representative visit vessels and view their operations and then determine whether they meet the intent of the rule. As mentioned earlier, the Coast Guard has determined that use of a simulator is the best and most economical method for testing proficiency, since it presents several scenarios in a safe and controlled environment, in a shorter time, and requires a demonstration of radar skills.

Eleven comments suggested that Radar-Observer training be a requirement only for newly licensed operators, since, having had no previous experience, they will probably benefit most from it. The Coast Guard agrees that newly licensed operators may benefit most from this training, yet is of the opinion that this training will sharpen the skills of all operators of towing vessels except for towing vessels engaged solely in assistance-towing.

Two comments suggested that the Coast Guard allow qualified companies to conduct required training and certification on board their towing vessels. This final rule does allow qualified companies (i.e., those with Coast Guard-approved courses) to conduct training. (As stated in the interim rule, only the Radar-Operation course may be conducted by individuals, companies, or other organizations without prior Coast Guard approval.)

Several comments suggested that persons who already hold valid licenses and have successfully completed all requirements towards the Radar-Observer endorsement be allowed to extend the renewal date of the endorsement to coincide with the month of the renewal date of the license, reducing time and expense. The Coast Guard has accepted this suggestion [46 CFR 10.480(k)] and will allow synchronization of the renewal dates of the endorsement and the license. It has determined that adopting this suggestion will not pose a safety risk and will reduce economic and administrative burdens on the mariners and the Coast Guard. (Completion of the Radar-Observer training still has to precede the renewal of the license by 2 years or less, and extending the validity of the endorsement is necessary only once to synchronize the renewals.

One comment suggested that the Coast Guard give serious consideration to a radar requirement for uninspected charter vessels equipped with radar, since a high percentage of operators of these vessels do not know how to perform the basic collision-avoidance and blind-navigation techniques greatly needed in restricted visibility, which is common whether in the Northeast or on the West Coast. The Coast Guard has considered this suggestion and has determined that, while this comment has considerable merit, it lies outside the scope of this rulemaking.

One comment questioned whether an OUTV towing a passenger-barge should have to attend training for proficiency in rapid radar plotting when this training offers no practical utility for any operator of typical inland or coastwise vessels, very few of which are equipped with large radars and plotting boards. The Coast Guard has considered this comment and has determined that operation of a passenger-barge entails both a passenger-vessel license and a towing endorsement, since the barge both carries passengers on board and is being towed.

Three comments suggested that the Coast Guard develop a set of rules for river radar distinct from the set for blue-water radar. The interim rule, the relevant parts of which this final rule adopts as final, has separate requirements [46 CFR 10.305(b)(3) and (6)] for unlimited, inland and Gulf Intracoastal Waterway (GIWW), and river routes.

Another comment suggested that the Coast Guard require towing vessels over a certain tonnage (or horsepower) to be equipped with radar and for operators to hold certificates of training in the operation of that radar. The Coast Guard has already issued a final rule requiring radar on towing vessels of 12 meters (about 39 feet) or more in length [61 FR 35064 (July 3, 1996)].

Five comments suggested that this rule apply only to vessels above a threshold of 12 meters (about 39 feet) or more in length, rather than to those above 8 meters (about 26 feet) or more in length. The rule on equipment, cited in the previous paragraph, does apply to the higher threshold vessel 12 meters (about 39 feet) or more in length. But the Coast Guard maintains that, if radar is installed on board, the operator must possess the skills and knowledge to use and interpret the data for the radar to be of any value as a navigational aid.

Two comments stated that this rule could deter mariners with navigational skills from wanting to promote themselves into the pilot house because of the added cost, time, and fear of failing the test. These concerns may affect mariners' ability to continue earning a living, since failing the test would cost them their jobs if their employers did not have some other kind of job available. The intent of this rule is not to deter mariners with navigational skills from advancing into the pilot house; rather, it is to ensure before they navigate a vessel they possess these skills and knowledge to interpret the data, and not just that they accrue deck time. While, in the past, holding a licensed position in the pilot house did not require training, and may have reduced worries of unemployment for the mariner, this training however provides assurance to the public that vessels are under the command of qualified personnel. The Coast Guard holds that the benefits far outweigh the discernible costs, and that the rule as a whole provides the entire towing industry some assurance of checks and balances on both domestic and international waterways.

One comment suggested that the Coast Guard print a manual on radar operation and, upon renewal of a license, require the taking of a test based on the information addressed in the manual. The studies and reports used to formulate this rulemaking emphasize demonstrating skill as well as knowledge of radar equipment, rather than relying solely on a mariner's ability to pass a test. Therefore, the Coast Guard favors practical demonstration as well as testing, to determine a mariners' proficiency in radar operation.

One comment stated that the rule was confusing and required interpretation and even translation. The Coast Guard realizes the difficulty for some mariners in understanding many sections of this rule and has changed it where clarity was in question [§§ 10.305(c)(1)(ii)(C), (1)(iii)(A), and (3)(iii)(E)].

Several comments addressed §§ 10.305(c) (2)(iii) and (3)(iii), which require licensed personnel to know, and to show that they know, how to plot course, speed, and closest point of approach on inland waters and on rivers. Many comments noted that course plotting is seldom performed on inland waters or on rivers, because of the time and attention required to plot the course. Several comments explained that, by the time the course was plotted, the vessel would have passed the boat or bridge by reason of which it was plotting. Another comment noted that plotting by radar is impossible on most rivers because the other vessel is usually obscured from radar view until the last moment. Likewise, requiring the captain to make intricate calculations and navigate the vessel at the same time iswill be dangerous because of continuous course changes at short intervals: dangerous to the observer, the crew, and other vessels in the area. The Coast Guard would certainly rather have an operator making passing arrangements on the radio and looking out the pilot-house windows than staring into a radar set—under normal visibility. Under reduced visibility, however, a mariner must use all the navigational aids available including radar. Therefore, on rivers the rule will instead require [46 CFR 10.305(c) (2)(iii) and (3)(iii)] the operator to be trained in interpreting, and to demonstrate how to interpret, the relative course, speed, and approximate location of another vessel, which may be crossing, meeting, or overtaking.

One comment stated that the industry needs to raise its standards and be more pro-active with any training that will help masters, mates, and other watchstanders in the performance of their duties. The Coast Guard concurs with this comment.

Four comments recommended that, to avoid confusion, the ''Rivers'' endorsement be expanded to include the GIWW. The Coast Guard has considered this and similar recommendations from the Towing Safety Advisory Committee (TSAC), and has determined that this is not appropriate, since a Rivers endorsement requires a different level of knowledge and skill. Operation of a vessel on rivers is less subject to weather than that of a vessel on the GIWW. However, to avoid confusion the Coast Guard has done something else instead: It has expanded the inland endorsement to include the GIWW since the required level of knowledge and skill for inland and the GIWW are compatible, as they involve similar operational conditions. Accordingly, in this rulemaking, the endorsement for inland waters is renamed, ''inland waters and GIWW'' [46 CFR 10.305, 10.306, and 10.480].

One comment suggested that the Coast Guard consider allowing currently licensed towboat operators who have earned certificates from Radar-Operation courses to qualify as applicants for original endorsements. The Coast Guard has determined that licensed towboat operators who have earned only certificates from Radar-Operation courses have not attained enough expertise to qualify their holders for original endorsements. The Coast Guard is increasing the OUTVs' expertise with radar in three stages. First, as of June 1, 1995, every operator of an uninspected towing vessel equipped with radar, whose license was issued before June 1, 1995, had to hold a certificate from a Radar-Operation course; this represents as little as 4 hours' instruction. Second, upon renewal of a license as an OUTV on or after June 1, 1995, every operator has had to hold a certificate from a Radar-Observer course; this represents as much as 5 days' training (the precise amount varies with training facilities chosen and route-endorsements sought). Third, thereafter, upon renewal of the endorsement—which should by then coincide with that of the license—every such operator will have to hold a

renewal certificate; this will represent 4 more hours' instruction.

One comment proposed that the Coast Guard consider allowing applicants for renewal of the Radar-Observer endorsement the option to ''test out'' of the refresher-training course by passing the final examination instead of taking the course. A similar comment questioned why a renewal or upgrade was necessary every 5 years, and argued that later training would serve only to deplete the income of mariners. The Coast Guard has considered these comments and has determined, however, that leniency would undermine the intent of establishing and maintaining proficiency, and would not provide the mariners any assurance of their fellows' competence on domestic or international waters.

One comment suggested that the Coast Guard require all candidates for first licenses to attend the 5-day Radar-Observer course, which leads to the Radar-Observer endorsement. The Coast Guard has considered this comment and has already made this a requirement, in § 15.815(c).

One comment proposed that, every 30 months, a licensed mariner certified by the Coast Guard assess the skills of each operator, while on board the vessel, and according to the findings endorse the operator's license, certifying proficiency in the interpretation of radar data—or not. The Coast Guard has considered this proposal, but notes that it could be cost-prohibitive to assess the operators' skills in this manner because the time spent on board the vessel assessing the operator's skills, through a series of exercises, is unpredictable. However, this rule [46 CFR 10.480(e)] allows administration by the Coast Guard or a third party of an exam for renewal of Radar-Observer endorsement.

One comment suggested that the Coast Guard allow companies to submit a list of personnel competent to be certified by the Coast Guard as radar observers. The Coast Guard finds this unacceptable because it leaves too much room for interpretation of competency, and may lead to its rubber-stamping of personnel.

One comment disputed the Coast Guard's view that training institutions would be able to train the requisite number of mariners in the existing Radar-Operation course, and gear up to teach the new Radar-Observer course, both by February 15, 1995. This request is now moot—first because the Coast Guard extended the compliance date to June 1, 1995, and second because, as later events have proved, the schools have been meeting the double challenge.

One comment questioned why the Coast Guard has chosen to place the burden of obtaining Radar-Operation training squarely on the shoulders of the operators rather than on their employers. This training may be a condition of employment: Failure to obtain the required training may leave a mariner unqualified and, therefore, unemployable as an operator of a radar-equipped towing vessel.

One comment questioned why the Coast Guard has never required any evidence of training other than in first aid and CPR before licensing an OUTV. A notice of proposed rulemaking [61 FR 31332] in CGD 94–055, ''Licensing and Manning for Officers of Towing Vessels'', whose comment period stayed open until October 17, 1996, fully addresses this question. A supplemental notice in CGD 94–055, also with a comment period, is being developed as described in an earlier notice of intent, published at 61 FR 66642.

Regulatory Evaluation

This final rule is not a significant regulatory action under section 3(f) of Executive Order 12866, and does not require an assessment of potential costs and benefits under section 6(a)(3) of that Order. It has not been reviewed by the Office of Management and Budget under that Order. It is non-significant under the Regulatory Policies and Procedures of the Department of Transportation (DOT) [44 FR 11040; February 26, 1979].

The Coast Guard expects the economic impact of this rule to be so minimal that a full Regulatory Evaluation under paragraph 10e of the Regulatory Policies and Procedures of DOT is unnecessary.

This rule will apply to licensed operators of radar-equipped towing vessels operating in U.S. waters. As of August 1996, there were an estimated 12,300 licensed operators of uninspected towing vessels (OUTVs) in the U.S. An estimated 473 new OUTV licenses are issued annually, and 1,931 OUTV licenses are renewed annually. Although some OUTVs may operate towing vessels on oceans (domestic-trade waters), licensed masters and mates crew many of these vessels. Now OUTVs on oceans have to complete a one-time Radar-Observer course [see 46 CFR 10.464(e)(2)]. This rule will require certain licensed OUTVs to obtain Radar-Observer endorsements, which must be renewed 5 years after the month of issuance [see § 10.480(f) in this regulatory text]. Roughly 15,000 masters, mates, active OUTVs, and new OUTVs will each need to complete a Radar-Observer course sometime during the next 5 years to comply with 46 CFR 15.815(c). Those completing the Radar-Observer course will need to renew their endorsements every 5 years to continue to work on radar-equipped towing vessels. Certificates from Radar-Operation courses will not be valid with licenses dated after June 1, 1995; Radar-Observer endorsements will be necessary with such licenses. Persons using Radar-Operation certificates to satisfy § 15.815(c) will need to complete the Radar-Observer course when they renew or upgrade their licenses if they intend to continue working on radar-equipped towing vessels.

Comments on Costs

Several comments to the interim rule suggested that the estimated cost to comply with the initial requirements was understated. These comments estimated that the actual cost to receive the initial endorsement would amount to between $1,000 and $2,000 per operator. One comment estimated that the cost to receive the radar endorsement would be $2,500 because there are no courses approved by the Coast Guard in Pennsylvania. (The Coast Guard has determined that there are indeed no such courses and that therefore an operator would need to travel to a nearby State to enroll in a course.) All of the comments on costs have influenced the following, revised calculations.

Benefits

This rule is the direct result of the recommendations from the ''Railroad—Marine Accident Report'' prepared by the National Transportation Safety Board (NTSB). The Report noted a lack of competence in radar navigation and cited this lack of competence as the probable cause of the derailment of theat Amtrak Sunset Limited. The Report recommended that the Coast Guard upgrade its licensing standards to require that persons licensed as OUTVs hold valid inland-waters Radar-Observer certification if they stand navigational watch on radar-equipped towing vessels. It also recommended that the Coast Guard require employers to provide specific evidence of approved training. The Coast Guard affirmed, in ''Review of Marine Safety Issues Related to Uninspected Towing Vessels'', that 60 percent of all towing-vessel casualties are due to human error. The ''Review'', therefore, supports this rulemaking.

This final rule addresses the findings of the NTSB, which cited a lack of training for operators and a failure of employer accountability as two key issues identified in past major marine accidents—particularly in that of the

derailment of the Amtrak Sunset Limited caused by the Tug MAUVILLA that resulted in 47 deaths and 103 injuries. The number of persons at risk in a major marine casualty typically ranges from about 25 to 2,000 or more. The training required by this rule has the potential to significantly decrease the number of deaths and injuries in the marine industry. If this training decreases the number of deaths even by just 7 people over the next 13 years, the benefit of $18.9 million, which is based on the willingness by society to pay $2.7 million for the value of a fatality averted, will exceed the estimated cost of $17.1 million.

One way to reduce the risks associated with human error in operating a towing vessel is to ensure that mariners maintain the highest practicable standards of training, certification, and competency. Although this rule may increase costs to industry, through upgraded training and certification, the new requirements are intended to increase potential benefits by reducing towing-vessel accidents and, with them, deaths and injuries.

Costs

The costs, which accrue from the date of this final rule, depend on the types of courses taken, the average fees for the courses, and the expenses for travel, meals, and lodging (where applicable). The following are general premises: (1) Although the interim rule went into effect on June 1, 1995, costs are calculated from the effective date of this final rule; (2) the average course length is 5 days, whether for an unlimited license, for a license for inland waters and GIWW, or for a license for rivers, and is long enough to meet the new requirements for those operators who will be taking the Radar-Observer course for the very first time; (3) courses are conveniently offered near most port cities, so extensive travel will be necessary for few operators; (4) operators usually work on a rotational schedule, allowing them to arrange for enrollment in a course without interfering with their normal work schedule; (5) 30 percent of those affected by this rule will incur additional miscellaneous expenses involving travel and lodging while the remaining 70 percent will incur minimal expenses, given the convenience of course locations; (6) the typical towboat operator started his career in 1983, has served 12 years, and will serve for 18 more years, a total of 30 years; and (7) recurring costs for renewals run from year 2000 through year 2013, the last year of those 30, while recurring costs for new OUTVs run from year 1995.

The Radar-Observer courses and corresponding endorsements vary depending on route: unlimited, inland and GIWW, and rivers. The Coast Guard sampled various institutions that offer these courses and found that course lengths varied depending on route, from 3 to 8 days. The Coast Guard used a length of 5 days for this rule.

The costs to obtain the original Radar-Observer endorsement and to renew it every 5 years are as follows:

Original Radar-Observer Course

Average Cost	$480
Meals and Lodgings	500
Travel	
Local	50
Distant	350
Total Cost (with distant travel)	1,330
Total Cost (with local travel)	530

Renewal Course (4 hours, including exam)

Average Cost	$125
Meals and Lodgings	100
Travel	
Local	50
Distant	350
Total Cost (with distant travel)	575
Total Cost (with local travel)	175

An optional refresher course is available to operators who need to review advances or changes in radar technology. The average cost of this course is $260; however, as previously stated, this course is not a requirement to renew an OUTV Radar-Observer endorsement.

The following calculations rest on the seven general premises established previously and on information obtained from suppliers of courses, meals and lodging, and travel:

Original Radar-Observer Course

1. Affected OUTVs already serving (12,300) × Cost (5-day Course):	
8,610 (with local travel) × $530	$4,563,300
3,690 (with distant travel) × $1,330	4,907,000
Total	9,471,000
New OUTVs issued annually (473) × Cost (5-day Course)	
331 OUTVs (with local travel) × $530	$175,430
142 OUTVs (with distant travel) × $1,330	188,860
Total	364,290

Renewal Course

OUTVs renewed annually (1,931) × Cost (4-Hour Exam):	
1,352 renewals (with local travel) × $175	$236,600
579 renewals (with distant travel) × $575	332,925
Total	$569,525

The principal costs began to accrue over the 5 years from June 1, 1995, when OUTVs began renewing their licenses and receiving their first radar endorsement. The cost that current OUTVs will incur to receive the initial Radar-Observer endorsement comes to around $9,471,000 in all, or $1,894,200 annually. The cost that new OUTVs will incur, shown as a recurring cost, comes to around $364,290 annually until year 2000. After then, recurring costs, which comprise 5-year renewals and new OUTVs altogether, come to around $933,815 ($364,290 + $569,525) annually. Costs of this rule are calculated to years 2013 and 2025 to reflect 30 years of service performed by OUTVs who started their terms in 1983 and 1995, respectively. The total costs to year 2013 are estimated to be $17,093,615. Costs to industry over 30 years are estimated to be $30,120,845. The present values of the recurring costs to years 2013 and 2025 are $17,093,615 and $30,120,845, respectively. This reflects a 7-percent discount to 1997 of the projected stream of costs of this rule in accordance with current guidance from the Office of Management and Budget.

Small Entities

Under the Regulatory Flexibility Act [5 U.S.C. 601 *et seq.*] the Coast Guard must consider whether this final rule will have a significant economic impact on a substantial number of small entities. ''Small entities'' may include (1) small businesses and not-for-profit organizations that are independently owned and operated and are not dominant in their field; (2) governmental jurisdictions with populations of less than 50,000; and (3) ''small-business concern[s]'' as defined by section 3 of the Small Business Act [15 U.S.C. 632(a)]. Pursuant to 15 U.S.C. 632(a) the standard industrial classification-codes and size-standards are set forth in the table following 13 CFR 121.601.

This rule places its burden on individual OUTVs, not on their employers, who may, though they need not, relieve the OUTVs of it. The Coast Guard expects that, of the employers who will assume this responsibility, few if any will be small entities. Additionally, sufficient flexibility and alternatives were built into this rulemaking, when the interim rule was initially published on October 26, 1994, to accommodate small entities; these included a phase-in period of up to 5

years, during which a Radar-Operation certificate would be accepted, and the exemption for operators of assistance-towing vessels. The effective date of June 1, 1995, provided enough notice to OUTVs that those whose licenses expired after June 1, 1995, could renew them in advance; in effect, OUTVs could extend the renewal date and meet the new requirements by distributing the initial cost over 2 to 5 years.

Therefore, the Coast Guard certifies under the Regulatory Flexibility Act [5 U.S.C. 601 *et seq.*] that this rule will not have a significant economic impact on a substantial number of small entities.

Collection of Information

This final rule contains no collection-of-information requirements under the Paperwork Reduction Act [44 U.S.C. 3501 *et seq.*].

Federalism

The Coast Guard has analyzed this final rule under the principles and criteria contained in Executive Order 12612 and has determined that the rule does not have sufficient implications for federalism to warrant the preparation of a Federalism Assessment.

Environment

The Coast Guard has considered the environmental impact of this final rule and concluded that, under paragraph 2.B.2 of Commandant Instruction M16475.1B, this rule is categorically excluded from further environmental documentation. The rule is a matter of training, qualifying, licensing, and disciplining of maritime personnel within the meaning of subparagraph 2.B.2.e(34)(c) of Commandant Instruction M16475.1B that clearly has no environmental impact. A Determination of Categorical Exclusion is available in the docket for inspection or copying where indicated under **ADDRESSES.**

List of Subjects in 46 CFR Part 10

Fees, Reporting and recordkeeping requirements, Schools, Seamen.

For the reasons set out in the preamble, the Coast Guard amends 46 CFR part 10 as follows:

PART 10—LICENSING OF MARITIME PERSONNEL

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

Authority: 31 U.S.C. 9701, 46 U.S.C. 2101, 2103, 7101, 7106, 7107; 49 CFR 1.45, 1.46; section 10.107 is also issued under the authority of 44 U.S.C. 3507.

2. Section 10.305 is revised to read as follows:

§ 10.305 Radar-Observer certificates and qualifying courses.

(a) A student who takes an approved course of training, which includes passing both a radar-theory examination and a practical demonstration on a simulator, and who meets the requirements of this section is entitled to an appropriate Radar-Observer certificate—

(1) In a form prescribed by the school and acceptable to the Coast Guard; and

(2) Signed by the head of the school.

(b) The following Radar-Observer certificates are issued under this section:

(1) Radar Observer (Unlimited).

(2) Radar Observer (Inland Waters and Gulf-Intracoastal Waterway [GIWW]).

(3) Radar Observer (Rivers).

(4) Radar Observer (Unlimited: Renewal).

(5) Radar Observer (Inland Waters and GIWW: Renewal).

(6) Radar Observer (Rivers: Renewal).

(c) A school with an approved Radar-Observer course may issue a certificate listed in paragraph (b) of this section after the student has successfully completed the appropriate curriculum as follows:

(1) Radar Observer (Unlimited). Classroom instruction—including demonstration and practical exercises using simulators—and examination, in the following subjects:

(i) Fundamentals of radar:

(A) How radar works.

(B) Factors affecting the performance and accuracy of marine radar.

(C) Purposes and functions of the main components that constitute a typical marine-radar system.

(ii) Operation and use of radar:

(A) Purpose and adjustment of controls.

(B) Detection of malfunctions, false and indirect echoes, and other radar phenomena.

(C) Effects of sea return, weather, and other environmental conditions.

(D) Limitations of radar resulting from design factors.

(E) Safety precautions associated with use and maintenance of marine radar.

(F) Measurement of ranges and bearings.

(G) Effect of size, shape, composition, and distance of vessels and terrestrial targets on echo.

(iii) Interpretation and analysis of radar information:

(A) Radar navigation (including visual techniques)—determining positions, and detecting changes in the relative motion, of other vessels.

(B) Collision-avoidance, including visual techniques, appropriate to the circumstances and the equipment in use.

(C) Determining the course and speed of another vessel.

(D) Determining the time and distance of closest point of approach of a crossing, meeting, overtaking, or overtaken vessel.

(E) Detecting changes of course or speed of another vessel after its initial course and speed have been established.

(F) Applying the Navigational Rules, Chapters 30 and 34 of Title 33 U.S. Code [Commandant Instruction M16672.2C, as amended, or equivalent], and other factors to consider when determining changes of course or speed of a vessel to prevent collisions on the basis of radar observation.

(G) Use of radar in maintaining situational awareness.

(iv) Plotting (by any graphically-correct method):

(A) Principles and methods of plotting relative and true motion.

(B) Practical-plotting problems.

(2) Radar Observer (Inland Waters and GIWW). Classroom instruction—with emphasis on situations and problems encountered on inland waters and the GIWW, including demonstration and practical exercises using simulators—and examination, in the following subjects:

(i) Fundamentals of radar:

(A) How radar works.

(B) Factors affecting the performance and accuracy of marine radar.

(C) Purpose and functions of the main components that constitute a typical marine-radar system.

(ii) Operation and use of radar:

(A) Purpose and adjustment of controls.

(B) Detection of malfunctions, false and indirect echoes, and other radar phenomena.

(C) Effects of sea return, weather, and other environmental conditions.

(D) Limitations of radar resulting from design factors.

(E) Safety precautions associated with use and maintenance of marine radar.

(F) Measurement of ranges and bearings.

(G) Effect of size, shape, composition, and distance of vessels and terrestrial targets on echo.

(iii) Interpretation and analysis of radar information:

(A) Radar navigation (including visual techniques)—determining positions, and detecting changes in the relative motion, of other vessels.

(B) Collision-avoidance, including visual techniques, appropriate to the circumstances and the equipment in use.

(C) Determining the course and speed of another vessel.

(D) Determining the time and distance of closest point of approach of a

crossing, meeting, overtaking, or overtaken vessel.

(E) Detecting changes of course or speed of another vessel after its initial course and speed have been established.

(F) Applying the Navigational Rules, and other factors to consider when determining changes of course or speed of a vessel to prevent collisions on the basis of radar observation.

(G) Use of radar in maintaining situational awareness.

(3) Radar Observer (Rivers). Classroom instruction—with emphasis on situations and problems encountered on rivers, including demonstration and practical exercises using simulators—and examination, in the following subjects:

(i) Fundamentals of radar:

(A) How radar works.

(B) Factors affecting the performance and accuracy of marine radar.

(C) Purpose and functions of the main components that constitute a typical marine-radar system.

(ii) Operation and use of radar:

(A) Purpose and adjustment of controls.

(B) Detection of malfunctions, false and indirect echoes, and other radar phenomena.

(C) Effects of sea return, weather, and other environmental conditions.

(D) Limitations of radar resulting from design factors.

(E) Safety precautions associated with use and maintenance of marine radar.

(F) Measurement of ranges and bearings, recognizing limited use of radar bearings in curving, narrow channels.

(G) Effect of size, shape, composition, and distance of vessels and terrestrial targets on echo.

(iii) Interpretation and analysis of radar information:

(A) Radar navigation (including visual techniques)— determining positions, and detecting changes in the relative motion, of other vessels.

(B) Collision-avoidance, including visual techniques, appropriate to the circumstances and the equipment in use.

(C) Applying the Navigational Rules, and other factors to consider when determining changes of course or speed of a vessel to prevent collisions on the basis of radar observation.

(D) Use of radar in maintaining situational awareness.

(4) Radar Observer (Unlimited: Renewal). Classroom instruction—including demonstration and practical exercises using simulators—and examination, in the following subjects:

(i) Interpretation and analysis of radar information:

(A) Radar navigation (including visual techniques)—determining positions, and detecting changes in the relative motion, of other vessels.

(B) Collision-avoidance, including visual techniques, appropriate to the circumstances and the equipment in use.

(C) Determining the course and speed of another vessel.

(D) Determining the time and distance of closest point of approach of a crossing, meeting, overtaking, or overtaken vessel.

(E) Detecting changes of course or speed of another vessel after its initial course and speed have been established.

(F) Applying the Navigational Rules, and other factors to consider when determining changes of course or speed of a vessel to prevent collisions on the basis of radar observation.

(G) Use of radar in maintaining situational awareness.

(ii) Plotting (by any graphically-correct method):

(A) Principles and methods of plotting relative and true motion.

(B) Practical-plotting problems.

(5) Radar Observer (Inland Waters and GIWW: Renewal). Classroom instruction—including demonstration and practical exercises using simulators—and examination, in the interpretation and analysis of radar information, including:

(i) Radar navigation (including visual techniques—determining positions, and detecting changes in the relative motion, of other vessels.

(ii) Collision-avoidance, including visual techniques, appropriate to the circumstances and the equipment in use.

(iii) Determining the course and speed of another vessel.

(iv) Determining the time and distance of closest point of approach of a crossing, meeting, overtaking, or overtaken vessel.

(v) Detecting changes of course or speed of another vessel after its initial course and speed have been established.

(vi) Applying the Navigational Rules, and other factors to consider when determining changes of course or speed of a vessel to prevent collisions on the basis of radar observation.

(vii) Use of radar in maintaining situational awareness.

(6) Radar Observer (Rivers: Renewal). Classroom instruction—including demonstration and practical exercises using simulators—and examination, in the interpretation and analysis of radar information, including:

(i) Radar navigation (including visual techniques)— determining positions, and detecting changes in the relative motion, of other vessels.

(ii) Collision-avoidance, including visual techniques, appropriate to the circumstances and the equipment in use.

(iii) Applying the Navigational Rules, and other factors to consider when determining changes of course or speed of a vessel to prevent collisions on the basis of radar observation.

(iv) Use of radar in maintaining situational awareness.

3. Section 10.306 is revised to read as follows:

§ 10.306 Radar-Operation course and certificate.

(a) A certificate of training from a Radar-Operation course may, as provided by 46 CFR 15.815(c)(2), suffice instead of a Radar-Observer endorsement. It is valid until the holder's license is renewed or upgraded, or expires, whichever occurs first.

(b) Each Radar-Operation course must contain at least 4 hours of instruction on the following subjects:

(1) Fundamentals of radar:

(i) How radar works.

(ii) Factors affecting the performance and accuracy of marine radar.

(iii) Purpose and functions of the main components that constitute a typical marine-radar system.

(2) Operation and use of radar:

(i) Purpose and adjustment of controls.

(ii) Detection of malfunctions, false and indirect echoes, and other radar phenomena.

(iii) Effects of sea return, weather, and other environmental conditions.

(iv) Limitations of radar resulting from design factors.

(v) Safety precautions associated with use and maintenance of marine radar.

(vi) Measurement of ranges and bearings.

(vii) Effect of size, shape, composition, and distance of vessels and terrestrial targets on echo.

(3) Interpretation and analysis of radar information:

(i) Radar navigation—determining the position and direction of movements of a vessel.

(ii) Collision-avoidance, including visual techniques, appropriate to the circumstances and the equipment in use.

(iii) Applying the Navigational Rules, Chapters 30 and 34 of Title 33 U.S. Code [Commandant Instruction M16672.2C or equivalent, as amended], and other factors to consider when determining changes of course or speed of a vessel to prevent collisions on the basis of radar observation.

(c) Each Radar-Operation course must be conducted by a person who possesses

the knowledge and skills taught in the course, with at least one year of experience in their practical application, except that—

(1) A marine instructor or company official may substitute a currently valid certificate from an approved Radar-Observer course (Unlimited, or Inland Waters and GIWW) for the one year of experience; and

(2) An instructor of any approved Radar-Observer course may teach a Radar-Operation course without further seagoing experience.

(d) When a holder of the Radar-Operation certificate seeks a Radar-Observer endorsement, he or she is an applicant for an original endorsement rather than for renewal of an endorsement.

4. Section 10.480 is revised to read as follows:

§ 10.480 Radar observer.

(a) This section contains the requirements that an applicant must meet to qualify as a radar observer. (Part 15 of this chapter specifies who must qualify as a radar observer.)

(b) If an applicant meets the requirements of this section, one of the following Radar-Observer endorsements will be added to his or her deck officer's license:

(1) Radar Observer (Unlimited).

(2) Radar Observer (Inland Waters and GIWW).

(3) Radar Observer (Rivers).

(c) Endorsement as Radar Observer (Unlimited) is valid on all waters. Endorsement as Radar Observer (Inland Waters and GIWW) is valid only for those waters other than the Great Lakes covered by the Inland Navigational Rules. Endorsement as Radar Observer (Rivers) is valid only on any river, canal, or similar body of water designated by the OCMI, but not beyond the boundary line.

(d) Except as provided by paragraphs (e) and (f) of this section, each applicant for a Radar-Observer endorsement or for renewal of an endorsement must complete the appropriate course approved by the Coast Guard, receive the appropriate certificate of training, and present the certificate to the OCMI.

(e) An applicant who possesses a Radar-Observer endorsement, resides in a remote geographic area, and can substantiate to the satisfaction of the OCMI that the applicant's absence will disrupt normal movement of commerce, or that the applicant cannot attend an approved Radar-Observer renewal course, may have his or her endorsement renewed upon successful completion of an examination administered by the Coast Guard, or by a third party acceptable to the Coast Guard.

(f) Except as provided by paragraph (k) of this section, a Radar-Observer endorsement issued under this section is valid for 5 years after the month of issuance of the certificate of training from a course approved by the Coast Guard. It is not terminated by the issuance of a new license during these 5 years.

(g) The month and year of the expiration of the Radar-Observer endorsement are printed on the license.

(h) A Radar-Observer endorsement may be renewed at any time.

(i) An applicant for renewal of a license that does not need a Radar-Observer endorsement may renew the license without meeting the requirements for the endorsement.

(j) An applicant seeking to raise the grade of a license or increase its scope, where the increased grade or scope requires a Radar-Observer certificate, may use an expired certificate to fulfill that requirement.

(k) The renewal date of a Radar-Observer endorsement may be extended beyond the normal 5-year duration to coincide with the renewal date of the license to which it pertains. This extension may not exceed 2 years and will be necessary only once, to synchronize the two renewal dates.

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