

MARINE SAFETY MANUAL

CHAPTER 12: LICENSING FOR ENGINEERING OFFICERS

A.	Additional Endorsements.....	12-1
B.	MMD Endorsements Accompanying Licenses	12-2
C.	Creditable Service	12-2
1.	Minimum Vessel Size.....	12-2
2.	Watchstanding Requirements	12-2
3.	Service Under License In Lieu Of Service Under QMED Rating	12-5
4.	Illegal Service	12-5
5.	Service On Uninspected Vessels.....	12-5
6.	Service As Chief Or Assistant Engineer (Limited) Or DDE	12-5
7.	Qualifying Service For Chief Or Assistant Engineer (Limited)	12-5
8.	Qualifying Service For Designated Duty Engineer (DDE).....	12-5
9.	Credit For Academy Graduates: Limited Chief Engineer	12-6
10.	Academy Graduates: Designated Duty Engineer-NMT 4000 Horsepower	12-5
11.	Credit For Academy Graduates: Designated Duty Engineer-Unlimited	12-6
12.	Maritime Administration Vessels In Reduced Operating Status (ROS)	12-6
a.	For Original Third Assistant Engineer.....	12-6
b.	Raise Of Grade.....	12-6
c.	License Renewal	12-6
d.	License Endorsements	12-6
13.	Service On T-AKR Fast Sealift Ships	12-7
D.	Propulsion Modes	12-7
1.	Minimum Service Requirements.....	12-7
2.	Gas Turbine Vessels.....	12-7
3.	Coast Guard Approved Courses.....	12-7
4.	Equivalent Service	12-8

- E. Horsepower Limitations..... 12-8
 - 1. Raising Or Removing Horsepower..... 12-8
 - 2. Minimum Service..... 12-8
 - 3. Limited Engineering License Raises Of Grade (Other Than DDEs) 12-8
 - 4. Designated Duty Engineer 12-9
- F. Fishing Industry Vessel Licenses 12-9
- G. Service Aboard Liquefied Natural Gas (LNG) Vessels 12-9
- H. OCMI’s Discretion 12-9
- I. Licenses For Mobile Offshore Drilling Units (MODUs)..... 12-9
 - 1. Licenses Limited To Non-Self-propelled MODUs..... 12-9
 - 2. Removing Non-Self-Propelled Limitations 12-9
- J. North American Trailing Company Self-Propelled Dredges 12-10
- K. T-AGOS Class Vessels 12-10
 - 1. Licenses With T-AGOS Endorsements 12-9
 - 2. Licenses Without T-AGOS Endorsements 12-10

LIST OF FIGURES

FIGURE 12-1. MULTIPLE ENGINEERING LICENSE EXAMINATIONS 12-3

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A. Additional Endorsements.

As a service to mariners, RECs should advise applicants when they may be eligible, as far as service is concerned, for other endorsements. Applicants must of course be evaluated for each endorsement. The evaluation for the additional endorsements must include determining proper horsepower limitations (if any). Refer to Figure 12-1 to see if additional examinations are required.

<u>Candidates Applying For:</u>	<u>Should Consider Applying For:</u>
First assistant engineer	Chief engineer (Limited-Oceans)
	Chief engineer uninspected FIV
	Designated duty engineer - Unl.
Second assistant engineer	Chief engineer (Limited-Oceans)
	Chief engineer (Limited-N/C)
	Chief engineer uninspected FIV
	Designated duty engineer - Unl.
Third assistant engineer*	Designated duty engineer - Unl.
	Designated duty engineer - Ltd.
Chief engineer (Limited-O)*	Chief engineer uninspected FIV
Chief engineer (Limited-NC)	Chief engineer uninspected FIV
	Designated duty engineer - Unl.
Assistant engineer (Limited)	Designated duty engineer - Unl.

*NOTE: There is no need for a chief engineer (Limited-Oceans) to have a DDE endorsement since that chief engineer license covers every case where a DDE could be employed.

B. MMD Endorsements Accompanying Licenses.

Engineers holding licenses that authorize service on inspected vessels of more than 2000 horsepower are entitled by 46 CFR 12.02-11(d)(2) to an MMD endorsed for any unlicensed rating in the engine department. Such license holders should be encouraged to obtain an MMD when the license is issued. In many cases an MMD is required to legally serve aboard a vessel. (See 46 CFR 12.02-7).

C. Creditable Service.

1. Minimum Vessel Size.

All service must be on vessels of at least 100 gross tons. This is consistent with the requirements for ratings as a qualified member of the engine department. See section 12.C.8 for exceptions for designated duty engineers.

2. Watchstanding Requirements.

Traditionally, the Coast Guard has held watchstanding experience to be an important part of the professional development of third and second assistant engineers. Technological and design advances over the last several years have led to the development of ships that can operate with unattended engine rooms. The certificates of inspection for such vessels still require licensed engineers to be on board (the engineer being on call as needed). Since the engineers are on call, such service shall be treated as though the license holder were in charge of a watch and will be creditable for a raise in grade.

FIGURE 12-1: MULTIPLE ENGINEERING LICENSE EXAMINATIONS

Individuals applying for multiple engineering licenses need only be examined by one examination series. The examinations in the left-hand column adequately test for any additional endorsements that is marked on the corresponding horizontal line. The additional endorsements shall be of the same propulsion mode(s) for which the applicant is examined. Any horsepower limitations associated with the application will also apply to the additional engineering licenses. Refer to Figure 19-1 for engineering license equivalencies

ADDITIONAL ENDORSEMENTS PERMITTED							
EXAM SERIES	CHIEF- LTD OCEANS	CHIEF LTD N/C	ASST. ENG. LTD	CHIEF UFIV	ASST. ENG. UFIV	DDE UNLTD	DDE LTD
CHIEF ENGINEER — UNLTD							
FIRST ASST. ENGINEER	•			•		•	
SECOND ASST. ENGINEER	•			•		•	
THIRD ASST. ENGINEER						1	•
CHIEF LTD — OCEANS				•		•	
CHIEF LTD — NEAR COASTAL				•		•	
ASST. ENGINEER LTD					•	•	
CHIEF ENGINEER UFIV			•				•
ASST. ENGINEER UFIV							•
DDE UNLIMITED¹			•		•		
DDE LTD							

1. Graduates of a maritime academy with a third assistant engineer license and endorsed with DDE Limited, may apply for DDE Unlimited after obtaining six months sea service as a DDE Limited and a letter of recommendation from the company with whom they served, and be granted the endorsement

without further testing.

3. Service Under License In Lieu Of Service Under QMED Rating.
46 CFR 12.02-11(d)(2) implies that either a license for inspected vessels of more than 2000 horsepower (1500 kW) or an MMD endorsed for "Any Unlicensed Rating" in the engine department authorizes the holder to serve in any unlicensed capacity in the engine department. Unlicensed service obtained under such a license is acceptable even if the mariner did not hold the accompanying MMD endorsement. However, the service must have been legal, e.g., an MMD was not required under 46 CFR 12.02-7 or the mariner held an MMD with entry ratings.
4. Illegal Service.
Unlicensed service as assistant engineer or chief engineer on ocean or near coastal vessels of 200 gross tons or more is illegal and is not creditable service. The only exceptions to this are public vessels, wooden vessels of primitive build and barges.
5. Service On Uninspected Vessels.
When upgrading unlimited licenses, third, second and first assistant engineers frequently present time served as engineer on uninspected vessels that are not required to have licensed engineers and do not have engineering watchstanders. Service on these vessels may be credited as third or second assistant engineer service (depending on the license held) if the applicant was a full-time engineer and was responsible for the engineering plant. It may not be credited as first assistant engineer service since vessels that do not require licensed engineers usually do not have auxiliary, cargo and electrical systems comparable to vessels with licensed engineers. Only service as an actual first assistant engineer can satisfy the first assistant engineer requirements for advancement to unlimited chief engineer.
6. Service As Chief Or Assistant Engineer (Limited) Or DDE.
Service as chief engineer (limited), assistant engineer (limited) or DDE, may be credited as third or second assistant engineer service (depending on the license held). Only service as an actual first assistant engineer can satisfy the first assistant engineer requirements for advancement to unlimited chief engineer.
7. Qualifying Service For Chief Or Assistant Engineer (Limited).
The phrase "equivalent supervisory position" concerning qualifications for licenses as chief and assistant engineer (limited), refers to service in a position as an engineer rating on vessels where engineering licenses and QMED ratings are not required (e.g., tugs, fishing vessels, etc.).
8. Qualifying Service For Designated Duty Engineer (DDE).
The above interpretation of "equivalent supervisory position" also applies to DDE. To be creditable toward DDE, the service must have been as a full time engineer in an operating engine room. OCMI's may accept service on vessels less than 100 gross tons provided the vessel has a "walk in" engine room with an engineering plant comparable to vessels over 100 gross tons (e.g., electrical generators and other auxiliaries independent of the main engines).

9. Credit For Academy Graduates: Limited Chief Engineer.

When academy graduates, who are qualified as third assistant engineer under 46 CFR 10.516(a)(3), apply for licenses as chief engineer (limited - oceans), chief engineer (limited - near coastal), or chief engineer of uninspected fishing industry vessels (UFIVs), they may be allowed three years sea service credit for their academy training, when they have acquired one year of sea service as a licensed engineer. Two years of the credit may be considered, for evaluation purposes only, as QMED service. None of it shall be considered service as a licensed engineer.

10. Academy Graduates: Designated Duty Engineer-NMT 4000 Horsepower.

When an academy graduate can demonstrate that industry specific training has been provided prior to graduation, an endorsement for designated duty engineer (DDE) - Limited-4000 hp (3000 kW), may be applied for and added to a third assistant engineer license without further testing. Where the training program is unable to demonstrate that industry specific training has been provided prior to graduation, the applicant may reapply for the endorsement after completing the following:

- (a) 60-days of sea service in any capacity in the engine room; or,
- (b) an approved program of industry specific training following graduation.

11. Credit For Academy Graduates: Designated Duty Engineer-Unlimited.

Since persons serving under a DDE Unlimited license may be the sole engineer on board these vessels and do not have a more experienced engineer to turn to, hands-on experience as a DDE-Limited Engineer is an important supplement to their onshore training. When applying for an endorsement as designated duty engineer (DDE) - Unlimited HP (more than 4000 hp/ 3000 kW), they may be allowed, for the purpose of evaluation only, to present a written recommendation on company letterhead after six months sea service in a licensed capacity and be granted this endorsement without further examination.

12. Maritime Administration Vessels In Reduced Operating Status (ROS).

The Maritime Administration maintains some of their vessels in ROS with a limited crew, usually by contract with a commercial shipping company. Service on ROS vessels will be credited as normal sea service when they are underway and fully manned. During all other times service should be credited as follows:

- a. For Original Third Assistant Engineer.
One day credit for every three days worked up to a maximum of three months credit. None of the credit shall be considered QMED service.
- b. Raise Of Grade.
Service as a licensed engineer will be evaluated under 46 CFR 10.211(b)
- c. License Renewal.
One day credit for every three days worked toward meeting the sea service requirement for renewal.
- d. License Endorsements.
No credit will be given toward horsepower increases or qualification in another propulsion mode.

13. Service On T-AKR Fast Sealift Ships.

The T-AKR fast Sealift ships (former Sealand SL-7s) are maintained in reduced operating status with a partial crew. The crew receives experience that is similar, to a degree, to the experience received on an underway vessel. However, the engineers do not normally stand "steaming" watches while in reduced status. Therefore, first assistant engineers may receive 50 percent credit for their service, up to a maximum of six months creditable service. Third and second assistant engineers may only receive credit for underway watchstanding service.

D. Propulsion Modes.

Engineering licenses are issued for service on steam vessels or motor vessels, or both.

1. Minimum Service Requirements.

For original or raise of grade of engineer licenses, at least one-third of the required service must have been obtained on vessels of the particular mode of propulsion for which application is made. An applicant holding a license endorsed for a single propulsion mode may qualify in the other propulsion mode by meeting one of the provisions of 46 CFR 10.502(b). Applicants may also qualify by accumulating the additional time needed to have one-third of the total required experience on vessels of that mode. This is one of the few instances where service acquired before the issuance of a license may be used for the addition of an endorsement (46 CFR 10.207(c)(3)).

EXAMPLE: A third assistant engineer of steam and motor vessels (3 A/E Steam & Motor) presents ten months service on motor vessels and 2 months service on steam vessels. The applicant qualifies for second assistant engineer of motor vessels (2 A/E Motor) but lacks two months service on steam vessels to qualify as 2 A/E Steam. After obtaining the license as 2 A/E Motor, the applicant may later obtain two more months service as 3 A/E Steam and qualify for 2 A/E Steam.

2. Gas Turbine Vessels.

A motor license and a steam license both qualify the holder to serve on board gas turbine propelled vessels. No specific endorsement is needed. Service obtained aboard gas turbine propelled vessels may be credited as both motor service or steam service, but can not be credited twice. For example, an applicant for a raise of grade from 3 A/E of Steam and Motor Vessels to 2 A/E of Steam and Motor Vessels has 360 days of gas turbine service. The time may be credited as 120 days towards each mode and 120 days towards satisfying the 360 day requirement.

3. Coast Guard Approved Courses.

A course approved for engineers adding a propulsion mode may be repeated for credit at each license grade.

4. Equivalent Service.

Equivalent service allowed under 46 CFR 10.211(b) is considered as neither motor service nor steam service. It can be used to meet the total service requirements but not the service required to qualify for a particular mode of propulsion. Credit given for academy service is neither steam service nor motor service. The one-third criteria of 46 CFR 10.502(a) for qualifying in a particular propulsion mode should only be applied to the service needed along with the academy credit.

E. Horsepower Limitations.

Total main engine shaft horsepower is to be used when evaluating engineering service. The horsepower of auxiliaries will not be considered regardless of how large they may be. Refer to the Marine Safety Information System (MSIS), Merchant Vessels Of The United States, CG-408, and publications such as Jane's Fighting Ships and Lloyd's Register for horsepower.

1. Raising Or Removing Horsepower.

The procedures for raising or removing horsepower limitations on licenses are contained in 46 CFR 10.502 and 10.503. Cases requiring special consideration may be referred to NMC-4C for evaluation.

2. Minimum Service.

For engineers qualifying in both propulsion modes, the horsepower limitation will be computed for each propulsion mode. 46 CFR 10.502 requires one third of the minimum service requirements to be on the particular propulsion mode for which applied. If all of that "one third" is on vessels of at least 4000 horsepower, the applicant qualifies for an unlimited horsepower license in that mode. If it is not, compute a horsepower limitation for that propulsion mode by applying the 25 percent and 50 percent criteria of 46 CFR 503(b) to the entire minimum service requirement.

3. Limited Engineering License Raises Of Grade (Other Than Designated Duty Engineers).

Although the regulations state the service requirements for all limited engineer licenses in terms of the total service required, horsepower limitations for raises of grade should be determined based on the additional service needed for the raise of grade.

EXAMPLE: An assistant engineer of uninspected fishing industry vessels applies for a raise of grade to chief engineer and presents a year of service in addition to the three years already presented to qualify for the assistant engineer license. Although 46 CFR 10.530(c) requires four years of service to qualify for this license, the horsepower limitation should be based on the one year of additional service needed to raise the license from assistant engineer to chief engineer. This is consistent with the way horsepower limitations are determined for upper level licenses. However, for an original license as chief engineer of uninspected fishing industry vessels, the horsepower limitation is based on the entire four years of service required.

4. Designated Duty Engineer.

The only horsepower levels for designated duty engineer are 1000, 4000, and any horsepower. They are determined by the amount of qualifying service rather than the horsepower of the vessels on which the service was obtained. The criteria for each limit is set forth by 46 CFR 10.524(b).
- F. Fishing Industry Vessel Licenses.

Fishing industry vessel licenses are only needed for offshore service. They are issued to comply with 46 U.S.C. 8304, which requires engineers on vessels of at least 200 gross tons operating upon the high seas to be licensed.
- G. Service Aboard Liquefied Natural Gas (LNG) Vessels.

The chief engineer, first assistant engineer and cargo engineer serving aboard LNG vessels shall be specially trained to carry out their duties. Successful completion of an approved Tankerman - PIC LG course can be used for this purpose.
- H. OCMI's Discretion.

In unusual circumstances, an OCMI may endorse a license for a limited increase in horsepower in a lower grade, after reviewing the applicant's experience, the license(s) held, and examinations taken. Similarly, the OCMI may permit an applicant holding a license endorsed for 4000 horsepower or more to be examined for a raise to the next higher grade of license. This shall be limited to 20 percent of the horsepower of the license held (not to exceed 2000 horsepower). These provisions shall be used only when the applicant has a firm commitment of employment; the increase in scope or raise of grade shall be limited to cover the vessel to which the applicant will be assigned. Extreme caution must be applied in cases of this nature.
- I. Licenses For Mobile Offshore Drilling Units (MODUs).

The regulations prescribe chief engineer and assistant engineer licenses for MODUs. They permit service on both self- propelled and non-self-propelled units. In every case a certain amount of service is required to be on self-propelled units to qualify for a MODU license.
1. Licenses Limited To Non-Self-propelled MODUs.

Although the regulations do not provide for licenses limited to non-self-propelled MODUs, the Coast Guard recognizes there is a need for such licenses. A license limited to non-self-propelled MODUs may be issued to applicants that qualify for a standard MODU license in all respects, including total sea service, other than having the required service aboard self-propelled MODUs. Such applicants may elect to take a limited examination. A limited examination is a standard examination with inapplicable questions deleted.
2. Removing Non-Self-Propelled Limitations.

Licenses limited to non-self-propelled MODUs may be converted to standard MODU licenses by showing the necessary service aboard self-propelled MODUs and completing any examination deficiencies.

J. North American Trailing Company Self-Propelled Dredges.

North American Trailing Company owns four self-propelled dredges that are over 2200 gross tons. Chief engineers (limited) and designated duty engineers may serve on the vessels as licensed engineers on inland waters, but because of the vessels' tonnage, not on the Great Lakes or offshore waters. Unlimited chief and assistant engineer licenses are needed to serve aboard the vessels when they operate on the Great Lakes or offshore. To meet the needs of the industry, a holder of a second assistant engineer license of motor vessels of any horsepower may upgrade to a chief engineer license limited to the dredges operated by North American Trailing Company of not more than 5000 horsepower. The applicant must submit a letter from the company requesting this limited chief engineer license and pass the engineering safety module of the chief engineer's examination. The intent of the endorsement is for the company to meet the manning requirements and allow licensed engineers on board North American Trailing Company's dredges to continue to obtain qualifying service toward a first assistant engineer license.

K. T-AGOS Class Vessels.

This policy only applies to the STALWART class T-AGOS vessels, T-AGOS 1 through T-AGOS 18. They were originally admeasured as less than 1600 gross tons and later re-admeasured as over 1600 gross tons. This tonnage increase prevented chief engineers (limited) and assistant engineers (limited) from continuing to serve on them. The following policy is intended to allow engineers that have served on the STALWART class T-AGOS vessels to continue serving on them. Service aboard them is creditable toward unlimited licenses (note: they are 1600 horsepower).

1. Licenses With T-AGOS Endorsements.

Licenses as chief engineer or first assistant engineer of STALWART class T-AGOS vessels remain in effect and may be renewed. They may not be used to bypass any grade in the normal licensing progression.

2. Licenses Without T-AGOS Endorsements.

Chief engineers (limited) qualify for endorsement as chief engineer of STALWART class T-AGOS vessels if they served as chief engineer on them. They qualify for endorsement as first assistant engineer of STALWART class T-AGOS vessels if they served as assistant engineer aboard them. Second and third assistant engineers and assistant engineers (limited) qualify for endorsement as first assistant engineer of STALWART class T-AGOS vessels if they served as assistant engineer aboard them. These endorsements will not be given to any other applicants. Newly hired engineers must have an appropriate upper level license.

