



U.S. Department
of Homeland Security

United States
Coast Guard



Guide for Administration of Merchant Marine Engineering Examinations (Engineering Guide)

August 2008

This Publication provides guidance for NMC evaluators and personnel who actively monitor applicants in the exam room



August 1, 2008

From: D. C. STALFORD, CAPT
CG NMC

To: Distribution

SUBJ: GUIDE FOR THE ADMINISTRATION OF MERCHANT MARINE ENGINEERING
EXAMINATIONS (ENGINEERING GUIDE)

Ref: Code of Federal Regulations Title 46, Parts 10 and 12

- 1) PURPOSE. This manual provides guidance for personnel who monitor merchant marine applicants in the exam room of the Regional Examination Centers (REC). NMC evaluators are to use this publication to determine which modules are to be administered for a given license level and what training is acceptable in lieu of an examination module.
- 2) ACTION. Commanding officers of units with marine safety responsibilities should bring this manual to the attention of the maritime industry with interests in marine personnel issues and to institutions that offer U.S. Coast Guard approved training. This manual will be distributed by electronic means only. It is available on the World Wide Web at <http://www.uscg.mil/stcw/training/EngGuide.pdf>.
- 3) DIRECTIVES AFFECTED. The previous edition of the Engineering Guide dated February 2008 is cancelled.
- 4) DISCUSSION.
 - a) The Examination Structure Sheets (ESS) contained in this manual reference the written examinations for each license and document.
 - b) The Coast Guard has developed an electronic distribution system of examination modules to improve examination quality and productivity. This manual reflects these changes and complements the use of the electronic distribution system.
- 5) PROCEDURE.
 - a) The Examination Structure Sheets contained in this manual are effective August 2008 and the previous *Engineering Guide*, dated February 2008, is cancelled.
 - b) The ESS contains detailed information for each license exam. Consult the ESS for unique directions, presentation order of examination modules and guidance on courses accepted in lieu of an examination module.

6. PROCUREMENT INFORMATION. Distribution will be provided by electronic means for local reproduction only from the Internet at <http://www.uscg.mil/stew/training/EngGuide.pdf>. Comments can be made to Commanding Officer, National Maritime Center (NMC-2), 100 Forbes Drive, Martinsburg, WV 25404 or by calling (304) 433-3400.



D. C. STALFORT
Captain, U.S. Coast Guard

Dist: Commandant (CG-522)
Areas (Ap, Pp)
All District Commanders (P)
All Sector Commanders
All RECs

INTRODUCTION

In its guidance on the Evaluation of Competence, the Seafarers Training, Certification, and Watchkeeping Code (STCW) states:

“Scope of knowledge is implicit in the concept of competence. Assessment of competence should, therefore, encompass more than the immediate technical requirements of the job, the skills and tasks to be performed, and should reflect the broader aspects needed to meet the full expectations of competent performance as a ship’s officer. This includes relevant knowledge, theory, principles and cognitive skills which, to varying degrees, underpin all levels of competence.”

For reasons such as these the Coast Guard continues to view its written examinations in addition to the training and practical demonstrations as an essential part of the process in developing the mariner's competency.

This Publication has been designed primarily for the use of NMC evaluators and personnel who are actively engaged in overseeing applicants in the exam room. If you have any questions concerning the engine department examinations or suggestions for improvements to the Exam Structure Sheets or other sections of this manual, please contact:

Mariner Training and Assessment Division (NMC-2)
U.S. Coast Guard National Maritime Center
100 Forbes Drive
Martinsburg, WV 25404

Title 46 Code of Federal Regulations Part 10 instructs the Officer in Charge Marine Inspection (OCMI) to conduct a Professional Examination of applicants for original issues, raises in grade, increases in scope, and renewals of licenses. The examination follows a determination by the OCMI that the applicant’s training, appropriate practical demonstrations, and experience is satisfactory and they are eligible in all other respects. The purpose of this Publication is to help identify the appropriate professional examination for the OCMI’s use, and provide guidelines for the uniform administration of the examinations.

If you need further information or assistance with respect to these Exam Structure Sheets, please do not hesitate to call the USCG National Maritime Center at:

POC: Engine Team Leader
Tel: (304) 433-3710
Fax: (304) 433-3408
E Mail: D05-DG-NMCETeam@uscg.mil

TABLE OF CONTENTS

GENERAL

	<u>Page</u>
Instructions.....	6-8
Rules of the Exam Room.....	9
Comment-Protest Sheet.....	10
Duties of an Examiner.....	11
General Instructions.....	12
Summary of Examination Modules for Engineering.....	13
License Examination Equivalency Table.....	14

SECTION ONE

Unlimited Engineer Examinations	15
Introduction.....	16
Examination Structure Sheets Index.....	17
Quick Reference.....	18
Examination Structure Sheets–Unlimited Engineers.....	19-25

SECTION TWO

Limited Engineer Examinations	26
Introduction.....	27
Examination Structure Sheets Index.....	28
Quick reference.....	29
Examination Structure Sheets-Limited Engineers.....	30-33

SECTION THREE

MODU Engineer Examinations	34
Introduction.....	35
Examination Structure Sheets – MODU Engineers.....	36

SECTION FOUR

Unlicensed Engine Rating Examinations	37
Introduction.....	38
Examination Structure Sheets-Unlicensed Ratings.....	39-41

SECTION FIVE

Appendix	42
Lifeboatman Practical Demonstration.....	43-53

INSTRUCTIONS

1. Examination Structure Sheets (ESS). The contents of each exam incorporating the use of test module(s) and the instructions for its administration are detailed in individual Exam Structure Sheets (ESS). There is an ESS for each license/document action for which an examination is required. Each examination is made up of one or more modules (tests). All the modules that might be required for a particular license or document action are shown, however, you may not need all modules. Further instructions are provided on the individual ESS in those cases. Depending on the license/rating/endorsement for which the applicant is being examined, modules unique to a particular exam may be combined with generic modules, which are common to several exams. Each module is graded independently unless otherwise indicated.
2. Exam Room Materials. Engineering exam illustrations will be provided at the back of each exam module booklet. With the exception of providing 46 CFR Parts 1-199 and 33 CFR Parts 1-199, no other reference materials are permitted except for the open book renewal exercise. Only non-programmable calculators are permitted. Review your libraries to ensure that these publications, and ONLY these publications, are available to the applicant. Regional Exam Centers (RECs) should keep reference materials current.
3. Exam Room Rules. The Rules of the Examination Room are listed on pages 9-10 of this publication.
4. Exam Procedure. When an applicant submits an application, he or she should be prepared to be examined on all the material applicable to the license or document for which the application has been made. To allow Exam Room Supervisors to manage their time and resources, it is recommended that applicants be required to make appointments for all exams. Subject to the Exam Room Supervisor's discretion, applicants may start the exam on any day the office is open. A limit of 3½ hours may be provided to each applicant to complete a test module. The examination fee set out in 46 CFR table 10.109 in Sec. 10.109 must be paid before the applicant may take the first examination section.
5. Exam Administration. When administering an examination or a complete re-examination for any license or document:
 - a. An applicant must complete all exam modules on consecutive days.
 - b. An applicant may attempt as many modules as can be completed within the normal working hours of the examination room, provided a minimum of two modules are completed per day, with approximately 3½ hours allowed for each module.
 - c. Administration of modules is to be in the order chosen by the applicant at the time the appointment to test was made. If no order is chosen, then the administration of the exams will be made in the order listed in the ESS.
 - d. All of the modules comprising an exam must be completed one time before beginning retakes.
 - e. Applicants for any license level or document should not be stopped from testing even if they fail one or two modules. This ensures that the applicant will not be penalized if there is any change to the crediting of the score of an examination module through the protest process or if a correction to an exam content is determined to be necessary.
 - f. If an applicant for an unlimited license fails three (3) modules at any time during the examination, the candidate is not to be permitted to continue testing on any ensuing module.
6. Retest Policy.
 - a. If an applicant for an **unlimited** license fails three or more sections, a complete reexamination must be administered. On the subsequent exam, if the applicant again fails three or more sections, at least 3 months must lapse before another complete examination is attempted, and a new examination fee is required.
 - b. If an applicant fails only one or two sections during their second attempt refer to (c) & (d).

Instructions (continued)

- c. If an applicant fails one or two sections of an examination, the applicant may be retested twice as is necessary on each failed section during the next 3 months.
 - d. If the applicant does not successfully complete each failed section within the three (3) month period, a complete examination must be administered after a lapse of at least three (3) months from the date of the last retest, and a new examination fee is required.
 - e. The 3 month retest period may be extended by the OCMI if the applicant presents discharges documenting sea time which prevented the taking of a retest during the 3 month period. The retest period may not be extended beyond 7 months from the initial examination.
 - f. The scheduling of **all other** engineering examinations will be at the discretion of the OCMI. In the event of a failure, the applicant may be retested twice whenever the examination can be rescheduled with the OCMI. The applicant must be examined in all of the unsatisfactory sections of the preceding examination. If the applicant does not successfully complete all parts of the examination during a 3-month period from the initial test date, a complete reexamination must be taken after a lapse of at least 2 months from the date of the last retest, and a new examination fee is required.
 - g. Applicants failing several portions of an examination or those failing one module with an extremely low score should be encouraged to study before attempting a reexamination.
7. **Coordination.** When situations arise that require a departure from these instructions please request guidance from the National Maritime Center (NMC-2) in writing (e-mail is acceptable). State the license or document for which application has been made, and why the applicant's circumstances are different from the norm. NMC will respond in writing to all RECs. In a spirit of fairness and in order to foster good customer relations all applicants are to be treated the same, regardless of where the applicant is being served.
 8. **Planning.** When planning the administration of an exam away from the REC and the Traveling Exam Team (TET) requires support from NMC-2, please ensure that advance notice of 30 days is provided in writing by e-mail or fax. The POC for Engineering Exams is to be the Engine Team Leader, with a copy to the Division Chief, NMC-2.
 9. **Two Modules.** Where the ESS indicates two Engineering Modules labeled as Part I and Part II, they are to be graded individually and not to be considered as one module.
 10. **Full Exams Required.** A full examination is required in all cases in which an applicant has applied to change tonnage groups, horsepower or otherwise raise the grade of his or her license.
 11. **Comments and Protests.** If a candidate believes there is something wrong with a question that prevents it being answered correctly, i.e., no correct answer, question is poorly worded, etc, he or she must state in writing all the details regarding the discrepancies on a *Comment-Protest* sheet. The candidate must include his or her reasons and all calculations for math problems, such as pump capacity, stability, or cargo, etc and provide what he or she believes to be the correct answer. All comments, even if they will not affect the candidate's grade, are valuable and will be used to improve the quality of the questions used on future tests. If a candidate fails the exam module and has submitted comment sheets when turning in the completed answer sheet for grading, each comment sheet for a question not receiving credit will then become a *protest* for that question. Further, if the candidate fails the examination module by no more than one question, he or she will be given the opportunity to review each question for which credit was not given. Immediately after the review and prior to leaving the exam room, the candidate may submit a protest sheet for no more than two questions as indicated above. These two *protests* are in addition to any *comments* submitted prior to grading the answer sheet that subsequently change from a *comment* to a *protest*. Once the candidate has reviewed his or her answer sheet and leaves the exam room for **ANY REASON** before submitting their protest, the protests will not be accepted.

Instructions (continued)

12. Multiple Ratings. When a candidate requires testing for multiple ratings, the method for assigning modules for the exam should be done in two steps. The first step is assignment of all applicable modules for the highest license. The second step is assignment of the modules for the lesser license(s) not included in the higher. Exceptions to this method may be necessary where other variables are involved.
13. Answer Sheets. To gather statistics on the exam questions, NMC-2 is scanning the results into a database. All original answer sheets must be mailed to the National Maritime Center monthly. It is essential that the original Merchant Marine Examination Question Selection/Answer Sheet (CG-5164) for each candidate be forwarded since copies do not scan well. The forms are available from the Engineering Logistics Center. **For the scanning system to work properly, the candidate must darken the appropriate spaces for their social security number, module number and test number at the top of the form as well as their choice of answer for each question. Do not accept for grading any CG-5164 whose information block at the top of the form is incomplete.** Do not make any administrative marks in the answer fields.
14. Oral Assisted Examinations. Guidance is provided in the USCG Marine Safety Manual, Volume III, Chapter 5, Section a-5.
15. Calculators. Applicants may use calculators, but are not permitted to use preprinted forms during the examinations. All calculators must meet the following standards:
 - a. It must not use pre-programmed strips or chips or any other pre-programmed device that may be inserted into the calculator.
 - b. It may not be a permanently programmed specialty computer, such as a navigation computer. Computers capable of generating trigonometric functions, logs and antilogs, squares, cubes, and roots thereof, are acceptable provided they meet the other requirements.
 - c. Any manually programmable calculator without simple erasure capability is not permitted.
 - d. Any printed calculator tape must be turned in at the end of the exam with any scratch paper.
16. Duties of an Examiner. General guidance regarding the duties of an Exam Room Supervisor is included on page 11.
17. Examination Scheduling. To accommodate the special circumstances involved, the graduating class of State and Federal maritime academies may be examined by the cognizant OCMI (REC), at any time after the first semester of the senior year. Examinations for other applicants may be administered only when all regulatory prerequisites are completed. Other applicants should be scheduled in accordance with the guidance provided in preceding paragraphs.

RULES OF THE EXAMINATION ROOM

1. The normal work hours for this center are _____ to _____. The exam room will be opened ____to_____.
2. Handbags, briefcases, pagers, cellular phones, books, notes, etc. are not allowed in the Exam Room. You are to provide your own personal plotting equipment. Programmable calculators are not allowed in the exam room. During the examination you may not refer to any material other than that specifically authorized by the Examiner.
3. Anyone engaged in any form of cheating during the exam, such as, referring to concealed notes, communicating with or copying work from other examinees, removing written material from the exam room, or any other dishonest practice, will be dismissed from the exam room and will be considered to have failed the entire exam. A re-exam will not be permitted for six months. Those examinees already holding a Merchant Mariner's Document or Coast Guard license may be summoned to appear before an Administrative Law Judge where their license may be suspended, or revoked, or other penalties assessed.
4. Examinees are not permitted to leave the exam room before a module is completed. Head (restroom) calls are not normally permitted. However, if required, the examinee shall be escorted to insure that no attempt is made to access additional information related to the exam. See Item #3. Upon completion of a module, all reference publications must be returned to their proper location in the exam room. The answer sheet and scratch paper is to be placed inside of the front cover of the booklet and given to the Examiner.
5. Eating and drinking is not permitted in the exam room.
6. Administration of modules is in the order chosen by the applicant at the time the appointment to test was made or before the first module is administered. If no order was chosen, then the administration of the modules will be made in the order listed in the ESS. A candidate may attempt as many modules as can be completed within the normal working hours of the examination room, provided a minimum of two modules are completed per day, with 3½ hours allowed for each module. All modules must be completed on consecutive days.
7. Once a module has been started, you are obligated to complete it. If an answer sheet is submitted with unanswerd questions, these questions will be considered to have been answered incorrectly, which may result in a failing score.
8. Do not write or mark in the test booklets or any reference material. If you notice any marks in a test booklet or in any reference material, please notify the Examiner.
9. The candidate must darken the appropriate spaces for their social security number, module number and test number at the top of the answer sheet form (CG-5164). The Examiner will not accept for grading any answer sheet whose information block at the top of the form is incomplete.
10. If you feel a question is faulty, unclear, or has no correct answer indicated, choose the best answer, mark the answer sheet accordingly, and complete a COMMENT - PROTEST SHEET provided by the Examiner. Explain as clearly as possible the specific concern or objection to the question. If you feel there is a better answer, you must **show** how you arrived at your answer including all **computations** for navigation and other mathematical problems. **An answer must be indicated on the answer sheet.** Once the candidate has reviewed his or her answer sheet and leaves the exam room for ANY REASON before submitting their protests, the protests will not be accepted.
11. The Examiner is always available to assist you. However, the Examiner cannot discuss question content with you. See Item 10.

I HAVE READ AND UNDERSTAND THE ABOVE RULES.

I ALSO UNDERSTAND THAT I MUST COMPLETE THE ENTIRE EXAM, INCLUDING RETESTS IF ANY, WITHIN 90 DAYS OF THE BEGINNING OF THE EXAM CYCLE.

SIGNATURE: _____

DATE: _____

COMMENT - PROTEST SHEET

(For Coast Guard use only) _____ COMMENT _____ PROTEST

APPLICANT'S NAME: _____

MODULE NAME: _____

MODULE NUMBER: ___/___/___/___/___ - ___/___/___/___ QUESTION NUMBER: _____

If you believe there is something wrong with a question that prevents it being answered correctly, i.e., no correct answer, or that you believe there is more than one correct answer shown, or the question is poorly worded, etc, please give all the details below. **Include** your reasons and all **calculations** for math problems such as pump capacity, navigation, stability, or cargo. **Provide** what you believe to be **the correct answer**. Even if your comments will not affect your grade, they are considered very valuable and will be used to improve the quality of the questions used on future tests. If you fail this exam and submit your comments with your completed answer sheet, for each comment sheet for a question you did not receive credit will then become a protest for that question. Further, if you fail the examination module by no more than one question, you will be given the opportunity to review each question for which you were not given credit. Immediately after your review and without leaving the exam room following your review you may submit a protest as indicated above on no more than two questions in addition to the comment sheets you had submitted. If you review your answer sheet and leave the exam room for **ANY REASON**, prior to submitting your protests they will not be accepted.

SIGNATURE: _____ DATE: _____

DUTIES OF AN EXAMINER

TYPICAL EXAMINATION PROCESSES

The examiner will verify the order of modules either at the time the appointment to test has been made or prior to when the first module is administered. At the appropriate time, the examiner selects the modules from MMLD PROD and downloads the appropriate modules AND answer keys in preparation for the applicant's examination.

On the appointed morning after the appropriate exam fees are paid, the examiner identifies the applicant, reviews with the applicant the test procedures, reference material that may be available, and the operating procedures and rules of conduct during the exam. The applicant is given the initial module, a blank answer sheet and instructions specific to the particular test module. After the applicant completes the module and submits the answer sheet, the examiner is to perform an initial review to ensure that it is completed correctly. The applicant may then be given another test module if time permits and the applicant desires, or further testing may be deferred until the afternoon session or the following morning. The answer sheet is scored, the applicant informed of the results, and the results entered on the appropriate record. If the applicant has failed the module by no more than one question, the examiner will allow a review of the module and submission of a protest if the applicant desires. If a protest is submitted, the examiner faxes it to the National Maritime Center for review. Upon receipt of the results of the review, the applicant is advised. These procedures continue until the applicant has completed all modules that are part of the examination.

During the actual testing, the examiner oversees the exam room to preclude cheating, answers procedural questions, and provides information if the applicant desires to comment on a question. If cheating is detected, the examiner takes steps to bar the applicant from further testing for six months. At the end of the workday, the examiner accounts for all modules used; shreds used modules, scrap paper, and used charts; and prepares for the next day of testing.

After the final module is completed, examiner will make entries into MMLD and send email to NMC-5 evaluator for license issuance. If the applicant failed the examination, he or she is advised of the next steps in the testing process and another examination date is scheduled if the applicant remains eligible.

GENERAL DUTIES NOT INCLUDED ABOVE

- a. Reviews reference material to ensure that sufficient copies are available, that they are in satisfactory condition, that extraneous markings are removed, and that the material is stowed in an orderly fashion. When necessary, orders new reference material for addition to the library and purges outdated material.
- b. Ensures that consumables are adequate. Orders extra consumables when necessary.
- c. Checks examination room after closing for evidence of cheating and takes appropriate action to identify the cheater if evidence is found.
- d. Ensures that furniture in the exam room is adequate for intended use and in good, safe condition. If not, takes appropriate action to remedy.
- e. Maintains a daily log of the persons tested.
- f. Ensures that modules and completed answer sheets are filed with adequate security.

General Instructions for the Administration of Engineering Exams

1. The Engine Guide is divided into four sections, in addition to an appendices section, according to the engineering level for which an applicant will be examined. Each section contains an introduction and the examination structure sheets for administering all engineering exams and required subjects. The sections for the unlimited and limited engineering license examinations also contain an index to the examinations within the section and a quick reference table.
2. This introduction lists general policy applicable to all engineering examinations in each section.
3. The quick reference sheet shows at a glance the number of modules required for each examination and provides a quick comparison of the total number of modules required to test an applicant at each license level.
4. A module code is a five-digit number that specifically identifies an examination module. The *first* digit specifies the license area of the exam; e.g., 5XXXX, upper level licenses; 6XXXX, lower level licenses; and 8XXXX, QMED ratings. The *second* digit specifies the level of the exam, such as 50XXX, upper level, chief engineer, unlimited horsepower. The *third* digit specifies the examination subject area, such as 504XX, upper level, chief engineer, unlimited horsepower, electricity. The fourth (4) digit is used to indicate the year in which the module is generated, i.e., 50451 indicates a module generated in the year 2005. The fifth (5) digit represents the version generated in that year, such as modules 50451 and 50452, whereas 1 and 2 are the respective version numbers. Different versions of the test are used to vary the distribution of questions selected from the subject areas included in a typical module and the use of different versions is encouraged.
5. Each section provides all the examination structure sheets within the specific section of the Engineering Guide and the numbered, applicable examination structure sheets for a particular examination.
6. The order in which the examination structure sheets are presented represent a progression of the unlimited engineer licenses beginning with the third assistant engineer (53XXX), then second assistant engineer (52XXX), then first assistant engineer (51XXX), and ending with chief engineer (50XXX).
7. The applicable examination structure sheet contains the specific policy that applies to a particular license examination and/or its assessment process.

SUMMARY OF EXAMINATION MODULE CODES

SECTION ONE - UNLIMITED ENGINEERING LICENSES

<u>MODULE CODE</u>	<u>MODULE NAME</u>
50XXX	UNLIMITED CHIEF ENGINEER
51XXX	UNLIMITED FIRST ASSISTANT ENGINEER
52XXX	UNLIMITED SECOND ASSISTANT ENGINEER
53XXX	UNLIMITED THIRD ASSISTANT ENGINEER
54XXX	UNLIMITED CHIEF / FIRST ASSISTANT ENGINEER, ENDORSEMENT
55XXX	UNLIMITED ENGINEERING LICENSES, RENEWAL EXERCISE

SECTION TWO - LIMITED ENGINEERING LICENSES

<u>MODULE CODE</u>	<u>MODULE NAME</u>
60XXX	CHIEF ENGINEER, LIMITED
61XXX	ASSISTANT ENGINEER, LIMITED / DDE UNLIMITED
617XX	LIMITED ENGINEERING LICENSE, RENEWAL EXERCISE
65XXX	UNINSPECTED FISHING VESSEL, CHIEF ENGINEER
66XXX	UNINSPECTED FISHING VESSEL, ASSISTANT ENGINEER
68XXX	DESIGNATED DUTY ENGINEER, UNLIMITED HORSEPOWER
69XXX	DESIGNATED DUTY ENGINEER, 1000/4000 HORSEPOWER
70XXX	CHIEF ENGINEER (OSV)
71XXX	ENGINEER (OSV)

SECTION THREE - MODU ENGINEERING LICENSES

<u>MODULE CODE</u>	<u>MODULE NAME</u>
62XXX	CHIEF ENGINEER (MODU)
63XXX	ASSISTANT ENGINEER (MODU)
64XXX	LIMITED ENGINEERING (MODU), RENEWAL EXERCISE

SECTION FOUR - UNLICENSED ENGINE RATINGS

<u>MODULE CODE</u>	<u>MODULE NAME</u>
80XXX	GENERAL SAFETY
81XXX	JUNIOR ENGINEER
82XXX	DECK ENGINEER
83XXX	ELECTRICIAN
84XXX	REFRIGERATION ENGINEER
85XXX	MACHINIST
86XXX	FIREMAN/WATERTENDER
87XXX	OILER, STEAM & MOTOR
88XXX	PUMPMAN
89XXX	OILER, MOTOR VESSELS, LIMITED
90XXX	QMED RENEWAL EXERCISE

ENGINEERING LICENSE EXAMINATION EQUIVALENCIES

Individuals applying for multiple engineering license endorsements need only be examined by the highest level examination series for which applied. The table presented below represents many of the higher level examination series that may also test a candidate for lower level license, however, not all examples may be represented.* The examinations listed in the left-hand column adequately test the engineering subjects for engineering license examinations identified in the top row. The examination equivalency is only valid for the same propulsion mode.

EXAMINATION SERIES	CHIEF ENGINEER LTD-OCEANS	CHIEF ENGINEER LIMITED NEAR COASTAL	ASSISTANT ENGINEER LTD-OCEANS	DDE UNLIMITED
CHIEF ENGINEER UNLIMITED	●	●	●	●
FIRST ASSISTANT ENGINEER UNLIMITED	●	●	●	●
2ND ASSISTANT ENGINEER UNLIMITED		●	●	●
3RD ASSISTANT ENGINEER UNLIMITED			●	●
CHIEF ENGINEER LIMITED OCEANS				●
CHIEF ENGINEER LIMITED NEAR COASTAL				●

* Because of regulatory prohibitions, not all situations are covered in this table. As a general rule, the exam series having the greater number of exam modules need only be administered when testing for multiple licenses.

SECTION ONE

UNLIMITED

ENGINEERING LICENSES

Examination Structure Sheets

THIRD ASSISTANT ENGINEER

SECOND ASSISTANT ENGINEER

FIRST ASSISTANT ENGINEER

CHIEF ENGINEER

INTRODUCTION

ADMINISTRATION OF UNLIMITED HORSEPOWER - ENGINEERING EXAMS

1. SCHEDULING EXAM TIME LIMITS AND GRADING POLICY

A time limit of 3½ hours may be provided to each applicant to complete a test module except as necessary to accommodate the working hours of the examination room. Applicants starting to test in the morning, at the opening of the exam room, should be able to complete a minimum of two modules that day when two or more modules in an examination are to be administered. If they desire, and time permits, they may complete more than two modules. Applicants starting a module late in the afternoon should be advised that it must be completed by the normal closing time; unanswered questions will be treated as wrong answers. An applicant for an unlimited license must complete the entire exam on consecutive business days. To eliminate confusion the modules should be administered in the published order. A minimum score of 70% is required to pass each module, except for the renewal exercise module, which requires a 90% to pass. All modules for engineers are graded individually.

2. EXAMINATION CYCLES

Subject to the requirements of paragraph 1, the examination cycle may begin on any business day, and at anytime during the day as designated by the REC.

3. REFERENCE MATERIAL

Engineering exam illustrations will be provided at the back of each exam module booklet. With the exception of providing the regulations, 46 CFR Parts 1-199 and 33 CFR Parts 1-199, no other reference materials are permitted except for the open book renewal exercise. Only non-programmable calculators are permitted.

4. INCREASING THE SCOPE OF PROPULSION MODE FOR CHIEF, FIRST, SECOND AND THIRD ASSISTANT ENGINEERS

Applicants wishing to increase the scope of their propulsion mode to STEAM and/or MOTOR are required to be tested with specific modules in the new propulsion area. The complete list of required modules is defined for Third Assistant Engineer in ESS 1-1 thru 1-5, for Second Assistant Engineer in ESS 1-6 thru 1-9, for First Assistant Engineer in ESS 1-10 thru 1-13 and for Chief Engineer in ESS 1-14 thru 1-17 and ESS 1-20 thru 1-22.

5. LIMITED CHIEF ENGINEER CROSS OVER TO UNLIMITED THIRD OR SECOND ASSISTANT ENGINEER

A limited Chief Engineer (Near Coastal) or (Oceans) desiring to crossover to unlimited Third Assistant or Second Assistant Engineer (Motor) respectively is to be tested on all Second Assistant engine modules regardless of the issuing date of their limited Chief Engineer license. These candidates must also satisfy the requirements of STCW, including documentation of the successful completion of all practical demonstrations.

6. RENEWAL EXERCISE

The license renewal exercises for Chief, First, Second, and Third Assistant Engineers are consolidated into one open book exercise for each propulsion mode being renewed.

7. QUESTIONS

Any questions regarding engineering license or document examinations should be referred to the National Maritime Center, Examination Administration Branch, Engineering Team, at (304) 433-3710.

EXAMINATION STRUCTURE SHEETS INDEX
UNLIMITED HORSEPOWER ENGINEERING LICENSES

Exam Title

Examination Structure Sheets (ESS)

Operational Level

Original

Third Assistant Engineer, Motor	ESS 1-1
Third Assistant Engineer, Steam	ESS 1-2
Third Assistant Engineer, Steam and Motor	ESS 1-3
Third Assistant Engineer, Gas Turbine	ESS 1-4

Increase in Scope

Third Assistant Engineer, Steam, Motor or Gas Turbine	
ESS 1-5	

Raise in Grade

Second Assistant Engineer, Motor	ESS 1-6
Second Assistant Engineer, Steam	ESS 1-7
Second Assistant Engineer, Steam and Motor	ESS 1-8

Increase in Scope

Second Assistant Engineer, Steam, Motor or Gas Turbine	ESS 1-9
--	---------

Management Level

Raise in Grade

First Assistant Engineer, Motor	ESS 1-10
First Assistant Engineer, Steam	ESS 1-11
First Assistant Engineer, Steam and Motor	ESS 1-12

Increase in Scope

First Assistant Engineer, Steam, Motor or Gas Turbine	ESS 1-13
---	----------

Raise in Grade

Chief Engineer, Motor	ESS 1-14
Chief Engineer, Steam	ESS 1-15
Chief Engineer, Steam and Motor	ESS 1-16

Increase in Scope

Chief Engineer, Steam, Motor or Gas Turbine	ESS 1-17
---	----------

Operational & Management Level

Renewal

Unlimited Engineering, Motor	ESS 1-18
Unlimited Engineering, Steam	ESS 1-19

QUICK REFERENCE - UPPER LEVEL - UNLIMITED ENGINEERING LICENSES

THIRD ASSISTANT ENGINEER

<u>SUBJECT</u>	<u>MODULE CODE</u>	<u>STEAM ONLY</u>	<u>MOTOR ONLY</u>	<u>STEAM/ MOTOR</u>	<u>GT</u>
Motor Plants, Part I	531--		X	X	
Motor Plants, Part II	532--		X	X	
Engineering Safety and Environmental Protection	534--	X	X	X	
General Subjects	535--	X	X	X	
Electricity	536--	X	X	X	
Steam Plants, Part I	537--	X		X	
Steam Plants, Part II	538--	X		X	
Endorsement Gas Turbine*					

SECOND ASSISTANT ENGINEER

(Refer to Examination Structure Sheets 1-6 thru 1-9)

FIRST ASSISTANT ENGINEER

<u>SUBJECT</u>	<u>MODULE CODE</u>	<u>STEAM ONLY</u>	<u>MOTOR ONLY</u>	<u>STEAM/ MOTOR</u>	<u>GT</u>
General Subjects, Part I	511--	X	X	X	
General Subjects, Part II	512--	X	X	X	
Steam Plants	513--	X		X	
Electricity, Electronics and Control Systems	514--	X	X	X	
Engineering Safety and Environmental Protection	515--	X	X	X	
Motor Plants	516--		X	X	
Endorsement Steam Plants, Part II	545--	X		X	
Endorsement Motor Plants, Part II	547--		X	X	
Endorsement Gas Turbine*					

CHIEF ENGINEER

(Refer to Examination Structure Sheets 1-14 thru 1-17)

RENEWAL EXERCISES

(Refer to Examination Structure Sheets 1-18 thru 1-19)

* Any Gas Turbine Propulsion endorsement to a Steam and/or Motor license may be added to a license only after the applicant has provided evidence of successful completion of an approved Gas Turbine Training course.

X Indicates a module that is part of the core exam.

EXAMINATION STRUCTURE SHEET NO. 1-1	License Type- License Group- License Action- License Condition-	THIRD ASSISTANT ENGINEER (OICEW) UNLIMITED ORIGINAL MOTOR	EXAM CODE 53CO
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
531--, Motor Plants, Part I		70	70
532--, Motor Plants, Part II		70	70
534--, Engineering Safety & Environmental Protection		70	70
535--, General Subjects		70	70
536--, Electricity		70	70

EXAMINATION STRUCTURE SHEET NO. 1-2	License Type - License Group- License Action- License Condition-	THIRD ASSISTANT ENGINEER (OICEW) UNLIMITED ORIGINAL STEAM	EXAM CODE 53BO
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
534--, Engineering Safety & Environmental Protection		70	70
535--, General Subjects		70	70
536--, Electricity		70	70
537--, Steam Plants, Part I		70	70
538--, Steam Plants, Part II		70	70

EXAMINATION STRUCTURE SHEET NO. 1-3	License Type - License Group- License Action - License Condition-	THIRD ASSISTANT ENGINEER (OICEW) UNLIMITED ORIGINAL STEAM AND MOTOR	EXAM CODE 53AO
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
531--, Motor Plants, Part I		70	70
532--, Motor Plants, Part II		70	70
534--, Engineering Safety & Environmental Protection		70	70
535--, General Subjects		70	70
536--, Electricity		70	70
537--, Steam Plants, Part I		70	70
538--, Steam Plants, Part II		70	70

EXAMINATION STRUCTURE SHEET NO. 1-4	License Type - License Group - License Action - License Condition-	THIRD ASSISTANT ENGINEER (OICEW) UNLIMITED ORIGINAL GAS TURBINE	EXAM CODE 53GT
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
534--, Engineering Safety & Environmental Protection		70	70
535--, General Subjects		70	70
536--, Electricity		70	70
Gas Turbine Plants Course			

EXAMINATION STRUCTURE SHEET NO. 1-5	License Type - License Group - License Action - License Condition-	THIRD ASSISTANT ENGINEER (OICEW) UNLIMITED INCREASING SCOPE STEAM, MOTOR OR GAS TURBINE	EXAM CODE 53AI, 53BI
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
From Motor to Steam Exam Code 53AI			
537-- Steam Plants		70	70
538-- Steam Plants Part II		70	70
From Steam to Motor Exam Code 53BI			
531-- Motor Plants		70	70
532-- Motor Plants Part II		70	70
From Steam and/or Motor to Gas Turbine			
Gas Turbine Plants Course			

EXAMINATION STRUCTURE SHEET NO. 1-6	License Type- License Group- License Action- License Condition-	SECOND ASSISTANT ENGINEER UNLIMITED RAISE IN GRADE MOTOR	EXAM CODE 52CR
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
521-- Motor Plants, Plants I		70	70
522-- Motor Plants, Part II		70	70
523-- General Subjects		70	70
524-- Electricity		70	70
525-- Engineering Safety & Environmental Protection		70	70

EXAMINATION STRUCTURE SHEET NO. 1-7	License Type- License Group- License Action- License Condition-	SECOND ASSISTANT ENGINEER UNLIMITED RAISE IN GRADE STEAM	EXAM CODE 52BR
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
523--, General Subjects		70	70
524--, Electricity		70	70
525--, Engineering Safety & Environmental Protection		70	70
526--, Steam Plants, Part I		70	70
527--, Steam Plants, Part II		70	70

EXAMINATION STRUCTURE SHEET NO. 1-8	License Type- License Group- License Action- License Condition-	SECOND ASSISTANT ENGINEER UNLIMITED RAISE IN GRADE STEAM AND MOTOR	EXAM CODE 52AR
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
521--, Motor Plants, Part I		70	70
522--, Motor Plants, Part II		70	70
523--, General Subjects		70	70
524--, Electricity		70	70
525--, Engineering Safety & Environmental Protection		70	70
526--, Steam Plants, Part I		70	70
527--, Steam Plants, Part II		70	70

EXAMINATION STRUCTURE SHEET NO. 1-9	License Type- License Group- License Action- License Condition-	SECOND ASSISTANT ENGINEER UNLIMITED INCREASING SCOPE STEAM, MOTOR OR GAS TURBINE	EXAM CODE 52AI, 52BI
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
From Motor to Steam Exam Code 52AI			
526--, Steam Plants Part I		70	70
527--, Steam Plants Part II		70	70
From Steam to Motor Exam Code 52BI			
521--, Motor Plants Part I		70	70
522--, Motor Plants Part II		70	70
From Steam and/or Motor to Gas Turbine			
Gas Turbine Plants Course			

EXAMINATION STRUCTURE SHEET NO. 1-10	License Type - License Group- License Action- License Condition-	FIRST ASSISTANT ENGINEER UNLIMITED RAISE IN GRADE MOTOR	EXAM CODE 51CO
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
511--, General Subjects, Part I		70	70
512--, General Subjects, Part II		70	70
514--, Electricity, Electronics & Control Systems		70	70
515--, Engineering Safety & Environmental Protection		70	70
516--, Motor Plants		70	70

EXAMINATION STRUCTURE SHEET NO. 1-11	License Type - License Group- License Action- License Condition-	FIRST ASSISTANT ENGINEER UNLIMITED RAISE IN GRADE STEAM	EXAM CODE 51BO
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
511--, General Subjects, Part I		70	70
512--, General Subjects, Part II		70	70
513--, Steam Plants		70	70
514--, Electricity, Electronics & Control Systems		70	70
515--, Engineering Safety & Environmental Protection		70	70

EXAMINATION STRUCTURE SHEET NO. 1-12	License Type- License Group- License Action - License Condition-	FIRST ASSISTANT ENGINEER UNLIMITED RAISE IN GRADE STEAM AND MOTOR	EXAM CODE 51AO
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
511--, General Subjects, Part I		70	70
512--, General Subjects, Part II		70	70
513--, Steam Plants		70	70
514--, Electricity, Electronics & control Systems		70	70
515--, Engineering Safety & Environmental Protection		70	70
516--, Motor Plants		70	70

EXAMINATION STRUCTURE SHEET NO. 1-13	License Type- License Group- License Action- License Condition-	FIRST ASSISTANT ENGINEER UNLIMITED INCREASING SCOPE STEAM, MOTOR OR GAS TURBINE	EXAM CODE 51AI, 51AJ
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
From Motor to Steam Exam Code 51AI			
513--, Steam Plants		70	70
545--, Endorsement Steam Plants Part II		70	70
From Steam to Motor Exam Code 51AJ			
516--, Motor Plants		70	70
547--, Endorsement Motor Plants Part II		70	70
From Steam and/or Motor to Gas Turbine			
Gas Turbine Plants Course			
EXAMINATION STRUCTURE SHEET NO. 1-14	License Type- License Group- License Action- License Condition-	CHIEF ENGINEER UNLIMITED RAISE IN GRADE MOTOR	EXAM CODE 50CR
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
501--, General Subjects, Part I		70	70
502--, General Subjects, Part II		70	70
504--, Electricity, Electronics & Control Systems		70	70
505--, Engineering Safety & Environmental Protection		70	70
506--, Motor Plants		70	70
EXAMINATION STRUCTURE SHEET NO. 1-15	License Type- License Group- License Action- License Condition-	CHIEF ENGINEER UNLIMITED RAISE IN GRADE STEAM	EXAM CODE 50BR
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
501--, General Subjects, Part I		70	70
502--, General Subjects, Part II		70	70
503--, Steam Plants		70	70
504--, Electricity, Electronics & Control Systems		70	70
505--, Engineering Safety & Environmental Protection		70	70

EXAMINATION STRUCTURE SHEET NO. 1-16	License Type - License Group - License Action - License Condition -	CHIEF ENGINEER UNLIMITED RAISE IN GRADE STEAM AND MOTOR	EXAM CODE 50AR
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
501--, General Subjects, Part I		70	70
502--, General Subjects, Part II		70	70
503--, Steam Plants		70	70
504--, Electricity, Electronics & Control Systems		70	70
505--, Engineering Safety & Environmental Protection		70	70
506--, Motor Plants		70	70
EXAMINATION STRUCTURE SHEET NO. 1-17	License Type- License Group- License Action- License Condition-	CHIEF ENGINEER UNLIMITED INCREASING SCOPE STEAM, MOTOR OR GAS TURBINE	EXAM CODE 50IA, 50IB
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
From Motor to Steam Exam Code 50IA			
503--, Steam Plants		70	70
545--, —Endorsement Steam Plants		70	70
From Steam to Motor Exam Code 50IB			
506--, Motor Plants		70	70
547--Endorsement Motor Plants		70	70
From Steam and/or Motor to Gas Turbine			
Gas Turbine Plants Course			

EXAMINATION STRUCTURE SHEET NO. 1-18	License Type - ENGINEERING (RENEWAL) License Group- UNLIMITED License Action - RENEWAL License Condition- MOTOR	EXAM CODE 55AB
MODULES		NUMBER OF QUESTIONS
551--, Unlimited Engineering Renewal Exercise, Motor		70
		MINIMUM SCORE
		90

EXAMINATION STRUCTURE SHEET NO. 1-19	License Type - ENGINEERING (RENEWAL) License Group- UNLIMITED License Action - RENEWAL License Condition - STEAM	EXAM CODE 55AC
MODULES		NUMBER OF QUESTIONS
552--, Unlimited Engineering Renewal Exercise, Steam		70
		MINIMUM SCORE
		90

Remarks: The renewal exercises are open book.

SECTION TWO

LIMITED

ENGINEERING LICENSES

Examination Structure Sheets

CHIEF ENGINEER (LIMITED)

ASSISTANT ENGINEER (LIMITED)

CHIEF ENGINEER (OSV)

ENGINEER (OSV)

CHIEF ENGINEER (OSV) NEAR COASTAL DOMESTIC

ENGINEER (OSV) NEAR COASTAL DOMESTIC

DESIGNATED DUTY ENGINEER

CHIEF ENGINEER, UNINSPECTED FISHING INDUSTRY VESSELS

ASSISTANT ENGINEER, UNINSPECTED FISHING INDUSTRY VESSELS

INTRODUCTION

ADMINISTRATION OF LIMITED LEVEL ENGINEERING EXAMS

1. OVERVIEW

The written examination is the final step or capstone in the process for attaining an engineering license. All other U. S. Regulatory or STCW requirements must be completed prior to the candidate being examined. Only the motor propulsion mode for limited license examinations will be made available to the REC's. The **steam propulsion** mode for limited power/tonnage engineering licenses is not considered viable due to the small number of these vessels. **An engineer desiring to have their license endorsed for steam plants of limited power/limited tonnage must first hold a comparable motor license and complete a training program established for the operation of a limited horsepower steam plant to obtain this endorsement.** Where a specific need is determined for the operation of limited horsepower steam vessels, the owner/operator of these vessels is responsible for verifying the engineers' competency in the operation of these plants

2. TIME OF EXAMINATION AND GRADING POLICY

A time limit of 3.½ hours may be provided to each applicant to complete a test module except as necessary to accommodate the working hours of the examination room. Applicants starting to test in the morning, at the opening of the exam room, must complete a minimum of two modules that day when two or more modules in an exam series are to be administered. If time permits, they may complete more than two modules. Applicants starting a module late in the afternoon should be advised that it must be completed by the normal closing time; unanswered questions will be treated as wrong answers. An applicant for a limited license must complete the entire exam on consecutive business days. All modules are graded separately. A minimum score of 70% is required to pass each module, except for the renewal exercise open book modules, which require 90% to pass.

3. REFERENCE MATERIAL

Engineering exam illustrations will be provided at the back of each exam module booklet. With the exception of providing the regulations, 46 CFR Parts 1-199 and 33 CFR Parts 1-199, no other reference materials are permitted except for the open book renewal exercise. Only non-programmable calculators are permitted.

4. EXAMINATION CYCLES

Subject to the requirements of paragraph 1 and 2, the examination cycle may begin on any workday, and at anytime during the day as designated by the REC.

5. RENEWAL EXERCISE

The renewal exercises for **Limited Chief and Assistant Engineer, Chief Engineer (OSV) and Engineer (OSV), Uninspected Fishing Industry Vessel Chief Engineer and Assistant Engineer, and DDE unlimited HP and DDE 1000/4000 HP** have been consolidated into one open book exercise.

6. QUESTIONS

Any questions regarding engineering license or document examinations should be referred to the National Maritime Center, Examination Administration Branch, Engineering Team, at (304) 433-3710.

**EXAMINATION STRUCTURE SHEET INDEX FOR
LIMITED ENGINEERS LICENSE**

<u>Exam Title</u>	<u>Exam Structure Sheets (ESS)</u>
Assistant Engineer Limited / DDE Unlimited Horsepower-----	ESS 2-1
Chief Engineer Limited, Near Coastal -----	ESS 2-2
Chief Engineer Limited, Oceans -----	ESS 2-3
Engineer, (OSV) -----	ESS 2-4
Chief Engineer, (OSV) Domestic, Near Coastal -----	ESS 2-5
Chief Engineer, (OSV) -----	ESS 2-6
Designated Duty Engineer 1000/4000 Horsepower -----	ESS 2-7
Designated Duty Engineer Unlimited Horsepower -----	ESS 2-8
Assistant Engineer, Uninspected Fishing Industry Vessels -----	ESS 2-9
Chief Engineer, Uninspected Fishing Industry Vessels -----	ESS 2-10
Limited Engineer License Renewal -----	ESS 2-11

QUICK REFERENCE - LIMITED ENGINEER LICENSES (HP / TONNAGE)

ASSISTANT ENGINEER LIMITED and DESIGNATED DUTY ENGINEER - UNLIMITED HP:

<u>SUBJECT</u>	<u>MODULE CODE</u>
General Subjects	611--XX
Motor Plants	612--XX
Engineering Safety & Environmental Protection	613--XX
Electricity	614--XX

CHIEF ENGINEER – LIMITED:

<u>SUBJECT</u>	<u>C/E OCEANS MODULE CODE</u>	<u>C/E NC MODULE CODE</u>
General Subjects	607--XX	601--XX
Motor Plants	608--XX	602--XX
Engineering Safety & Environmental Protection	609--XX	603--XX
Electricity - Oceans	605--XX	
Electricity - Near Coastal		604--XX

CHIEF ENGINEER AND ENGINEER - OFFSHORE SUPPLY VESSELS:

<u>SUBJECT</u>	<u>C/E (OSV) MODULE CODE</u>	<u>Engineer (OSV) MODULE CODE</u>
General Subjects	701--XX	711--XX
Motor Plants	702--XX	712--XX
Engineering Safety & Environmental Protection	703--XX	713--XX
Electricity	704--XX	714--XX
Survival Craft	706--XX	706--XX

DESIGNATED DUTY ENGINEER – LIMITED:

<u>SUBJECT</u>	<u>DDE UNLIMITED MODULE CODE</u>	<u>DDE-1000/4000 HP MODULE CODE</u>
General Subjects	611--XX	691--XX
Motor Plants	612--XX	692--XX
Engineering Safety & Environmental Protection	613--XX	693--XX
Electricity	614--XX	

UNINSPECTED FISHING INDUSTRY VESSEL - CHIEF AND ASSISTANT ENGINEER:

<u>SUBJECT</u>	<u>CHIEF ENGINEER MODULE CODE</u>	<u>ASSISTANT ENGINEER MODULE CODE</u>
General Subjects	651--XX	661--XX
Motor Plants	652--XX	662--XX
Engineering Safety & Environmental Protection	653--XX	663--XX

EXAMINATION STRUCTURE SHEET NO. 2-1	License Type - ASSISTANT ENGINEER / DDE UNLIMITED HP License Group- LIMITED License Action- ORIGINAL	EXAM CODE 61CR
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
611--, General Subjects	70	70
612--, Motor Plants	70	70
613--, Engineering Safety & Environmental Protection	70	70
614--, Electricity	70	70

EXAMINATION STRUCTURE SHEET NO. 2-2	License Type- CHIEF ENGINEER License Group- LIMITED - NEAR COASTAL License Action- RAISE IN GRADE	EXAM CODE 60CR
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
601--, General Subjects	70	70
602--, Motor Plants	70	70
603--, Engineering Safety & Environmental Protection	70	70
604--, Electricity	70	70

EXAMINATION STRUCTURE SHEET NO. 2-3	License Type- CHIEF ENGINEER License Group- LIMITED - OCEANS License Action- RAISE IN GRADE	EXAM CODE 60AR
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
607--, General Subjects	70	70
608--, Motor Plants	70	70
609--, Engineering Safety & Environmental Protection	70	70
605--, Electricity and Electronics	70	70

EXAMINATION STRUCTURE SHEET No. 2-4	License Type- License Group- License Action- License Condition-	ENGINEER LIMITED ORIGINAL OSV	EXAM CODE 71CC
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
711--, General Subjects		70	70
712--, Motor Plants		70	70
713--, Engineering Safety & Environmental Protection		70	70
714--, Electricity		70	70
706--, Survival Craft		50	70

EXAMINATION STRUCTURE SHEET No. 2-5	License Type - License Group - License Action - License Condition -	CHIEF ENGINEER LIMITED- NEAR COASTAL, DOMESTIC ORIGINAL OSV - LESS THAN 4000 HP	EXAM CODE 70CC
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE

EXAMINATION STRUCTURE SHEET No. 2-6	License Type - License Group - License Action - License Condition -	CHIEF ENGINEER LIMITED RAISE IN GRADE OSV	EXAM CODE 70CF
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
701--, General Subjects		70	70
702--, Motor Plants		70	70
703--, Engineering Safety & Environmental Protection		70	70
704--, Electricity		70	70
706--, Survival Craft		50	70

EXAMINATION STRUCTURE SHEET NO. 2-7	License Type - DDE, 1000/4000 HP License Group- LIMITED License Action- ORIGINAL	EXAM CODE 69CR
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
691--, General Subjects	50	70
692--, Motor Plants	50	70
693--, Engineering Safety & Environmental Protection	50	70

EXAMINATION STRUCTURE SHEET NO. 2-8	License Type- DDE, UNLIMITED HP License Group- LIMITED License Action- ORIGINAL & UPGRADE	EXAM CODE 61CR
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
611--, General Subjects	70	70
612--, Motor Plants	70	70
613--, Engineering Safety & Environmental Protection	70	70
614--, Electricity	70	70

EXAMINATION STRUCTURE SHEET No. 2-9	License Type - ASSISTANT ENGINEER License Group - LIMITED License Action - ORIGINAL License Condition - UFIV	EXAM CODE 66CF
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
661--, General Subjects	50	70
662--, Motor Plants	50	70
663--, Engineering Safety & Environmental Protection	50	70

EXAMINATION STRUCTURE SHEET NO. 2-10	License Type- License Group- License Action- License Condition-	CHIEF ENGINEER LIMITED RAISE IN GRADE UFIV	EXAM CODE 65CF
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
651--, General Subjects		70	70
652--, Motor Plants		70	70
653--, Engineering Safety & Environmental Protection		70	70

EXAMINATION STRUCTURE SHEET NO. 2-11	License Type- License Group- License Action-	ENGINEERING (RENEWAL) LIMITED RENEWAL	EXAM CODE 61AI
MODULES		NUMBER OF QUESTIONS	MINIMUM SCORE
617--, Limited Renewal Exercise.		70	90

SECTION THREE

MOBILE OFFSHORE DRILLING UNIT

ENGINEERING LICENSES

Examination Structure Sheets

ASSISTANT ENGINEER (MODU)

CHIEF ENGINEER (MODU)

INTRODUCTION

MODU EXAMINATIONS

1. **TIME OF EXAMINATION AND GRADING POLICY**

A time limit of 3½ hours may be provided to each applicant to complete a test module except as necessary to accommodate the working hours of the examination room. Applicants starting to test in the morning, at the opening of the exam room, must complete a minimum of two modules that day and may complete more if they desire and time permits. Applicants starting a module late in the afternoon should be advised that it must be completed by the normal closing time; unanswered questions will be treated as wrong answers. An applicant for a Mobile Offshore Drilling Unit (MODU) engineer's license must complete the entire exam on consecutive business days. A minimum score of 70% is required to pass all modules. All examination modules are graded separately. The renewal exercise module requires a minimum score of 90% to pass.

2. **EXAMINATION CYCLES**

Subject to the requirements of paragraph 1, the examination cycle may begin on any business day and at anytime during the day as designated by the REC.

3. **RENEWAL EXERCISE**

The renewal exercises for chief and assistant Engineers (MODU) have been consolidated into one open book exercise.

4. **REFERENCE MATERIAL**

Engineering exam illustrations will be provided at the back of each exam module booklet. With the exception of providing the regulations, 46 CFR Parts 1-199 and 33 CFR Parts 1-199, no other reference materials are permitted except for the open book renewal exercise. Only non-programmable calculators are permitted.

5. **QUESTIONS**

Any questions should be referred to the National Maritime Center, Examination Administration Branch, Engineering Team,
at (304) 433-3710.

EXAMINATION STRUCTURE SHEET NO. 3-1	License Type - ASSISTANT ENGINEER - MODU License Group - ORIGINAL	EXAM CODE 63FO
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
631--, General Subjects	50	70
632--, Auxiliary Machinery	50	70
633--, Engineering Safety & Environmental Protection	50	70

EXAMINATION STRUCTURE SHEET NO. 3-2	License Type - CHIEF ENGINEER - MODU License Group - RAISE IN GRADE	EXAM CODE 62ER
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
621--, General Subjects	70	70
622--, Auxiliary Machinery	70	70
623--, Engineering Safety & Environmental Protection	70	70

EXAMINATION STRUCTURE SHEET No. 3-3	License Type - ENGINEERING (RENEWAL) License Group - MODU - CHIEF AND ASSISTANT	EXAM CODE 63EN
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
634--, MODU Renewal Exercise	50	90

SECTION FOUR

UNLICENSED RATINGS

ENGINEERING EXAMINATIONS

Examination Structure Sheets

GENERAL SAFETY
JUNIOR ENGINEER
DECK ENGINEER
ELECTRICIAN
REFRIGERATING ENGINEER
MACHINIST
OILER
FIREMAN/WATERTENDER
PUMPMAN
OILER, MINERAL & OIL
QMED RENEWAL EXERCISE

INTRODUCTION

UNLICENSED RATING ENGINEERING EXAMINATIONS

1. **TIME OF EXAMINATION AND GRADING POLICY**

A time limit of 3½ hours may be provided to each applicant to complete a test module except as necessary to accommodate the working hours of the examination room. An applicant may test for as many ratings for which they are qualified; however, they must pass the General Safety module before taking any of the unlicensed rating modules. An applicant starting to test in the morning, at the opening of the exam room, should complete a minimum of two modules that day when two or more test modules are required. They may complete more than two if they desire and time permits. Applicants starting a module late in the afternoon should be advised that it must be completed by the normal closing time; unanswered questions will be treated as wrong answers. An applicant testing in three or more modules must complete all exam modules on consecutive business days once testing has started. A minimum score of 70% is required to pass each module except for the renewal exercise which requires a 90% to pass. All modules are graded separately.

2. **EXAMINATION CYCLES**

Subject to the requirements of paragraph 1, the examination cycle may begin on any business day, and at anytime during the day as designated by the REC.

3. **REFERENCE MATERIAL**

Engineering exam illustrations will be provided at the back of each exam module booklet. With the exception of providing the regulations, 46 CFR Parts 1-199 and 33 CFR Parts 1-199, no other reference materials are permitted except for the open book renewal exercise. Only non-programmable calculators are permitted.

4. **QUESTIONS**

Any questions should be referred to the National Maritime Center, Examination Administration Branch, Engineering Team, at (304) 433-3710.

EXAMINATION STRUCTURE SHEET NO. 4-1	License Type - JUNIOR ENGINEER License Group - UNLICENSED RATINGS	EXAM CODE 81UU
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
80--, General Safety	50	70
81--, Junior Engineer	50	70

EXAMINATION STRUCTURE SHEET NO. 4-2	License Type - DECK ENGINEER License Group - UNLICENSED RATINGS	EXAM CODE 82UU
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
80--, General Safety	50	70
82--, Deck Engineer	50	70

EXAMINATION STRUCTURE SHEET NO. 4-3	License Type - ELECTRICIAN License Group - UNLICENSED RATINGS	EXAM CODE 83UU
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
80--, General Safety	50	70
83--, Electrician	50	70

EXAMINATION STRUCTURE SHEET NO. 4-4	License Type - REFRIGERATING ENGINEER License Group - UNLICENSED RATINGS	EXAM CODE 84UU
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
80--, General Safety	50	70
84--, Refrigerating Engineer	50	70

EXAMINATION STRUCTURE SHEET NO. 4-5	License Type - MACHINIST License Group- UNLICENSED RATINGS	EXAM CODE 85UU
MODULES		NUMBER OF QUESTIONS
MINIMUM SCORE		
80--, General Safety	50	70
85--, Machinist	50	70

EXAMINATION STRUCTURE SHEET NO. 4-6	License Type - FIREMAN/WATERTENDER License Group- UNLICENSED RATINGS	EXAM CODE 86UU
MODULES		NUMBER OF QUESTIONS
MINIMUM SCORE		
80--, General Safety	50	70
86--, Fireman Watertender	50	70

EXAMINATION STRUCTURE SHEET NO. 4-7	License Type - OILER License Group - UNLICENSED RATINGS	EXAM CODE 87UU
MODULES		NUMBER OF QUESTIONS
MINIMUM SCORE		
80--, General Safety	50	70
87--, Oiler (Steam and Motor) ¹	50	70

EXAMINATION STRUCTURE SHEET NO. 4-8	License Type - PUMPMAN License Group - UNLICENSED RATINGS	EXAM CODE 88UU
MODULES		NUMBER OF QUESTIONS
MINIMUM SCORE		
80--, General Safety	50	70
88--, Pumpman	50	70

EXAMINATION STRUCTURE SHEET NO. 4-9	License Type – OILER-MOTOR VESSELS - LIMITED License Group- UNLICENSED RATINGS	EXAM CODE 89UU
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
80--, General Safety	50	70
89--, Oiler - Mineral and Oil	50	70

¹ Each applicant for a QMED - Oiler endorsement where service has been obtained on motor propelled vessels of less than 1600 GT (without auxiliary and/or waste heat boilers) should be administered exam module 89XXX in place of module 87XXX.

EXAMINATION STRUCTURE SHEET NO. 4-10	License Type - RENEWAL License Group - UNLICENSED RATINGS	EXAM CODE 90UU
MODULES	NUMBER OF QUESTIONS	MINIMUM SCORE
900--, Renewal Exercise	70	90

Remarks: The Renewal Exercise is open book and is to be administered for those QMEDs who have not maintained recency of sea service.

APPENDIX

LIFEBOATMAN PRACTICAL DEMONSTRATION

APPENDIX I	LIFEBOATMAN PRACTICAL DEMONSTRATION	
-------------------	--	--

46 CFR 12.10-5(a) requires applicants for certificates or endorsement as lifeboatman to demonstrate their ability to carry out effectively all the duties that may be required of a lifeboatman. They must demonstrate that the training they have received has been effective in all operations connected with the launching of lifeboats, liferafts, and other survival craft; that they can understand and carry out the usual orders given, in English, incident to launching and recovery of survival craft; that they can demonstrate the practical skills in the handling of lifeboats and the use of oars; and that they are capable of taking command of the crew of a lifeboat or survival craft.

1. **REC responsibilities.** Applicants for lifeboatman that have not completed an approved course are to be administered the appropriate written examination. For applicants needing to perform and be assessed in skill demonstrations, personnel in the REC should not be required to conduct these assessments unless the full scale equipment and the assistance of knowledgeable active duty or reserve BM or QM is available to observe the demonstration. Applicants may only use one-quarter scale models to describe or identify components of a lifeboat provided in PART I. Only actual equipment may be used to demonstrate the proficiencies listed in PARTS II and III in the use of survival craft. The services of a boat crew are required in PART II to demonstrate ability to handle a lifeboat and command a crew underway which are typically not available at all REC's.
2. **Procedures to be followed:**
 - (a) **PART I – COMPONENT IDENTIFICATION.** Applicants must identify the equipment used in lifeboats and other survival craft. Ideally this will be done using the actual equipment. They should describe under what circumstances and in which craft the equipment would be found, the method in which it is used, and any special precautions regarding its construction or use. For the purpose of standardization award one point for identification and one point for description as per the checklist provided. Time allowed 30 minutes. Applicant must accumulate a minimum of 70 points to demonstrate proficiency.
 - (b) **PART II – PROCEDURES.** The applicant must be assessed as to their proficient performance of the skills involved in the launching, handling and recovering of a lifeboat (PARTS II-1, II-2 and II-3). The processes shown in Column A are to be compared to the standards provided in the checklist. Time allowed is 60 minutes.
 - (c) **PART III - PROCEDURES.** An applicant for Lifeboatman or Lifeboatman Limited must demonstrate the procedural steps involved in the launching, righting and boarding of liferafts. An applicant for lifeboatman limited to vessels not equipped with lifeboats must have successfully completed engineering module 706XX, Survival Craft and have demonstrated the ability to launch and board a liferaft. Time allowed is 30 minutes.

**LIFEBOATMAN
PRACTICAL DEMONSTRATION**

**PART I – COMPONENT
IDENTIFICATION**

Reference: 46 CFR 199.175

<u>COMPONENT</u>	<u>POINTS</u>	<u>COMPONENT</u>	<u>POINTS</u>
Bailer		Provisions	
Bilge pump		Pump	
Boathook		Radar reflector	
Bucket		Rainwater collection device	
Can Opener		Repair kit	
Compass		Sea anchor	
Dipper		Searchlight	
Drinking Cup		Seasickness kit	
Fire extinguisher		Signal, smoke	
First aid kit		Signal, hand flare	
Flashlight		Signal, parachute flare	
Hatchet		Skates and fenders	
Heaving Line		Sponge	
Instruction card		Survival instructions	
Jackknife		Table of lifesaving signals	
Knife (non-folding)		Thermal protective aids	
Ladder		Tool kit	
Mirror, signaling		Towline	
Oars/Paddles		Water	
Painters		Whistle	

**LIFEBOATMAN
PRACTICAL DEMONSTRATION**

PART II-1 - PROCEDURES

Applicants shall demonstrate their ability to prepare and safely launch survival craft and clear the ship's side quickly; give the correct commands for launching and boarding survival craft, clear the ship and handling and disembarking persons from survival craft. These checklists represent one set of assessment criteria for determining the success of these performance demonstrations. Others may be used such as those enclosed with NMC Policy Letter 08-01.

LIFEBOAT LAUNCH PROCEDURES - PART II-1

Applicant performs or describes in detail the steps involved in lowering and launching of a lifeboat from gravity type davits. Applicant must answer at least forty (40) of the steps listed in this column in order to be asked the questions in column B for the steps omitted in column A. If an applicant fails to initially describe forty (40) steps in column A, it is a failure.	A	Questions for the Examiner to ask an applicant for a step he has failed to include in column A. If an applicant correctly answers a question for a step he omitted give him credit in column B. The total of the credits in column A and B of Parts II-1 and II-3 combined is the finale score. Seventy (70) points is the passing grade. (For further information see NMC Policy Letter 08-01).	B
Muster the crew.		How do you know everyone assigned is present?	
Ensure that each crewmember knows their duties. Reassign tasks for missing individuals.		How do you know the crew is trained? Where are the duties of the crew listed?	
Ensure crew and passengers are protectively dressed including appropriate head covering.		How should persons who are preparing to abandon ship be dressed?	
Ensure that launching crew is wearing hard hats.		What head covering should the launching crew be wearing?	
Verify that crewmembers bring assigned equipment.		What should crewmembers bring to the launching station?	
Ensure crew and passengers have properly donned lifejackets and immersion suits.		Where are immersion suits not required? (32N to 32S)	
Ensure lifejackets and immersion suits have proper equipment in good working order.		What should be attached to a lifejackets and immersion suits to attract attention?	
Check vessel's list to determine if the lifeboat can be launched.		What can prevent the lifeboat from being launched?	
Remove lifeboat stowage cover and strongback. Stow clear of launch and debarkation area.		What protects the interior of a stowed lifeboat?	
Ensure tricing pendants are properly rigged and secure.		How should the trip lines on the McCluney hooks be led?	

(continued)

LIFEBOAT LAUNCH PROCEDURES - PART II-1

	A		B
Ensure Rottmer release gear handle pinned in closed position and has clear path to open.		What prevents accidental release of the lifeboat from the falls?	
Ensure boat drain cap in place and secure.		How is water prevented from entering the boat through its drain?	
Ensure there are sufficient oars and a compass.		How do you propel the vessel and steer a course?	
Ensure that davit tracks are clear and there are no obstructions below.		What should be checked to ensure that the lifeboat can be lowered safely?	
Release manropes (lifelines) and ensure they will run free as boat lowers.		What is provided to protect the occupants in case the boat was to fall unexpectedly?	
Ship rudder and/or tiller.		What is a sweep oar?	
Have sea painter led out, made fast forward as close to water as possible, with all slack removed.		How do you ensure the waterborne boat will lie alongside at the embarkation station?	
Ensure painter properly led inboard of forward falls, outboard of everything else.		What could cause the sea painter to foul during the launch process?	
Ensure sea painter is properly made fast to forward inboard thwart.		Where is the sea painter made fast in the boat?	
Ensure toggle pin has a clear release path and releases into boat.		How do you ensure a "clean" release of the sea painter when so ordered?	
Ensure everyone is out of boat.		How do you prevent injury to occupants while lowering the boat to the embarkation deck?	
Have gripes released, removed, and stowed clear of launch and embarkation areas.		What happens to the gripes after they are released?	
Ensure locking bar swung clear of track.		What fitting or part locks the boat in the stowed position?	
Have embarkation ladder made ready for use. Remove cover. Ensure made fast to deck.		How will the winch operator get off the ship?	
Ensure no personnel or other obstruction in lowering path.		What should be checked prior to lowering to prevent damage to the boat or injury to people on deck?	
Have lifeboat lowered at a steady speed to the embarkation deck and brought alongside easily.		What speed should be used to lower the lifeboat and bring it alongside the embarkation deck?	
Ensure strain on tricing pendants just enough to hold boat securely alongside at embark deck.		What happens if you continue lower the boat past the embarkation deck?	
Have frapping lines passed and secured to the cleat on the davit arm with figure eights.		What helps to prevent occupants from being thrown from the boat when the tricing pendants are released?	

(continued)

LIFEBOAT LAUNCH PROCEDURES - PART II-1

	A		B
Order crew and passengers into the boat.		How should load be distributed in boat?	
Order everyone to be seated, using manropes.		What should occupants do while the boat is being lowered?	
Have tricing pendants released.		What happens if you continue to lower the boat below the embarkation deck?	
Have frapping lines eased out slightly.		What keeps the boat from swinging while being lowered?	
Order boat lowered.		What speed should be used in lowering the boat?	
When safely waterborne order boat released.		Ideally, when should boat be released? (crest of wave or swell)	
Order engine started or oars deployed.		How do you propel the lifeboat?	
Shove off.		How do you get the boat heading away from the ship's side? (use boathook not hands)	
Swing clear of ship.		If vessel has way on what helps boat sheer away from ship?	
Release sea painter.		What should you do once the boat has swung clear of the ship's side?	
Look for, and assist, survivors.		What should you look for once safely clear of ship?	
Join other boats.		What helps aircraft sight vessel survivors?	

**LIFEBOATMAN
PRACTICAL DEMONSTRATION**

PART II-2 – OAR COMMANDS

Ref: American Merchant Seaman’s Manual

<u>COMMAND</u>	<u>MEANING</u>	<u>DEMONSTRATED CORRECTLY</u>
STAND BY THE OARS	Each crewmember clears oar, ships rowlock, places blade flat on gunwale forward, inboard of person in front of them.	
SHOVE OFF	Inboard bowman pushes off using boathook. When ordered, bowman releases sea painter.	
OUT OARS	Place oars in rowlocks directly from the boated position or from “Stand By The Oars” position. Oars horizontal, at right angles to keel, blades flat.	
STAND BY TO GIVE WAY	Hold oar horizontally, blades perpendicular, with the wrists straight and arms extended full length; leans forward until knuckles almost touch the back of the person in front.	
GIVE WAY TOGETHER	Blades of oars are swung forward and dipped into the water. At the command, “Together”, the stroke is started. At the end of the stroke, blades are feathered, swung forward, and another stroke is started.	
HOLD WATER	Complete the stroke, stop rowing, drop blade into water vertically, and gradually swing to a position at right angles to the keel, taking care not to overstress rowlock.	
PORT (STARBOARD) HOLD WATER	Used to turn boat more quickly. Ordered side completes stroke and holds water, other side continues to row. With boat stopped can be used with “Give Way” command to opposite side to turn boat while gathering minimal headway.	
STERN ALL	When rowing ahead, complete the stroke, and then commence to backwater, gradually increasing the depth of the blades.	
BACK WATER	Row in the astern direction	
OARS	Complete the stroke, stop rowing, and bring the oars horizontal, at right angles to the keel, with the blades held flat.	
TRAIL OARS	Complete stroke and carefully allow oar to trail alongside, fore and aft.	
BANK OARS	Given from the “Oars” position. Allows oarsmen to rest when laying to. Oars drawn through the rowlock and rested on opposite gunwale	
IN BOWS	The bowmen complete the stroke, swing their oars forward, and boat them. They then stand by with boat hooks to fend off or receive a line.	
WAY ENOUGH	Given when approaching a landing. Complete stroke, toss oars to about 45 degrees and boat the oars, forward oars first, unship the rowlocks	
BOAT THE OARS	From “Oars” or “Toss Oars”, place the oars in the boat on side thwart, blades forward.	

LIFEBOAT RECOVERY PROCEDURES - PART II-3

Applicant performs or describes in detail the steps involved in the recovery of a lifeboat with gravity type davits (see heading for Part II-1 for grading procedure).	A	Questions to assist the Examiner in assessing the applicant's competence when they have failed to include an item in Column "A"	B
Request and receive permission to come alongside.		How do you communicate with the ship from a lifeboat? What is the signal to recover the boat?	
Inspect Rottmer release gear for free rotation.		What do you check on the releasing gear?	
Come alongside slightly forward of falls.		To what position should you aim during your approach to the ship?	
Retrieve and secure sea painter to thwart.		How is the boat secured to the ship?	
Maneuver into position under the davit heads.		Where does the sea painter position the boat?	
Have the frapping lines eased out.		What keeps the falls clear as boat maneuvers into position alongside	
Have hooks engaged without twists in the falls..		What do you do you check for when hooking the lifeboat to the falls?	
Have releasing gear secured.		What prevents accidental release of hooks?	
Have boat raised to just short of davit head.		How high is boat raised? Why?	
Have tricing pendants rigged.		What prevents a Pelican hook from opening accidentally?	
Have boat lowered to embarkation deck.		How is boat brought alongside at embarkation deck?	
Order occupants to disembark.		How could occupants disembark from boat prior to raising?	
Have cap removed from drain. Have automatic drain ball checked for free flow of water.		How do remove standing water from boat?	
Stow frapping lines and the sea painter.		What do you do with the frapping lines and the sea painter?	
Have tracks and travel path checked for obstructions.		What should be done prior to raising boat to prevent jamming while raising?	
Have boat raised.		After checking that the tracks are clear and there are no obstructions, what do you do next?	
Have limit switch operation checked.		What automatic device prevents the boat from being raised too far?	
Have boat raised until about 12 inches short of the mechanical stops or stowed position.		Where are the inboard ends of gripes secured?	
Secure power to the winch.		When should power to the winch be secured?	
Prevent use of the winch brake while hand crank is in place.		What care should be taken with the winch brake while hand crank is in place?	
Hand crank winch to mechanical stops.		What safety feature prevents injury if power down activated while hand raising the boat?	
Connect and tighten gripes and locking bar.		What prevents a secured boat from lowering?	
Lower boat until it rests on keel stops.		Does a fully raised boat rest on its keel?	
Have all gear properly stowed in boat.		What should be done with the boat's gear?	
Replace strongback and cover, if fitted.		What do you do before securing the drill?	

LIFERAFT LAUNCH PROCEDURES - PART III

Applicant performs or describes in detail the steps involved in launching and boarding an inflatable liferaft. Applicant must describe at least ten (10) steps correctly in order to be asked the questions from part B for the omitted steps.	A	Questions for the examiner to ask an applicant for a step he has failed to include in column A. If an applicant correctly answers a question for a step he omitted give him credit in column B. The total of the combined credits in columns A and B is the final score. Each credit is worth five percentage points (Seventy 70 percent is the passing grade).	B
Muster crew and passengers at raft		How do you know everyone assigned to the craft is present?	
Ensure everyone knows duties		Where are survival craft assignments and duties listed?	
Ensure every one dressed properly		Describe what people should and should not be wearing or carrying?	
Secure painter directly to vessel		Why is a cleat installed in the vicinity of the liferaft station?	
Have strap released that secures raft to cradle		Describe the different methods of releasing a liferaft from its cradle.	
Have raft container carried to launch point		How many crewmembers does it take to safely carry and launch a liferaft?	
Check for obstructions below		What do you check immediately prior to launching the liferaft?	
Have raft thrown into water		What equipment is used to launch the liferaft?	
Have painter pulled out to end		What do you do with the liferaft painter?	
Have painter pulled sharply to inflate raft		How do you inflate a liferaft?	
Have crew and passengers board raft		Describe the different methods of boarding a raft.	
Have crewmember right inverted raft		What do you do in the raft inflates in the inverted position? How do you hold on to the raft while trying to right it?	
Have painter cut to releases		How do you cast off the painter?	
Have raft paddled clear of vessel		How do you propel the raft clear of the vessel?	
Look for, and assist, survivors		What should you do once safely clear of the vessel's side?	
Have sea anchor deployed		What keeps the raft from drifting downwind?	
Ensure liferaft interior has adequate ventilation		Should you seal up all openings to preserve warmth?	
Have double bottom inflated		How do you prevent heat from escaping to the seawater? How do you inflate the double bottom?	
Have all rafts lashed together		What helps searchers spot waterborne survivors from the air?	
Assign watchstanding and other duties		What duties should be assigned to occupants?	

LIFEBOATMAN
PRACTICAL DEMONSTRATION

The forms on pages 52 and 53 appear in NMC Policy Letter 08-01, as pages 13 and 15, and are to be completed when candidate has been assessed in their performance of skills on board a vessel on lifeboat proficiency.

RECORD OF QUALIFYING SEA SERVICE

This record of the sea service acquired by _____, MMD no. _____, will be used to qualify for a lifeboatman's endorsement or certification as proficient in survival craft. It should be signed by the mariner's department head indicating the dates of service, and the number of abandon ship drills in which the mariner participated.

VESSEL	ROUTE¹	SIGNED ON/ DISCHARGED	DATES OF ABANDON SHIP DRILLS²	DATES BOAT LOWERED TO WATER AND CREW EXERCISED³	SIGNATURE (Include MMD no.)

¹ Insert O for ocean routes; NC for near coastal routes; GL for Great Lakes routes; LBS for other lakes and bays or sounds.

² Only include dates where the crew was instructed in abandon ship procedures and the launching and handling of survival craft

³ Only include a date in this column if the mariner served as member of the boat crew that was exercised at oars, otherwise insert NA.

**RECORD OF COMPLETION OF PRACTICAL ASSESSMENTS TO QUALIFY AS A
LIFEBOATMAN AND AS PROFICIENT IN SURVIVAL CRAFT**

This checklist conveniently groups the STCW's competencies and the supporting knowledge, understandings, and proficiencies that apply to certification as proficient in survival craft and to issuance of a lifeboatman certification. Assessors who witness the successful demonstration of a mariner's competency, performed in accordance with the assessment standards, should sign the appropriate line in this checklist, print their name, and include their license number.

MARINER'S NAME _____ **MMD NO.** _____

<i>STCW COMPETENCY</i>	<i>DATE</i>	<i>VESSEL/ TRAINING FACILITY</i>	<i>SIGNATURE/LIC. NO.*</i>
<i>LAUNCHING AND RECOVERY OF LIFEBOATS</i>			
<i>1. Command launching the lifeboat</i>			
<i>2. Prepare and safely launch a lifeboat</i>			
<i>3. Safely recover a lifeboat</i>			
<i>4. Start and operate a lifeboat's engine</i>			
<i>5. Steer (command) a lifeboat under oars</i>			
<i>6. Row a lifeboat</i>			
<i>7. Use lifeboat equipment</i>			
<i>8. Rig devices to aid detection</i>			
<i>LAUNCHING AND RECOVERY OF RESCUE BOATS</i>			
<i>1. Command launching the rescue boat</i>			
<i>2. Launch the rescue boat</i>			
<i>3. Operate the rescue boat during launch – Act as coxswain</i>			
<i>4. Operate the rescue boat during launch – Act as boat crew</i>			
<i>5. Operate the rescue boat during recovery</i>			
<i>6. Command the rescue boat during recovery</i>			

* By signing, I acknowledge that I have had at least one year of sea service in a licensed capacity within the past five years and that I am serving as a licensed officer on the vessel upon which these assessments are being performed.