OCEAN Technologies Group

Basic Training for Service on Ships subject to the IGF Code

Workbook

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Contents

1. Information

Please read the following notes carefully before carrying out the assignments.
Use the learning from all course modules, recommended industry publications, the Company SMS and advice from fellow officers onboard (if possible) to present your answers. All questions must be attempted as incomplete portfolios will be returned unassessed.

Health, Safety and Protocol

Much of the work will require you to research information from your current or most recent ship. Always comply in full with all Health and Safety protocols and seek permission from the Master and/or relevant officers where your work takes you away from your ordinary routine. Take care not to interfere with shipboard operations and time your work to fit in with the work of others.

2. Assessment Guidelines

Learning Outcomes of the Course
On successful completion of the course you will:

1. know the properties of fuels covered within the IGF Code and the hazards associated with their use as a fuel
2. be able to apply health, safety and environmental precautions and measures in working on vessels using fuels covered within the IGF Code
3. understand the transfer and storage process for fuels covered within the IGF Code.

There are nine modules in this course mapped to the learning objectives, as follows:

	LEARNING OUTCOMES ASSESSED
Module 1 INTRODUCTION	1
Module 2 THE PHYSICS OF LIQUEFIED GAS	1
Module 3 SHIP DESIGN	2 & 3
Module 4 FUEL SUPPLY ARRANGEMENTS	1 & 3
Module 5 HAZARDS AND HAZARD PREVENTION	1 & 2
Module 6 OPERATION, MAINTENANCE AND SAFE WORKING PRACTICES & PROCEDURES	2 & 3
Module 7 SAFETY EQUIPMENT AND PROTECTIVE DEVICES	2
Module 8 FIREFIGHTING OPERATIONS	2
Module 9 EMERGENCY PROCEDURES	2

Assessment

On this course, you are assessed in two ways:

Assessment	Delivery	Learning Outcomes Assessed	Min Pass mark
1. Final Test	Closed questions - onscreen	1-3	75%
2. Module Assignments	Open questions – completed offline	1-3	Grade A

- You must achieve at least 75% in the final test and Grade A or higher in all module assignments. If you do not achieve this result in any one element, you will be required to review the course material and re-attempt that element. Note that a re-assessment fee may be payable.
- All onscreen tests are automatically marked and the result displayed onscreen. You will be required to print your final test result immediately after you complete it. The course documentation checklist refers.
- Criteria marking is used to mark all module assignments. The marking scheme used is provided in **Annex A**.
- A grading sheet will be completed by the course assessor when your module assignments are marked. This will be sent to you. Where necessary the course assessor will provide feedback or notes for your attention.

Completing Module Assignments

The following word count is suggested for each of the module assignments of the course.

Module	Question(s)	Suggested Word Count
1	1	150-200
2	1 2	100-150 75-100
3	1 2 3 4	50-75 50-75 50-75 100-150
4	1 2	100-150 150-200
5	1 2 3	75-100 100-150 50-75
6	1 2	50-75 50-75
7	1 2	75-100 75-100
8	1	150-200
9	1	150-200

Module assignments should be completed electronically (font size 12) or by hand in clear handwriting. Where required or as appropriate, you may provide diagrams or sketches to illustrate your answers. SMS procedures and documents are accepted as scans/attachments. The course assessor reserves the right to reject work that is not presented clearly and legibly.

You are reminded that all onscreen tests and module assignments **must** be completed under 'exam conditions'. This means under the direct supervision of an authenticating person who will attest that your assessments have been completed unaided and solely by you. You are strongly advised to keep a back-up of all your work before sending it to us for Assessment. Anything you quote or paraphrase from a publication or other source must be referenced in your work, by giving the following information:

- Author's name
- Title of Publication
- Year (and day/month if a newspaper article or magazine) published
- Page reference
- Name of Publisher
- Place of Publication

Method of acknowledging other's work

a) Use "quotation marks" round the actual words you have copied and insert a brief reference in brackets () at the end. The brief reference should contain author's name and publication year only.
b) Supply the full reference in a list at the end of your answer.
   i. Example
   "Crude Oil is any oil occurring naturally in the earth whether or not treated to render it suitable for transportation and includes:…" (SOLAS 1997 p148)

   and then, at the end of the answer, supply the full reference thus:

   SOLAS, Consolidated Edition 1997, Ch II-2 Para 28, International Maritime Organization, London.

If you need assistance or clarification on the contents of this workbook, do not hesitate to contact us at courses@oceantg.com

ANNEX A - GRADE CRITERIA FOR MODULE ASSIGNMENTS

Notes

- Percentage marks shown under each grade are for guidance only. The assessor will only issue a grade for each module assignment.
- All module assignments must achieve a pass grade for a course certificate to be issued.

MARKING CRITERIA:	GRADE CRITERIA				
	Grade D Refer (0-24%)	**Grade C Refer (25-49%)**	**Grade B Refer (50-74%)**	**Grade A Pass (75-85%)**	**Grade A+ Pass (86-100%)**
Submitted answer fully addresses the assignment question	Poor, significant missing or inaccurate information	Unsatisfactory, mostly inaccurate or missing information	Satisfactory, planning and structure but key elements missing or inaccurate	Good, any errors or omissions are within acceptable limits	Excellent, all key criteria included with no factual errors
Comprehensive knowledge of relevant taught material has been demonstrated	Poor, core modules information missing or superficial coverage	Unsatisfactory, superficial, inaccurate or weak description of taught content	Mainly satisfactory, but some elements of relevant content missing	Good description of relevant content appropriate to question. Some use of additional information sources used	Excellent description of relevant content appropriate to question. Additional information sources used to good effect
Knowledge of industry best practice, Codes and/or Regulations has been demonstrated where applicable	Token attempt. Poor, missing or inaccurate information	Incorrect or limited application of Codes or regulations used. Little use of best practice applied to question	Answer is satisfactory with some limited use of Codes, regulations or best practice in answering the question	Good knowledge of relevant industry best practice, Codes and/or Regulations demonstrated	Thorough knowledge of relevant industry best practice, Codes and/or Regulations fully demonstrated
Work shows evidence of further reading beyond the taught content	Poor, little or none is evident	Some evidence shown	Satisfactory in some respects, but limited in scope	Good use of further reading shown in answer	Excellent, consistent evidence of further reading has been used
Word count for each question has been complied with	Little attempt made to meet word count limits	Word count limits not met for majority of modules	Word count limits have been met for majority of modules	Word count limits met	Word count limits met

3. Basic Training for Service on Ships subject to the IGF Code Assignments

Module 1 Assignment

1. What kind of fuels are covered by the IGF Code? Describe how LNG & CNG are carried as fuel.

Module 2 Assignment

1. What do you understand as the phases of matter? Give a brief description of each and the main difference between them.
2. Describe in general terms how raw feed gas is turned into LNG.

Module 3 Assignment

1. What are the fundamental design concepts of machinery spaces?
2. Describe the various types of tank insulation and how they work?
3. How is liquefied gas fuel fed to the engine?
4. Describe the types of fuel pipes and where each is likely to be used? Discuss the design features that reduce the risks caused by gas in the fuel pipes.

Module 4 Assignment

1. Briefly describe the 3 main methods of bunkering a ship with gas fuel.
2. What are the basic LNG gas engine systems? Give a brief description of how each operates.

Module 5 Assignment

1. Explain the meaning of reactivity. Give four examples of possible reaction with a gas fuel that could be encountered onboard.
2. What are the three main health hazards of exposure to liquefied gas? Briefly explain the warning signs and first aid treatment for each.
3. What immediate actions should be taken in the event of a vapour cloud occurring due to a release of LNG?

Module 6 Assignment

1. Describe the role and responsibilities of the PIC during bunkering.
2. What is the function of a Bunker Delivery Note (BDN) and what information does it contain?

Module 7 Assignment

1. Describe the PPE you would expect to use for entering a LNG fuel storage area, stating any special requirements for the equipment if maintaining or operating the storage system due to the nature of the fuel.
2. Outline the safety checks to be made before using a SCBA and what should be monitored when using the equipment. Additionally, state TWO circumstances when a space should be immediately vacated when using SCBA..

Module 8 Assignment

1. Compare dry powder and CO_2 as a fire-fighting medium. Your answer should give the advantages, disadvantages and hazards of each and identify appropriate areas onboard for their use

Module 9 Assignment

1. Outline the Emergency Response Plan on board your vessel for dealing with a spill during bunkering operations alongside.

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4. Document status

Issue no.	Date	Author
1.1	9 June 2021	SG

5. Changes in the document

Issue no.	Paragraph no.	Description
1.1	1	Minor amends to wording
1.1	2	New Assessment Guidelines with Annex A inserted incorporating some existing information on referencing. Subsequent paragraphs renumbered.