1. Course Title: Liquefied Petroleum Gas Tanker (LPG) Cargo Operation

2. Scope With reference to convention Imo Model Course:

This course is designed to equip individual with skills, knowledge and attitudes required to -

- Contribute to safe cargo operation of GAS tankers
- Knowledge of liquefied gas tanker design, systems, and equipment
- Take precautions to prevent hazards & safety relevant to liquefied gas tankers.
- Proficiency to calibrate and use of monitoring and gas-detection systems, instruments and equipment
- Apply occupational health and safety precautions & measures.
- Apply precautions and contribute to the prevention of pollution of the marine environment.
- Carry out fire fighting operations
- Respond to emergencies
- Take precautions to prevent pollution of the environment from the release of gas.
- familiarization with the publication, equipment, instrumentation and controls used for cargo handling on a LPG tanker
- a greater awareness of the need for proper pre-planning, the use of checklists and the time scales involved in the various cargo handling operations
- an enhanced awareness to apply proper and safe procedures at all times when carrying out the various operations on board a LPG tanker
- an acquisition of experience in identifying operational problems and solving them
- An improvement in the ability to make decisions which promote safety and protect the environment.

in accordance with maritime industry standards.

3. Objective:

After completing the course, the candidates should be able to acquire the knowledge, skills and attitude for the safe cargo operation of gas tankers and ballast installation of a gas tanker, precautions to prevent hazards, prevention of pollution, firefighting operations, Knowledge and understanding of relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL), emergencies, more effective contribution to the operation and control of the cargo, which will improve ship safety and provide greater protection of the environment,.

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SL NO	Knowledge, understanding and proficiency	HOUR
1	Familiarization	6.0
2	Special operations and Procedures	10.0
3	Ballast Operations	4.0
4.	Cargo Operations	6.0
5.	Operational Problems / Difficulties	4.0
	Total	30.0

4. Course Outline Shore base & On board Training:

5. Competence Standard/Course Syllabus Checked with up-to-date STCW/IMO Model Course:

SL NO	Knowledge, understanding and proficiency	HOUR
1	Familiarization	6.0
1.1	Type of ship (LPG)	
1.2	Type of Tanks	
1.3	Tank arrangements (General)	

1.4	Cargo containment system	
1.5	Pipeline arrangements	
1.6	Pipe system, control valves, ESDS	
1.7	Pumps (Spray & Cargo),	
	Low Duty (L/D) and High Duty (H/D) Compressors,	
	Low Duty (L/D) and High Duty (H/D) Heaters,	
	LNG Vaporizers and Forcing Vaporizers	
	Reliquefaction plant	
1.8	Instrumentation and auxiliary system	
1.9	Controls	
1.10	Basic operations and procedures	
2	Special operations and Procedures	11.50
2.1	Tank atmosphere evaluation	
2.2	Cargo ventilation system	
2.3	Reliquefaction system & control of boil-off	
2.4	Gassing up cargo tanks	
2.5	Procedure for changing cargo and tank cleaning	
2.6	Loading procedures	
2.7	Boil off Gas (BOG) Control Gas freeing	
2.8	Cooling down of cargo tanks	
2.9	Warming up cargo tanks	
2.10	Use of inert gas	
2.11	Draining and stripping procedures	
3	Ballast Operations	2.50
3.1	General provisions	
3.2	Ballasting	
3.3	De-ballasting	
4.	Cargo Operations	6.0
4.1	General cargo handling provisions	
4.2	Cargo measurement & calculation	
4.3	Cargo Condition maintenance on passage & in port	
4.4	Procedure for preparation for loading cargo	
4.5	Procedure for preparation for unloading cargo	
5.	Operational Problems / Difficulties	4.0
5.1	Cargo and related operations . normal working	
5.2	Introduction of system faults, malfunctions, accidents	
5.3	Remedial actions	
	Total	30.0

6. Entry Standard, Selection Criteria of Students:

Trainees or students wishing to gain entry into this course should possess the following requirements:

- Age: be not less than 16 years of age.
- Education & Training: must have valid seafaring documents.

7. Intake limitation, with specific mention Instructor-student ratio:

The number of trainees should not exceed 24 and the practical training should be undertaken in small groups of more than eight.

8. Qualification and experience of instructors:

Minimum qualification of any instructor or assessor must be Class- I Deck/Engine Officers with tanker knowledge.

9. Qualification and experience of assessors:

Minimum qualification of any instructor or assessor must be Class- I Deck/Engine Officers with tanker knowledge.

10. Details Facilities & Equipment, materials and resources available for the training; Visual aids lecture Notes, Library facilities, Rental documents, Workshops Training Equipment: Navigational, Engineering, Communication, Seamanship etc:

- Projectors and slides
- Multimedia and videos
- Advanced audio visual systems
- Tanker simulator
- Dummy tanker ships, tank lid, manifold
- Pump model Room

11. Conduct of Training with number of classroom lectures, practical work use of simulator, video etc:

Theoretical and practical instruction is given with appropriate arrangement and combination. Laboratory demonstration and guided hands-on followed by assigned group activities shall be employed to facilitate training & assessment.

12. Total duration of Training; Duration of Practical's:

Training period is of 05 days, (30 Hours)

- a. Theory 25 Hours
- b. Practical 05 Hours

13. Assessment procedure, whether independent of instruction or continuous performance evaluation:

Course end assessment shall be carried out to ensure adequate knowledge, understanding & competence of the candidate.

A variety of source of evidence are used which include evidence of candidate's ability, under realistic condition. Short answers, multiple choice, fill in the blanks and true/false type questions in a written test are used for assessment includes direct observation, oral questioning and role play.

14. Formats of certificate to be issued with correct reference to STCW and reference to approval and authorization by the Department of Shipping and contact point of the issuing institution for verifying authenticity:

					1	Annex- 02
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	Tel. 880-3	outh Halisbahar, P.O. B 31-740569, Fax. No. 88	andar, Chittagong, 4100 0-31-800620, E-mail: <u>r</u>	l, Bangladesh. imictgbd@btcl.net.bd		
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		CARGO OPEI	RATION CERTIFI	CATE		
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15. Maintenance of records in Data-base for facilitation of checking including assessments:

NMI will maintain a data-base of all the students who have completed the course. The following records for each individual will be kept so as to ensure that the certificate is issued to a candidate who has met the requirements as laid down by the governing authority regarding issuance of a certificate on Bridge Resource Management.

- Application form
- Assessment papers after completion of course
- Attendance Sheet
- Attested Xerox copy of the issued certificates & licenses
- A registered data-base in hard copy and soft form

16. Internal Quality Standard System if any. Students Impressions, past results:

The institute maintains quality standard system ISO 9001:2008, Certified by DNV GL

17. Course notice served, course conducted as per course notice, progression report served: Will be complied as per DOS Instruction.

18. Attendance of Students and Instructors:

Students and Instructor attendance sheet attached.

		NA	TIONAL MARI	TIME INST	ITUTE		<u></u>
			TRAINING	RECORD			
	Instructor:						
•	Venue:						
	Subject:						
	Brief description on	training mater	ial:				
			Attend	lance:			
	Name & rank	Sign	Name & rank	Sign	Name & rank	Sign	
	Signature Management Rep	resentative			Si P	gnature rincipal	
NMI-QP- Rev.: 01	F-04-R1 (10/2013)	Pre MF	epared by:	Reviewed by: PRICIPAL	Approved by: DG(DOS)		Page 1 of