LOSS CONTROL MARINE EXPEDITOR CERTIFICATION 2019-2020
4 day workshop : 2 days Bulk Oil and/or 2 days LNG

To become and be a LOSS CONTROL MARINE EXPEDITOR working internationally is an adventurous and challenging job.

It means mastering and supervising the art of loading and unloading activities and carrying the responsibilities that come with it. Loss Control means the act of preventing losses from taking place wherever they may occur, or when they do happen, be able to determine and explain where and why they occurred.

This workshop will teach you the skills for protecting your client's interests by understanding the varied causes of losses, how to investigate them and how to minimise their effect; it will also help improve your professional and technical reporting skills. You will learn how to communicate professionally and make the most of cooperation with independent inspectors, ship's crew and shore operators or loading masters.

It involves Custody Transfer, which in short means the transporting of physical substance from one operator to another under an agreed quantity and quality policy. It includes the transferring of raw and refined petroleum between tanks and tankers. Every step of this Custody Transfer Operation such as safety, quality and quantity protection, preparation by planning, transparent communication and organization, are the essential skills required.

This workshop is designed to teach and create confidence by practical learning. It focuses on how to achieve maximum efficiency as an Expeditor in Loss control techniques and also how to exercise pragmatic control to minimize port turn-round time.

The initial part of the training will be to test existing knowledge of the students. At the end there will be an exam, which allows the students to be officially recognized as Loss Control Marine Expediters by TTT as an official learning affiliate of the Energy Institute.

This training program can be delivered all over the world on demand at your location. In the case when 'on the job' guidance is needed to prepare your personnel prior to the workshop, then this can also be provided.

This 4 day course covers Marine Expeditors work on Crude and Product Tankers for the First two days. LNG Cargo Measurement and Quality control is covered during the last two days.

For more information, please check our website; www.tankterminaltraining.com

MARINE LOSS CONTROL EXPEDITOR – 4 DAY WORKSHOP (including COW and LNG Loss Control)

(Trainer: Capt. Shyam Paliwal)

Objectives and Expectations from the Expeditor and COW Course

By the end of this course you should be able to:

- Have an understanding of the role and the requirements of an Expeditor
- Have a greater understanding of Oil measurement and sampling practice
- Have a thorough grounding in Oil Loss Control techniques including Crude Oil Washing with various types of crude
- Understand the importance of demurrage issues
- Be able to understand the term “observational awareness”– and determine what is important information for your client (and what is not).
- Have a Greater Understanding of LNG Measurement and sampling practice.

Who should attend

Everyone involved in daily bulk oil cargo handling, shipping, transport, inspection, tank storage, refining, marketing, brokering concerned with quantity, quality or operational loss before, during and after custody transfer.

Traders, brokers, tanker operators, surveyors, inspectors, superintendents, P&I surveyors, loading masters, charterers, procurement officers, tanker crew and officers, terminal managers, port captains, customs officers, shipping agents, and people interested in this profession as a career path.

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Day 1

Part 1 – Introduction & Loading Operations (Bulk Liquid Oil and Petroleum)

Introduction

- **What is an Expeditor (OLC Super)?**
  - The Expeditors role and the importance of communication
- **Safety & preparation**
  - PPE, ISGOTT,EI model
  - **Q & A session**
- **A recap on measurement practice**
  - Definitions – TCV/GSV/VEF/ROB/Innage/MMC etc –
  - Equipment accuracy and calibration
  - Gauging accuracy
- **Definition of Losses/Gains**
  - Impact of differing Measurement Tables used
  - **Q & A session on all above**
- **Custody Transfer**
  - Definition and description
  - How buying – how selling (Quantity & Quality)
- **Oil Loss Control – At Load ports – Crude and products/Blending**
  - 7 Key points at loading (incl. documentary & Voyage instructions)
  - **Q & A session**

Section A - Loading Crude, Products — The vessel

- Key Meeting
- Readiness to Load
- Tank & ships line Cleanliness
- Space available
- Deadweight calculations
  - **Case studies**
- Forecasting B/L date – demurrage issues
  - **Case studies**
- OBQ measurements / Wedge Formulae
  - **Case studies**
- VEF assessment – intro – latest API updates
- **Q & A session**
  - **Case studies**
- Deballasting
  - **Case studies**
- Vessel Stresses / sagging – effect on max draft etc
- Completion of Loading
- Final cargo measurement - ship
- Cargo heating?
- Where quantity losses can occur at loading when B/Lading is based on received ship figure.

Section B - Loading systems – Terminal

- Meters, Shore Tanks, FPSO, STL,
- Meter issues
- Shore Tank measurement – Fixed/floating roof
  - critical zones – issues
  - slotted still wells
  - Temperature layering (applies also to vessels)
  - Free water drainage
  - **Q & A session**
- Line fullness checks – high point bleed/ displacement/ circulation /press /pigging
  - Drawbacks to each method
  - **Q & A session and Case studies**

Section C - Quality Assessment – Sampling & Analysis techniques

- Examples of poor quality sampling
- Ship composite sampling – right and wrong ways – latest equipment
- Auto in-line sampling
  - Correct setting up and sealing
  - In-line homogenisers
  - Monitoring operation
  - Performance checking
  - Manifold samplers
  - **Case studies - Q & A session**
- Analysis methods for crude
- Repeatability and reproducibility
  - **Case studies - Q & A session**
- Additional Sampling & analysis methods for products
  - **Case studies - Q & A session**

Section D - Blending on board

- Bench blends
- Line content
- Overall blend on board – sampling and associated problems
- The importance of reproducibility when retesting samples later

Section E – Demurrage

- Charter Party Definitions
- Brief explanation on Demurrage
- **Case studies**
- Long Term Charter Party

Section F - Official Documentation

- checks and Protests

Recap - Expeditors tasks at a loading

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Day 2

– Crude Oil and Products, COW & Stripping Operations,

- A recap on Custody Transfer / how selling?
- 8 Key points at a discharge

Section A – Terminal Discharge Plan – impact on Oil Loss Control

- Ship/Terminal interface – how Q & Q will be assessed
- Specifics to discuss with Terminal, Inspectors and Client
- Expeditors tasks
- Recap of all measurement/accuracy issues influencing Quantity & Quality as discussed for load –
  - **Case studies - Q & A session**
- Volumetric Shrinkage
- Line fullness check -
  - **Case studies - Q & A session**

Section B – Vessel at Discharge

- Key Meeting
- Measurements
- Discharging plan and operations
- Expeditors tasks before and during the discharge
- Ballasting during discharge (especially during COW)

- **Pumping & stripping**
  - Pump types –
    - Centrifugal
    - Positive Displacement
    - Deepwell pumps – the advantage for products

Section C - Introduction to Crude Oil Washing

- "Fire triangle" and safe atmosphere diagram explanation
- The need for quality Inert gas - Non-flammable atmospheres
- A short review on IG plant on Tankers
- Testing equipment for O2 levels prior to COW.
- COW equipment – various machines available – advantages/disadvantages
- The washing program
- Crude assays and the "wax problem"
- Heating the cargo for COW
- The best washing techniques for minimising ROB,
- Monitoring the COW performance (i.e. pressures, machine rotation, slop returns, ROB etc)
- Keeping a COW Log and reporting on the COW performance,
- Why so many losses when "assays" not reviewed prior to washing?
- COW Report and recommendations to your Clients for future operations
- The Discharge Letter
- **Case studies - Q & A session**

Final important stages on the vessel (Section B continued)

- The stripping operation
- how to ensure the best possible returns to slop tanks & improve Outturns
- Line stripping
- The Marpol line – contamination risk !
- Pumping Logs
- ROB measurement
- Comparison ship/shore (provisional) Outturn
- ROB Reports & Protests

Final Stage in Terminal –(Section A continued)

- Provisional Outturn assessment – Quantity & Quality
- Auto-sampler performance
- Mixing of sample
- Analysis and reporting
- Samples retained where necessary
- Final Outturn calculation
- Quantity shore terminal accuracy issues
- Using ship delivered figures (VEF adjusted) for Outturn

Section D - Email Communications at a Discharge

Section E - Incident reporting - Case studies

Section F - Vapour Emission Control & Vapour Loss

Q & A session
Recap - Expeditors tasks at a discharging
Practical Exercise 1

- **Large Loss after loading**

Practical Exercise 2

- **Large Loss after discharging a heavy waxy crude**

Ship To Ship (STS) operations, Voyage Analysis & Reconciliation, Loss Investigation

Section A - Ship To Ship (STS) operations

- Quantity & Quality control
- B/Lading assessment
- Safety

Section B - Voyage Analysis & Reconciliation

- Definition of type of Losses & Gains
- Examples of calculations – Crude, Products
- **Q & A session – test questions**

Section C – Loss Investigations – Primary & Secondary

- **Case studies - Q & A session**

Section D – Final Report

- **Report Types**
  - Expediting type
  - Claim and/or Loss type

Written Exam (30 minutes) to be certified as Oil Marine Expeditor.

LNG – Liquefied Natural Gas Handling and Loss Control

Day 3

- Measurements in LNG
- Why LNG Measurements are in mmBTU and not in Volume
- Measurement Tables in LNG
- Losses in LNG.
- Boil Off Control

Loading of LNG ships

- Commissioning of LNG Tanks.
- Gassing Up of LNG Tanks.
- Cooling Down of LNG Tanks
- Cool Down Curves
- Loading operations
- Warm up Operations
- Tank Inerting
- Gas Freeing the LNG Tank

Types of LNG Tank Construction

- LNG Tank Construction
- Effects on LNG Measurement as per Tank Types.
- Tank Shrinkage due to Cyrogenic nature of LNG.
- Tape Shrinkage.
- Membrane Type Tanks.
- Moss type Spherical Tanks.

LNG Cryogenic Electrical Pumps, Pumping & stripping

- Pump types –
  - Centrifugal
  - Electric Motor Driven
  - Electric pumps – the advantage for LNG

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Day 4

Ship To Ship (STS) operations, Voyage Analysis & Reconciliation, Loss Investigation

Section A – LNG Ship To Ship (STS) operations

- Quantity & Quality control
- B/Lading assessment
- Safety
- Fenders and Hoses used for LNG STS transfer.

Section B - Voyage Analysis & Reconciliation

- Definition of type of Losses & Gains
- Examples of calculations – LNG for different tank types
- Radar Gauges.
- Float Gauges.
- Capacitance Gauge
- **Q & A session – test questions**

Section C – Loss Investigations in LNG – Primary & Secondary

- **Case studies - Q & A session**
- **Practical Exercise 3**
- **Trouble shooting at LNG Terminal in Northern Russia.**
- Quantity Losses in LNG based on Ship's Figures.
- LNG inline Sampling.
- LNG Sample Contamination
- Analysis Methods for LNG

Section D – Final Report

- **Report Types**
  - Expediting type
  - Claim and/or Loss type

Section E – Case Study of LNG EDO at a terminal in Nigeria

- **Written Exam (30 minutes) to be certified as LNG Marine Expeditor**

The next Step – short presentations on recommendations for the future:-

- How to be the very best Expeditor
- Introduction into CPD
- Membership of the EI

Post Course Feedback form completion

********* End of Workshop *********

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Your Trainer: Capt. Shyam Paliwal

Shyam has more than 12 continuous years of successful hands-on problem solving and decision making experience in challenging, dynamic and multifaceted marine work environments at sea and ashore, in a position of responsibility or other crucial decision-making leadership capacities. This includes 7 years as a Captain/Senior officer aboard deep-draft LNG tanker vessels transporting volatile cargoes in the world-wide liquid gas trade, with unblemished safety record as well as outstanding personnel evaluations.

This was followed by 5 years of work experience at LNG and Oil & Gas Terminals in Korea in the capacity of LNG advisor to Shell Trading and Shipping Company (STASCO). During his time with Shell he was responsible for Oil loss control and helped save millions of dollars by preventing shortages and contaminations. Shyam has worked as a Consultant in Korea for P&I clubs in investigating contamination losses of petroleum products. He has successfully reduced the vessel turnaround times and increased berth utilization. He commissioned the 4 largest LNG carriers in the world the Q-Max vessels at LNG Import terminals in Korea. Each vessel is an LNG terminal on its own with a re-liquefaction plant and an enclosed flare. Shyam also supervised the building of 25 Oil and LNG Tankers at Samsung, Daewoo and Hyundai Shipyards in Korea as a Nautical Inspector while working for Shell in South Korea. He provided LNG marine operations, safety and regulatory compliance consulting services to major energy and marine transportation companies. Shyam has significant shore side operations management experience with broad knowledge of commercial aspects of global maritime enterprise and energy shipping. He holds various marine technology patents and copyrights. He is a Master Mariner and a member of the Nautical Institute, UK.