Anatomy of LNG Shipping & Operations

13 - 17 May 2018
The Møller Centre • Cambridge

Organised by

Cambridge Academy of Transport

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Cambridge Academy of Transport

Registration Form

ANATOMY OF LNG SHIPPING & OPERATIONS

13–17 MAY 2018

To register, please complete this form and send it by fax or email to Tulika Singh at the number given below.

PARTICIPANT 1: Title _____ First name(s) _____
Family name _____
Company position _____

PARTICIPANT 2: Title _____ First name(s) _____
Family name _____
Company position _____

PARTICIPANT 3: Title _____ First name(s) _____
Family name _____
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Tel: _____ Fax: _____
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❑ Enclosed is a cheque ❑ Please invoice my Company ❑ I wish to pay by Credit Card (details below)

Seminar Fees: The fee of **£3,900** includes UK Value Added Tax, tuition, accommodation, all meals, documentation and a full social programme. Payment can be made by cheque, bankers draft or inter-bank transfer. Cheques should be made payable to Cambridge Academy of Transport in Sterling drawn on a Bank in the United Kingdom. Our Bank details are:

Barclays Bank Plc, 28 Chesterton Road, Cambridge CB4 3AZ, UK
Account Number: 60224553 **Sort Code: 20-17-35**
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Tulika Singh, Course Organiser
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Course Programme

Anatomy of LNG Shipping & Operations
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Seminar Leader

Paul Veldhuizen • Former Operations and Business Development Manager • Shell International Trading & Shipping Co Ltd • London • UK

INTRODUCTION

Sunday 13 May

Session 1

Welcome & Course Introduction **1645-1730**
Welcome, introductions, expectations, housekeeping

Cambridge Orientation **1730-1800**

INTRODUCTION TO THE ENERGY MARKETS

Monday 14 May

Session 2

The Energy Mix **0830-1000**
- Coal, Oil, Gas and Renewables – overview
- Factors influencing Supply and Demand
- Demand outlook and forecast for LNG in the mix

Session 3

Introduction to Energy Trading and Shipping **1015-1045**
- Introduction to energy trading
- the role of shipping

NATURAL GAS AND LNG

Session 4

Supply-side Considerations **1045-1200**
- Physical properties and challenges
- LNG Production, Storage and Handling
- Distribution
  - Pipeline vs. Liquid
  - Economic and political considerations

Session 5

The LNG Trade **1200-1300**
- LNG Trade Patterns: Historic and Current
- Emergence of LNG Commodity Market – impact and implications

CARRIER DESIGN & CHARACTERISTICS

Session 6

Key Elements of Carrier Design - I **1400-1515**

- Challenges
  - Physical challenges
  - Construction costs
  - Capacity trends
  - Management
- Containment Systems – past, present and future

Session 7

Key Elements of Carrier Design - II **1530-1700**

- Propulsion Systems – past, present and future
  - Economic evaluation
- Reliquefaction
- Floating Regasification
- Compressed Natural Gas (CNG) options
- Floating LNG terminals (FLNG) and other new developments

LNG TERMINALS

Tuesday 15 May

Session 8

Design Features of Load and Discharge Facilities **0830-1000**

- Land installations
- Floating facilities
  - Floating Storage Regasification Units (FSRU),
  - FLNG

Session 9

Logistics Challenges **1015-1115**

- Annual Delivery Programmes
- The art of scheduling
- Impact of cool-down
- Ship/Shore compatibility
- Emergency Shut-Down Systems
- Safety Procedures

VESSEL OPERATIONS

Session 10

Primary Features of Vessel Operations **1130-1245**

- Boil-Off Gas
  - Its use as fuel
  - Reliquefication options
  - Use of the Gas Combustion Units (GCU)
- Heel – purpose and management

Session 11

Case Study #1: Heel Management **1245-1315**

Session 12

Cargo Handling **1415-1445**

- Cool-down
- Tank preparation
- Fill limits
- Sea conditions and the effect of sloshing

Session 13

Ship Management **1445-1530**

- Operating cost structure
- Crew matrix and other crewing considerations
- Maintenance & repair experience of marine cryogenic systems

VOYAGE & DEAL ECONOMICS

Session 14

Fundamental Cost & Revenue Criteria **1545-1715**

- The distinction between voyage and deal economics
- Contract terms and margin expectation
- Measuring vessel earning

Wednesday 16 May

Session 15

Factors Specific to the LNG Business **0830-1030**

- Introduction to LNG specific factors
- Heel Retention vs. Cool-Down - worked examples
- Fuel vs. Force Vapourising
- Bunkering Strategies e.g. Low Emission Trading Areas

Session 16

Case Study #2: Voyage Economics **1045-1145**

Session 17

Performance of the Voyage **1145-1245**

- Voyage Orders and Communications Protocols
- Emergency Response
- Piracy and General Security

CHARTERING

Session 18

Chartering in the LNG Market **1345-1515**

- An overview of the Global LNG fleet by
  - Age
  - Size
  - Ownership
  - Regional differences
- Introduction to the charter market
  - Key players
  - Terminology
  - Conduct in the market

Session 19

Charter Parties Used in the LNG Trades **1530-1700**

- Adaptation of Standard Charter Party Forms
- Differing Formats and their merits
- Charter Party Clauses
- Negotiation practices

Thursday 17 May

Session 20

Cargo versus Vessel Contracts **0830-0900**

- The gap between the cargo contract and the charter party
- Lay/Can considerations
- Laytime inconsistencies

Case Study #3: Introduction to the Chartering Game — **Session 21 0900-0930**

The Chartering Game — **Session 22 0930-1030**

The Chartering Game - *continued* — **Session 23 1045-1130**

The Chartering Game: Round-up and Discussion — **Session 24 1130-1200**

Q&A and "Stretch Time" — **Session 25 1200-1245**

FUTURE TRENDS

Global Energy Demand — **Session 26 1345-1415**

- Energy Conservation
- Expansion of renewable sources
- Their impact on the market for LNG and shipping

Ship Propulsion and Containment Systems — **Session 27 1415-1445**

- Propulsion systems
  - Steam turbines
  - Conventional versus Ultra High Pressure
  - Two versus four-stroke diesel engines
  - Dual-Fuel Diesel Electric (DFDE)
  - Tri-Fuel Diesel Electric (TFDE)
  - Gas turbines
  - Respective thermal and fuel efficiencies
- Use of boil-off gas versus gas recovery
- Containment Systems
  - Self-supporting versus membrane technology
  - Advantages and disadvantages of each
  - GTT latest technology

LNG as a Fuel — **Session 28 1445-1545**

- LNG as fuel
- Economic and environmental justifications
- Risk of LNG as a marine fuel
- Is retro-fitting an economic proposition

Course Conclusion — **Session 29 1545-1600**