

## OFFSHORE SUPPORT INDUSTRY

November 2022

### EXAMINERS REPORT

#### Question 1.

Students should have a general understanding of each of the terms/acronyms:

- i. PLGR  
Pre-Lay (or Pipeline) Grapnel Run.  
Sometimes termed route clearances and done in conjunction with boulder clearance  
To clear the seabed of debris along a cable or pipeline route.  
Vessels need to have good slow speed positional control and bollard pull.  
Also sufficient deck space to deploy grapnel and to store recovered debris.
- ii. W2W  
Walk to Work.  
A system giving safe access to offshore structures and providing increased access to platforms during bad weather.  
Used extensively in the offshore wind industry, but also Oil & Gas  
Systems involve active heave compensated (AHC) gangways and are considered safer than boat landing systems and more cost effective than helicopters  
Vessels equipped with W2W will often have extensive accommodation, large deck for maintenance work and a AHC crane for transferring equipment.
- iii. OIM  
Offshore Installation Manager.  
The legal manager of a platform/installation responsible for all aspects of operations and can be considered similar to the master on a ship (many OIM's will be Master Mariners)  
Key Duties include:  
Ensuring compliance with statutory procedures and regulations relating to offshore operations and manage daily operational activities production, construction, intervention, IRM etc.  
Manage emergencies- OIM is the most senior manager offshore and is responsible for dealing with any emergency situation.  
Organise, supervise and delegate the activities of offshore personnel to ensure that all maintenance, housekeeping. Inspection and repair functions are performed in a safe, efficient and timely manner.

- iv. MODU  
Mobile Offshore Drilling Unit.  
Three types of drilling units:  
Jack-Up Rig; Semi-Submersible Rig; Drill Ship  
A brief explanation of each type including a description of their operating concept.
  
- v. Pipe Carrier  
A sub-category of PSV.  
Most PSV's will regularly carry tubular cargoes ie. drill string, casing and tubing, however the quantity of pipe needed to supply a modern pipelayer dictates vessels with high tubular capacity will be preferred.
  
- vi. Hyperbaric Lifeboat  
A lifeboat with the capability of being pressurised for evacuation of divers in the event of an incident onboard a Diving Support Vessel.  
A requirement for vessels equipped with Saturation Diving Systems.  
Connected by tunnel to the decompression chamber installation on the vessel.

### Question 2.

Students were expected to understand the basic concept of diesel main engines driving propeller shafts combined with alternator/electric motor units (PTO/PTI) integrated with the main engine gearbox.

An answer should demonstrate understanding of: Improved vessel performance; Reduced emissions; Lower operating costs due to lower fuel consumption; Lower maintenance costs related to engines hours; Reduced noise levels and vibrations on board - also reducing in- water noise; Improved long-term efficiency of the power supply system; Higher redundancy.

Disadvantages of cost and complexity could be described.

A sketch could be used to demonstrate understanding.

### Question 3.

Students were expected to produce a drawing of a AHTS and the sketch should provide sufficient detail to demonstrate understanding of the basic structure and equipment incorporated in the vessel.

Suitably annotated sketches to be elevation and plan showing general arrangement, bridge, FRC, engine room and propulsion (main & directional) winches, cranes (incl. rail cranes), tugger winches, chain stoppers, towing pins, capstans, stag horns, roller stern.

Additional features such as: Helideck, ROV/LARS system, moonpool, rescue zone, fire monitors, DCs, Active Heave Compensation Crane (AHC) etc can be included and gain marks, but only if it is made clear that these are not 'standard' AHTS equipment.

Description of features – Minimum of DP2, propulsion arrangement described ie. number and location of thrusters/azimuths, PTOs/PTIs.

Power and bollard pull.

Appropriate dimensions (LxBxD) capacities/type of bulk cargo, deck area (incl. steel sections)

Chain and wire pennant capacity – description of winch drum and chain locker configurations

Speed and consumption.

Awareness of modern design for harsh weather/arctic operations - size, freeboard, bow shape,

de-icing.

Environmental design features, sulphur emission areas, 'Clean Design' class notation.

#### **Question 4.**

A good answer should identify an area with significant offshore operations and listing ports with distances/steaming times to locations.

Facilities should be described ie: Quay space: Water depth; Safe berths/shelter; Storage areas; Transit sheds; Quayside equipment (cranes/capacities); Specialist services/contractors; Bunker availability; Ship Repair/Dry-dock facilities; Tidal/non-tidal; Safe anchorage; Port charges/ships dues/pilotage

Potential and recent growth/development should be described: Availability of dockside labour; Hinterland – support industries; Congestion/turn-around times; Ease by which new companies can acquire premises/establish presence; Local conditions/transport infrastructure/housing costs; Political situation/risks; Security threats (cargo theft/piracy/kidnapping); Cabotage; Investor confidence/ease of raising capital.

#### **Question 5.**

Students should demonstrate awareness of the general increase in specification for PSV and AHTS and the development of these vessels in to a range of MPSV/OCVs.

Key to gaining marks is including specific detail demonstrating knowledge of what current 'high spec' is rather than broad statements relating to increased/improved performance.

Categories should include: General Specification; PSV & AHTS Specification; MPSV/OCV Specification and also some commentary on the key drivers of enhanced specification.

#### **Question 6.**

Students were expected to describe the requirement for an independent surveyor to carry out a fuel survey at time of delivery and redelivery to determine the quantity of fuel remaining onboard (ROB) Additional survey items should include: Tank surveys – liquid mud, brine, dry bulk and an explanation that survey will establish condition of tanks – empty of all residues and cleaned to an industry-accepted standard.

A good answer will include explanation that a survey certificate will be issued and describe other aspects such as:

Vessel Assurance - determining vessel is fit for purpose and all equipment is fully functional

Modification work for specific workscope

Welding on additional seafastenings

Charter responsible for cost of reinstating vessel to on-hire condition.

On-hire/Off-hire times

An understanding that costs of survey generally split on 50:50 basis.

Minor damage caused during charter (serious damage would require separate survey).

#### **Question 7.**

The examiner is looking for a general awareness of the current state of the industry and an understanding of the range of installations: Offshore wind (fixed and floating); Tidal systems; Wave systems.

The student should explain how offshore wind dominates and comprises mainly fixed installation up to about 40m water depth.

That floating installations are now appearing extending to deeper waters further offshore.  
Huge increase in turbine output: 2MW to 8MW machines installed.  
Designs for 12MW under construction – 15MW being developed.  
Support vessels should be described.  
Survey vessels/guard vessels undertaking similar roles to O&G.  
Construction vessels/heavy lift – similar to O&G.  
Some specialist OCVs due to a lot of construction in shallow waters.  
Anchoring/mooring systems usually deployed by conventional AHTS.

Tidal and wave systems generally constructed onshore and towed to location and anchored.  
Unmanned installations when operational.  
No fuel or provisions and little maintenance requirement so much less attendance required in comparison to O&G.  
Maintenance crews generally transported by Crew Transfer Vessels (CTV) – small workboats (often catamaran design) making fast transit from shore to location.  
Boat Landing Stations (BLS) are specifically designed to interact with shaped fendering arrangements on CTV bows. (System sometimes referred to as ‘surfers’)  
Industry generally accepted as working at a much lower operational cost level than O&G.  
NW Europe and the China/Far East areas most actively involved in OREIs

#### **Question 8.**

A recap should include the following with realistic values references included:

- a) Date
- b) Vessel Name
- c) Vessel Type
- d) Owner
- e) Charterer
- f) Area of Operation
- g) Workrole
- h) Port of Delivery
- i) Port of Redelivery
- j) Commencement
- k) Firm Period
- l) Option Period(s)
- m) Notice to extend
- n) Mob and Demob Fees
- o) Firm Day rate
- p) Option Day rate
- q) Taxation and Payment
- r) Charter Party
- s) Subjects
- t) Commission