



EXAMINER'S REPORT NOVEMBER 2019

OFFSHORE SUPPORT INDUSTRY

Q1. Explain FOUR of the following terms/acronyms and their use.

- i. Joystick**
- ii. Marine Riser**
- iii. Towmaster**
- iv. ECA**
- v. Saturation Diving**
- vi. BOP**

Brief descriptions were expected:

- i. Joystick
Single stick manoeuvring equipment interfacing a computer with propulsion units – rudders, main engines and thrusters etc.
- ii. Marine Riser
Tube/pipe connecting subsea wellhead and the drilling rig, used by semi-submersibles and drillships to mitigate motion induced by the sea.
- iii. Towmaster
Marine towing expert usually employed to take charge of rig moves, usually appointed by the client (oil company) as their representative and responsible for the safety of the rig move.
- iv. ECA
Emission Control Area (or Sulphur Emission Control Areas SECA), establishes limits for airborne pollutants (SO_x, NO_x, ODA_s, VOC_s)
- v. Saturation Diving
Diving operations where divers remain at seabed/working pressure for the duration of the period onboard, reference to decompression chambers, dive control rooms and comparisons with air diving/ROV ops etc.
- vi. BOP
Blow Out Preventer, a device for isolating the well in case of emergency (ie. HP gas kick)

Q2. Explain the meaning and relevance of ALL the following on a vessels specification sheet;

DNV ✕ 1A1, Supply Vessel, SF, TUG, EO, DYNPOS-AUTR, Comf-V(3), Clean Design, NAUT OSV (A), DK(+), HELDK, OILREC, ICE (C)

Students were expected to know that this was a vessel's Classification Definition and lists Class Notations and that Classification Societies produce classification rules regarding the design, construction and survey of ships.

They were expected to understand that Class Notations indicate the specific rule requirements that have been met and that they will generally cover:

- (i) Construction
- (ii) Type and service
- (iii) Navigation and operational areas
- (iv) Equipment and systems

Detailed understanding of the notations was not expected, but rather to be aware of the general area/topic that each covered.

Q3. Answer BOTH parts of the question.

a) Describe using diagrams to support your answer, the general arrangement and operational concept of a jack-up drilling rig.

b) Discuss and compare the operational parameters of these units with other MODUs.

Students were expected to produce a drawing of a Jack-up drilling rig and the sketch should provide sufficient detail to demonstrate understanding of the operating concept.

ie. sketches showing floating and jacked-up condition.

Description should include details relating to: Wet/Dry tows; general construction; drilling derrick & helipad locations; operational terms – Pre-load/ballasting/air gap, punch through etc.

Current details relating to fleet size, operational water depths, comparison with semi-sub and drill ships should be included.

Marks were awarded for correct labelling and description of the function of the equipment.

Q4. Explain the primary differences between DP Classes 1, 2 and 3 and give examples of some of the types of vessels within each DP Class.

Students were expected to know the broad distinctions between the DP classes and describe the concepts in some details:

Class 1: No redundancy.

Loss of position may occur in the event of a single fault.

Class 2: Redundancy such that no single fault in an active system will cause the system to fail. Used extensively by modern OSVs, PSVs AHTS, Survey vessels, ROV Support vessels and some DSVs.

Class 3: As Class2 but in addition has to withstand fire or flood in any one compartment without the system failing.

Used by High specification DSV's and construction vessels, drilling rigs/drillships and floatels.

Q5. A range of cargoes are transported by supply vessels to offshore installations. Describe FIVE of these cargoes and provide a description of their use, methods used for their safe carriage and methods used for transfer to and from the installation.

Students should know the main cargoes carried and be able to provide a description in some detail regarding their use and how they are carried safely:

Cargoes should include: Fuel, water, drilling fluids, stores, food, drill pipe, casing, technical equipment, dry bulk (cement, barytes, bentonite etc.)

Deck cargo generally carried in containers, half heights and skips tubulars carried on deck – drill pipe, casing, tubing.

Discussion should include:

Hazardous Cargo carried in containers on deck at specifically designated areas, IMDG code governs

Bulk cargoes carried in dedicated tanks below deck.

Tank cleaning

Special products (Methanol/MEG)/Toluene etc.

Project cargo

Q6. Discuss the advantages and disadvantages for an offshore oil company in operating their own chartered supply vessel fleet in comparison to contracting their cargo requirements to a marine logistics company.

In addition to generally understanding the options involved, the examiners were looking for students to exhibit knowledge of:

core business specialisation; evolution of the industry; local expertise; risk management; brand association; market trends; extent of base operations etc.

Discussion should focus on:

Need to operate a marine dept. for own fleet.

Own fleet more beneficial if requirements are harder to predict/plan etc.

Economies of scale

Priorities relative to other clients

Size of company/number of installations supported/intervention – Field Development – IRM - Platform supply

Current market conditions – term and spot

New build costs/delivery times.

Support Base location

Q7. It has been suggested that the offshore renewable energy industry could create a rising demand for an existing OSV fleet supporting oil and gas installations. Discuss this suggestion and compile conclusions for a report to your existing OSV operating clients.

Students were expected to produce a report format with clear conclusions.

They should be aware of the range of installations:

Offshore wind (fixed and floating)

Tidal systems Wave systems

They should demonstrate awareness that offshore wind dominates with mainly fixed installations but floating installations now appearing extending to deeper waters further offshore.

General understanding of:

Huge increase in turbine output in recent years.

Foundation types and their means of construction and installation

Support vessel requirements.

Main areas of development - NW Europe and the China/Far East.

Q8. Provide an explanation of FOUR standard Charter/Contract forms regularly used in offshore support.

Students should be able to describe the basic format, and key issues contained in regularly used CP/contract forms.

Range of forms could include:

Bimco Supplytime 89/2005:

Extensively used for time charter.

Barecon 2001:

Used for bareboat charter.

Norwegian salesform 2012:

Extensively used in sale and purchase in offshore around the world.

Towcon/Towhire 2008:

Towcon used for lumpsum towage charters.

Towhire used for towage time charters.

Barge hire 2008:

Used for the charter of barges.

Shipman 2009:

Used for the contracting of shipmanagement and crewing for vessels.