EXAMINER'S REPORT
MAY 2019

OFFSHORE SUPPORT INDUSTRY

Question 1.

Draw a clearly labelled diagram of a modern AHTS identifying the main equipment/ features on the working deck.
Provide a brief description of all equipment/features identified.

Students were expected to produce a drawing of an AHTS with a focus on the aft deck. Equipment specified could include: Stern Roller; Towing; Chain Stoppers; Gob-eye; Crash Barriers; Stag Horns; Steel Deck area; Wood sheathed deck area; Cargo manifolds; Tugger winches; Stern quarter capstans; Towing Drum; Anchor Handling/Workwire Drums; Pennant Reels; Gypsies; Rail Cranes; Spooling Gear; Guide Posts.
Marks were awarded for correct labelling and description of the function of the equipment.

Question 2.

Discuss the role and functions of TWO of the following organisations:

a) IMCA
b) OCIMF
c) OPITO

Students were expected to provide a general description of the role and functions of the organisations:
IMCA - International Marine Contractors Association:
Representing offshore, marine and underwater engineering companies (900+ members)
Founded 1995 through merger of Association of Diving Contractors AODC & Dynamically Positioned Vessel Owners Association (DPVOA).
Regions: Asia Pacific; Central & North America; Europe & Africa; Middle East & India; South America.
Providing good practice guidance on technical/commercial topics.
Observer status at the IMO
Provision of guidance to facilitate 'self-regulation'
Competence & Training
Safety Environment & Legislation
Publish documents, arrange seminars, encourage dialogue.
Sharing experience, ideas and aspirations
Awareness of CMID
Four divisions: Marine; Offshore Survey; Remote Systems/ROV; Diving

Awareness that IMCA is contractors association rather than oil companies association.

OCIMF – Oil Companies International Marine Forum

Voluntary association of oil companies. (Membership 98)
Originally primarily focused on shipment and terminal operations.
Formed in 1970 in response to growing concerns re marine pollution.
Consultative status at IMO.
Role now includes offshore support vessels.
Membership includes all oil majors and majority of National Oil Companies.
Focus on the safe construction and operation of oil tankers, barges, offshore support vessels support bases and terminals.

Offshore Marine:

Aims – Work to improve safety and environmental issues in offshore industries
Develop and publish recommended standards/technical benchmarks

Membership: Senior reps with expertise offshore marine activities (Drilling; FPSO; Offshore Loading Terminals etc)

Sub-Groups:

OVID Focus group – concentrating on OVID and accreditation of inspectors
Floating System Group – Principally FPSO design, construction, installation
Offshore Maritime Operations Group – Offshore vessel operational safety

Awareness of OVID
Recognition that OCIMF is oil companies association.

OPITO – Offshore Petroleum Industry Training Organisation

Focus is to deliver initiatives and activities which ensure a competent and safe workforce for the offshore industry.
Management, development and assurance of the offshore industry training standards.

Deliver a broad range of educational and training initiatives and programmes covering:

Minimum Industry Safety Training (MIST)
Basic Offshore Safety Induction & Emergency Training (BOSIET)
Helicopter Underwater Escape Training (HUET)
First Aid
Gas Testing/H2S Training
Offshore Emergency Response
Offshore Helideck Crew
FRC/Daughter Craft Crew
Major Emergency Management
ERRV (Emergency Rescue & Response Vessel) Training
Dangerous Goods at Sea
LOLER/Crane Operators/Crane Operations/Deck Operations

Industry owned not-for-profit organisation
Longer vocational training coursed - including:

Modern Apprenticeships
Open Learning coursE

Question 3.

Describe a typical cable or flexible pipelaying procedure and provide an overview of the marine support required for the operation.

Students were expected to describe in broad detail the sequence of procedures involved in cable/pipelaying operations: Surveying – PLGR/Boulder Clearance - Pipelay – Trenching - testing/commissioning and the range of vessel required to support operations.

Show awareness this is a flexible cable/pipelaying operation as distinct from a rigid pipeline operation.

Generally undertaken by OCVs equipped by with a Vertical Lay System (VLS) or a stern ramp system. Pipe/cable loaded on large reels or carousels on the pipelaying vessel.

Reference to 'Spool bases' for loading pipe/cable from shore.

No requirement for continual pipe replenishment by PSV.
Survey vessels for ROV development.
Testing and commissioning.
Deployment of ancillary equipment – spools, manifolds, etc.

Question 4.

Describe using diagrams where appropriate, the operational concept of an FPSO. Your description should focus on the mooring and production riser arrangements.

Students were expected to demonstrate their understanding of the FPSO concept.

Sketches were expected to include a plan/aerial type view combined with a cross section type view showing the orientation of subsea equipment/pipelines and shuttle tanker connections.

The description should include: Weathervaning; Anchor splay; Anchor cable (chain/wire) and flexible production risers through turret ; mid water arches; subsea manifolds/wellheads/satellite wells/interconnecting seabed pipelines.
Key functions: Production, Processing, Storage , Offloading (Shuttle tankers/FSO/CALM Buoy) should be described.

Question 5.

Chose TWO of the following special activities and then draft rider clauses for their inclusion in an OSV Charter Party:

a) **Helicopter Operations**
b) **Passengers**
c) **ROV Operations**
d) **Sub-sea Crane Operations**

Students were expected to include a number of the key considerations which would go into drafting rider clauses for the listed special activities:
Helicopter Operations: Helideck Loading; Re-fuelling; Helideck certification; Cost of certification; Non availability of helideck; Weather limits; HDA's/HLO's; Helicopter Communications.

Passengers: Maximum number; Cabin number and type; Catering standard; Laundry facilities; Pre planning passenger numbers; Number of hotel and catering staf/Owners or charter to provide; Cost schedule and accounting; Masters authority/interface/bridging documents.
ROV Operations: Number and type of ROV's; Modifications/reinstatement; Costs of installing, carrying and operating ROV's; Division of Responsibilities; Power Supply requirements and arrangements.

Sub-sea Crane Operations: Specification of Crane/Crane curves; Wire supply/testing/renewal/ damage; Crane Drivers, number and supply; Division of responsibilities; Breakdown hire arrangements.

Saturation Diving Operations: Specification of Dive System; number of divers/support staff; Division of Responsibilities; Subsea operations insurance; Power supply requirements; Breakdown hire arrangements.

Question 6.

Choose an offshore oil producing region described as 'mature', and provide an explanation of the use of this term including a description of the type of oil production developments that are found there.

Students were expected to recognise the reference is to an area where offshore production has been present for many years.
Region will have experienced development, production and decommissioning of some infrastructure will either be underway or being assessed.
Production will have peaked and remaining reserves still to be exploited will generally be smaller and more technically challenging than past developments.
Show understanding of the differential between 'brown-field' and 'incremental' developments to existing infrastructure and new 'green-field' developments.

Show awareness of 'satellite', 'tieback' developments – small fields where volume of reserves does not justify the cost of constructing a separate installation.
Use of FPSOs which can operate for relatively short periods on one field and then be redeployed to another – Hire/charter of FPSO vessels.
Increase in offshore construction vessels (OCVs) due to proliferation of subsea construction.
Recognise link between reduced production and shrinking potential of investment return but smaller capital investment generally required for smaller incremental developments.
Effect of looming decommissioning liabilities/costs and problems with transfer of assets etc.
Initiatives for maximising recovery of remaining reserves:
Understand how falling oil prices have exacerbated problems for mature areas.
Understand historical context – early years huge developments (expensive but high producing) little obstacle to expensive technology and expenditure on logistics driving development.
Later years – more focus on efficiency.
Recognise the most important issue for a mature province with ageing assets is infrastructure cost.
Tendency of large oil majors to disinvest as large scale production declines and smaller Independents feature more in incremental developments – more fragmented ownership of fields/assets.

Question 7.

'Rising unconventional oil production combined with competition for market share will increase the risk for frontier offshore developments.' Discuss this statement and consider how your conclusions will impact on the offshore support market.

Examiners were looking for a good general overview of the oil industry globally, both currently and over recent years.
Discussion should include:
Basic concept that a high and stable oil price which will give companies the security to plan extensive exploration and production campaigns.

Variation of capex/opex costs across a range of offshore sectors.

New offshore development is at upper end of cost scale.

Macro economic effects - global economic growth; security threats; OPEC policy etc.
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Correlation between oil price stability and investment decisions/importance of investor confidence.

Also awareness of:
Development of the shale oil sector.
Increase in US production and policy to export.
Widely differing oil field 'break-even' costs.
Shale oil being relatively low capital cost but high production cost.
Capability for shale oil production to be rapidly ramped-up and down.
How shale oil production is sensitive to oil price.
Awareness of number of MODUs/OSVs in lay-up.

Question 8.

A competent and competitive offshore broker will offer a range of services to their clients. Explain the range of services and discuss how a broker can add value and remain competitive in the modern offshore market.

The explanation was expected to cover the full range of broker services/activities and include:
Core services: Chartering/Sale & Purchase
Understanding fundamental broker/client relationship.
Presenting business to potential clients
Negotiating terms/Checking and finalising contract details.
Post-fixture work
Adding value:

- Good working relationship and fully understanding your clients requirements
- Demonstrating integrity, earning trust
- Discretion/confidentiality – balanced by need to circulate information
- Integrity/trust in one broker scenarios -Broker servant to his client and the negotiation
- 24/7 availability – Duty Broker
- Market Specialisation
- Detailed technical knowledge on specific vessels/operators/ports/facilities
- Market Intelligence/Perception
- Market Research
- Maintaining a quality
- Web/online services

Cultural awareness
Arbitration/Mediation
General Knowledge and perception of world and local events