Snap Shot of the Drilling Market and Safety Cases for MODUs

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Toxic combination of declining demand and additional supply drops utilization close to record low and day rates towards cash break even

Demand, supply and utilization

**Jackups**

No. units

**Floaters**

No. units

Day rates, real* 2016

USDk/day

*Assumes an annual inflation of 2% for all countries

Source: IHS Petrodata, Maersk Drilling
Record high deliveries leave plenty of room for further attrition, endangering aged and stacked rigs if operators cannot deflate stacking costs.

Jackups: 45% of the fleet is over 20 years old
Including newbuilds

Floaters: 30% of the fleet is over 20 years old
Including newbuilds

Source: IHS Petrodata
Supply: ~200 newbuilds expected to enter the market during 2016-20, with the majority lacking contracts (especially in jack-ups)

Jack-up rig order book, by delivery year*

Total order book = 137%
% with contracts = 10%

Floater order book, by delivery year*

Total order book = 70%
% with contracts = 47%

* Assuming deliveries would take place as scheduled
Source: IHS Petrodata
Despite substantial attritions since 2014, a correction in today`s highly challenged market requires more retirements to come.

Previous global scrapping cycles
1980-2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of rigs scrapped</th>
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<tbody>
<tr>
<td>2014-2016 YTD</td>
<td>72 retirements</td>
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Source: IHS Petrodata
IADC’s HSE Case Guidelines for MODUs

1993 – IADC (NSC) issue the *Mobile Unit Safety Case Template*

• Specifically directed toward the *UK Offshore Installations (Safety Case) Regulations, 1992*

• The development process provided UK-based drilling contractors a basis for mutual understanding of new regulatory requirements and approach to Safety Case demonstration

*Issues with this edition*

• Some contractors used “template” to “fill in the blanks” for their submissions – insufficient “intellectual investment”

• Aimed at existing units – little thought to new construction

• Overly-emphasized quantitative risk analyses

• Difficulties in engaging workforce

• Lack of flexibility for companies in managing risk

• No engagement with regulators outside the UK

• Sought to recover development costs through sales price
IADC’s HSE Case Guidelines for MODUs

2002 – IADC (NSC) publish *North West European HSE Case Guidelines for MODU’s, Issue 1*

- Captured 10-years experience of operating with Safety Cases
- Specifically sought to establish a harmonized foundation and framework to enable mutual acceptance of HSE Cases by NW European regulators
  - Appendix 4 adds cross-references to national legislation
- Emphasized need for underlying safety management system – aligned to SOLAS Chapter IX and the IMO’s International Safety Management (ISM) Code requirements
- Specific acknowledgment obtained from NSOAF (2003)

*Issues with this edition*

- Some European national requirements not considered
- Weaknesses in use of ISM Code
IADC’s HSE Case Guidelines for MODUs

2004 – IADC (NSC) publish *North West European HSE Case Guidelines for MODU’s, Issue 2*

• Updated portions of base document based on input from European regulators and members
  – Updated Appendix 4 for revised national legislation
IADC’s HSE Case Guidelines for MODUs

2006 – IADC publish *HSE Case Guidelines for MODU’s, Issue 3.1*
- Issued as “Draft for Comment”
- Sought to “globalize” through
  - Consultation with regulators outside Europe (direct and through International Regulators Forum) to produce additional legislative cross-references
  - Consultation with international oil companies
  - Use of growing suite of international standards
- Emphasized need for robust and effective management system

After feedback, in October 2006, IADC publish *HSE Case Guidelines for MODU’s, Issue 3.2*
- Some internal resistance within IADC membership
- Others embrace concept particularly for new construction
- Recognized by IRF in 2007.
IADC’s HSE Case Guidelines for MODUs

Subsequent updates have addressed

• Macondo/DWH learnings
  – Bridging arrangements with clients and verification of HSE critical items in bridging arrangements
  – Emphasis on assessing effects of fire and blast
  – Emergency response arrangements
  – Client & 3rd party participation in drills and exercises

• Feedback to design of new units

• Incorporated changes resulting from review of new legislation and standards
  – EU Directive 2013/30
  – US-BSEE SEMS I and II rules

• Harmonization with growing suite of ISO risk assessment and management systems standards
IADC’s HSE Case Guidelines for MODUs

Ongoing challenges

• Ongoing resources (staff & member) to maintain guidance
• Expanded guidance on “bridging arrangements” to operator’s SMS & Well Plan
• Assessing the relevance of
  — new and/or amended standards for risk assessment
  — the growing number if ISO management systems standards to the HSE Case
  — the relevance of new or amended technical standards (API, ISO or both) to the HSE Case

Nonetheless IADC is

• beginning work on an updated edition of its HSE Case Guidelines for MODUs
• plans to update the HSE Case Guidelines for Land Drilling Units in parallel
Thoughts on “Standardization” of HSE Cases

- There is little, if any, incentive to pursue internationally standardized acceptance standards for HSE Cases/RMH for fixed installations/wells since the oil company “operator” must satisfy only itself and a single regulator.
- The movement of mobile units among clients and across jurisdictional boundaries makes it highly desirable that a single HSE Case/RMH can be developed to satisfy multiple clients/regulated – this has been a major goal in the development of IADC’s HSE Case Guidelines and it is a goal IADC will continue to pursue.
- Jurisdictions differ in the responsibilities and duties of oil company “operators,” their contractors, and owners of mobile installations -- this is difficult to reflect in “international” guidance, and in some jurisdictions is still not “settled” law.
Questions?