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State of the Art in Float-Overs

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Abstract

The float-over deck installation is in use as an effective installation method since the eighties. The method has developed and the applicability has widened to heavier integrated decks and harsher environments such as West-Africa and West-Australia.

The paper describes the state of the art in float-over deck installations by an overview of a number of typical float-over operations. Each of these float-overs has a typicality related to:

- Integrated deck weight;
- Environment;
- Installation concept.

The present state of the art has been reviewed in a SWOT analysis from a contractor's and operator's perspective. Strength, weaknesses, oppurtunities and threats have been summarized to identify a way forward for future developments.

Possibilities for the way forward to achieve the following objectives have been outlined in the paper:

- Improved workability;
- Reduced jacket slot requirements;
- Standardization to reduce early commitment requirements.

Introduction

Installing an integrated deck onto a jacket structure is an operation that has been executed by using semi submersible crane vessels and derrick barges already for many years.

Offshore integration costs can be reduced since the integrated deck weight can be over above the capacity of (locally) available crane capacity.

The float-over deck installation is proving to be a competitive alternative for such an offshore installation operation.

In recent years the concept of float-over deck installation has matured. With the help of a lengthening track record and benefits over lift operations, the float-over deck installation is taken into account as a reliable means of installing the assets.

Since the float-over deck installation has been used only for a limited number of projects compared to the lifting operations performed by semi submersible crane vessel, improvements to the concept are still to be expected.

Float-over Deck Installation: Sequence

For better understanding of the advantages and dis-advantages of the float-over deck installation over semi submersible crane vessels, a brief introduction to the float-over concept is presented.

Load-Out

The load-out is the starting point of a float-over deck installation. The integrated deck will be build on-shore and needs to be loaded out onto the installation vessel.

Load-outs can be performed either by self propelled modular trailers or by the use of skid tracks.
Figure 1 presents a skidded load-out of a 15.000 tons module onto self propelled installation vessel Blue Marlin.

Figure 1: Skidded load-out of 15.000 tons module

Requirements for the load-out stage are governed by the following parameters: