

Havila Harmony – Mezzanine Deck and Reel Frame Design & Installation

Client: Petroleum Development Consultants Pty Ltd (PDC)

Overview

AEC was engaged by PDC to perform detailed design and site engineering for a mezzanine deck, deck grillage and other structures for the MV Havila Harmony installation support vessel. The vessel was commissioned for installation of subsea infrastructure for the Puffin Oil Field in the Timor Sea.

The Challenge

An extremely fast track schedule was set by the client.

Two mobilisations were required. The first was to deploy subsea structures and flexible flowlines. The second was to support a saturation diving spread for hook up activities.

The Havila Harmony was originally designed as a pipe transportation vessel, so its deck was designed for evenly distributed loading rather than the high local point loads associated with this project. The mezzanine deck had to support 190t and 157t for the 2 mobilisations. The deck grillage had to support 532t including 2 flowline reels (200t each).

The Solution

Deep support girders and careful selection of contact points with the deck were required to avoid the need for strengthening of the existing structure below deck.

AEC worked overtime including nights and weekends to issue key deliverables in an accelerated timeline to meet the project's milestones including:

Milestone	Weeks After Contract Award
Concept Design	0.5
Design Sketches	1
Material take off to order steel	1
Drawing issued at Rev A and cutting of primary steel commenced	1.5
Drawings and design report issued at Rev 0 for DNV and LR review and approval	4
Fabricated steelwork on deck	5.5
Installation of equipment and 1 st sail away	9

AEC provided full implementation support including attendance during fabrication, installation, testing and commissioning in Singapore.

Outcome

The mobilisations were completed successfully and sailed with DNV and LR approval within the extremely fast track schedule.

