GLO Marine

CONVERSIONS MOBILISATIONS

PSV Conversion to Cable Laying Vessel

CLIENT CONFIDENTIAL

YEAR 2025

PLATFORM TYPE

Cable Laying Vessel

CLASS

DNV-GL

SOW

Engineering, Class approval, On-site supervision

2
NEW DECKS ADDED

32
CREW ACCOMMODATION CAPACITY

1
COMPLETE CABLE SPREAD INSTALLATION

CLIENT CONTEXT

Transforming a PSV into a specialized cable laying vessel

GLO Marine successfully delivered the retrofit of a Platform Supply Vessel into a specialized cable laying and maintenance vessel.

Originally operating as a PSV, the vessel underwent a full conversion to enable subsea cable installation, maintenance, and testing activities. The scope included new accommodation for 28 crew members, integration of a complete cable lay spread, and the creation of dedicated cable storage spaces to support operational readiness.

To ensure regulatory alignment, the vessel's documentation and key drawings were updated to reflect the as-built condition and comply with applicable DNV rules.

THE CHALLENGE

Delivering a complex retrofit within existing vessel constraints

The key challenge was integrating multiple high-load cable handling systems and associated subsea tools into the existing PSV layout—while maintaining compliance across structure, safety, escape, and onboard systems.

The conversion required the installation and integration of:

- 50-ton A-frame
- 20-ton Cable Drum Engine (CDE)
- 18-ton Linear Cable Engine (LCE)
- MD3 cable plough system
- Remotely Operated Vehicle (ROV)
- Fiber optic cable testing equipment
- Sheaves for towing and testing operations

To create the required space and support paths for equipment and operations, two new decks were installed above the main deck, new compartments were added, and cable storage spaces were created both below the main deck (after demolition works) and on the main deck.

This required careful coordination across structural design, fire integrity, escape arrangements, and mechanical systems (including ventilation and tank venting), ensuring the converted vessel met class expectations without compromising operational capability.

IMPLEMENTATION STEP

Project phases

01. Feasibility & Concept

We evaluated the PSV's baseline arrangement and constraints, then defined the target cable laying/maintenance capability and the high-level conversion concept.

- Initial space claim and equipment layout (A-frame, CDE, LCE, plough, ROV, testing)
- Early weight/stability and structural impact screening
- High-level compliance gap check against DNV rules

02. Baseline Design

We translated the concept into a class-aligned baseline design and set the approval route with DNV.

- Updated general arrangement for the converted vessel
- Additional 28-person accommodation solution
- Cable storage concept (below main deck + main deck)
- Two new deck additions and a compartment plan (concept level)

03. Engineering & Production Phase

We produced the construction-ready engineering package and updated the vessel's plans to match class requirements and as-built intent.

- Structural design for two new decks, compartments, and foundations (50T A-Frame, 20T Cable Drum Engine, 18T Linear Cable Engine, MD3 cable plough system, and sheaves for towing/testing)
- Integration engineering for cable lay spread and associated systems (including sheaves and subsea tools)
- Updates to key drawings: GA, fire & safety, emergency escape, structural fire integrity, ventilation, tank vents/air pipes, freeboard, LSA, pilot ladder, door/window plans, manholes, and related class drawings

04. Class Approval & Final Documentation

We closed technical and class actions and delivered final documentation aligned with the completed vessel.

- Final verification of arrangements and system updates
- Class approval support and comment resolution (DNV)
- As-built drawing updates and handover package completion

05. Conversion Execution & Site Supervision

We supported yard implementation to ensure the retrofit was installed correctly and interfaces were managed across disciplines.

- On-site supervision and coordination during installation
- Verification of equipment integration and operational layout
- Alignment of safety-critical arrangements during execution

The outcomes

Final results

The vessel was successfully transformed from a Platform Supply Vessel into a dedicated cable-laying and maintenance unit, integrating a full cable-lay spread (50T A-frame, CDE, LCE, plough, ROV, and fiber optic testing capability) and accommodating 28 personnel.

Two new decks and additional compartments enabled the required operational space, while new cable storage areas were created both below the main deck and on the main deck.

All key drawings and safety-critical arrangements were updated to reflect the as-built condition and align with DNV requirements, supporting class approval and operational readiness.

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