

Hydraulic retrofit for aft starboard capstan on diving support / well intervention vessel

LOCATION Aberdeen harbour, UK

Retrofitting new hydraulic equipment to the system provided a cost-effective solution

BENEFITS

Redundant / obsolete equipment removed from the system

Cost-effective solution

Reduced down-time with work completed in-between port calls

More efficient than replacing the entire system



CHALLENGE

- The client came to us with a work scope for a hydraulic retrofit as we've completed a variety of hydraulic activity for them over the past 10 years
- The anchor winch / capstan systems use a common hydraulic power unit (HPU). With the anchor winch decommissioned, a large part of the hydraulic system was redundant. All redundant hydraulic components were to be removed
- Due to the age of the system (mid 1980s), a large part of the hydraulic system was obsolete
- Budget constraints due to market conditions.

SOLUTION

- During a scheduled vessel stop in Aberdeen Harbour, we mobilised a hydraulic supervisor to survey the system with a view to; confirming the as-built status of the hydraulic system and witness function testing of the capstans to fault-find the reported historical operational issues
- On completion of the survey, a hydraulic review of the system was carried out to determine which components required replacement due to obsolescence / performance issues (or both) and which components required removal due to being redundant (part of anchor winch system). The following scope of work was recommended to the client:
 - Replace obsolete A4V250 pump with modern equivalent A4VG250
 - Due to differences between the A4V250 and A4VG250 pump A&B port interface, a custom manifold was to be designed and manufactured to re-use the existing hot oil strip manifold (close-coupled to the pump)
 - Replace cartridge valves in the hot oil strip manifold
 - Due to differences between the A4V250 and A4VG250 pump, retrofit new external boost filter
 - Remove the hydraulic control / brake release manifolds and send to our Aberdeen workshops for strip down, inspection, clean-up, replacement of valves / blank-off redundant and testing
 - Replace obsolete 4TH8 hydraulic joystick with modern equivalent 4TH6
 - Replace obsolete 4WEH32...NZ5L DCV with modern equivalent 4WEH32...N9K4
 - Remove and blank-off redundant 4WEH32 DCV with NG32 blanking plate
 - Replace obsolete Viking MK63-16300 motor modern equivalent MK64-16300
- On agreeing the scope of work with the client, all parts were ordered and kept in stock ready for destruct / installation to commence during the next scheduled vessel stop in Aberdeen
- Revised hydraulic schematic and parts list completed
- Destruct, installation and commissioning procedures completed
- Working together with the vessel crew, the retrofit was completed in two phases in-between port calls:
 - Destruct / installation
 - Commissioning.

1.



2.



3.



SUMMARY

- Integrated solutions
 - Fault finding and repair
 - Hydraulic system management
- Capabilities / services
 - Multi-discipline engineering / design
 - Maintenance / servicing / refurbishment
 - Inspection / testing / rope access
 - Fluid power / hydraulics
 - Site surveys
 - Training / coaching
- Equipment rental
 - Rigging / lifting equipment
 - Mechanical handling equipment
 - Spare parts / components

1. Control and brake release manifold pre-retrofit.
2. Brake manifold post-retrofit.
3. Control manifold post-retrofit.

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