

OFFSHORE & LIGHTWEIGHT

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Recently performed and ongoing studies

- FLOT – Feasibility study for Lightweight applications Offshore, Topside
- OffshoreVäst – Development of a Swedish Offshore Industry



FLOT – Project assignments

“Investigate the possibilities in introducing lightweight designs by using composites in topside structures of Oil & Gas Offshore platforms”

“Focus on the toughest market from a rule and regulation aspect – The Norwegian shelf”



Supported by:



Weight saving potential on Oil & Gas Platforms

Direct weight saving

- Top structures
- Deck load capacity

Indirect weight saving

- Stability
- Displacement
- DP-Class
- Electrical Power Consumption



Existing lightweight applications in Oil & Gas

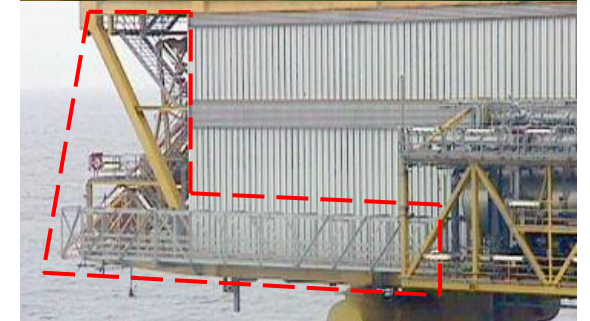
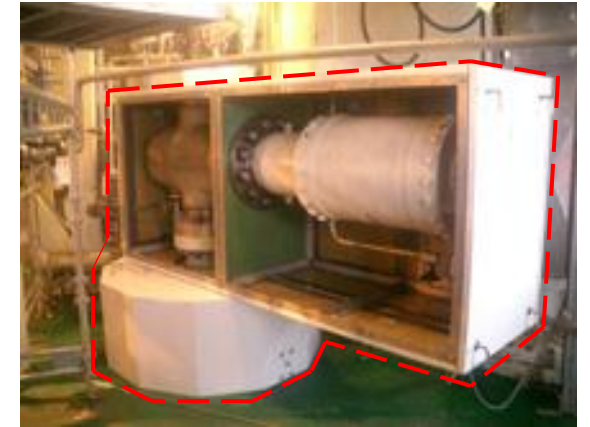
- Aluminium Heli-decks
- Aluminium Living quarters
- FRP-gratings



Established composite applications in Oil & Gas

- Piping
- Pressure Vessels
- Jet-fire protection and Blast enclosures
- Railings, stairways, ladders and gratings

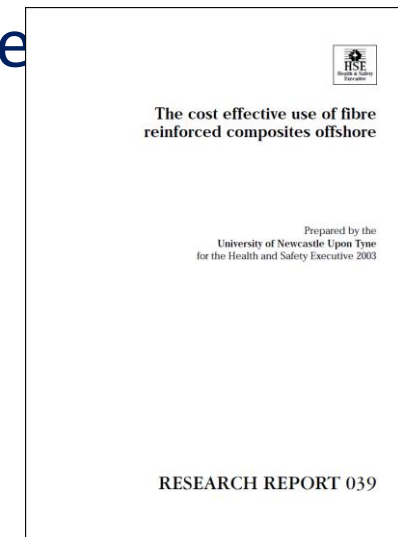
Composites are mainly used for protection and to reduce maintenance



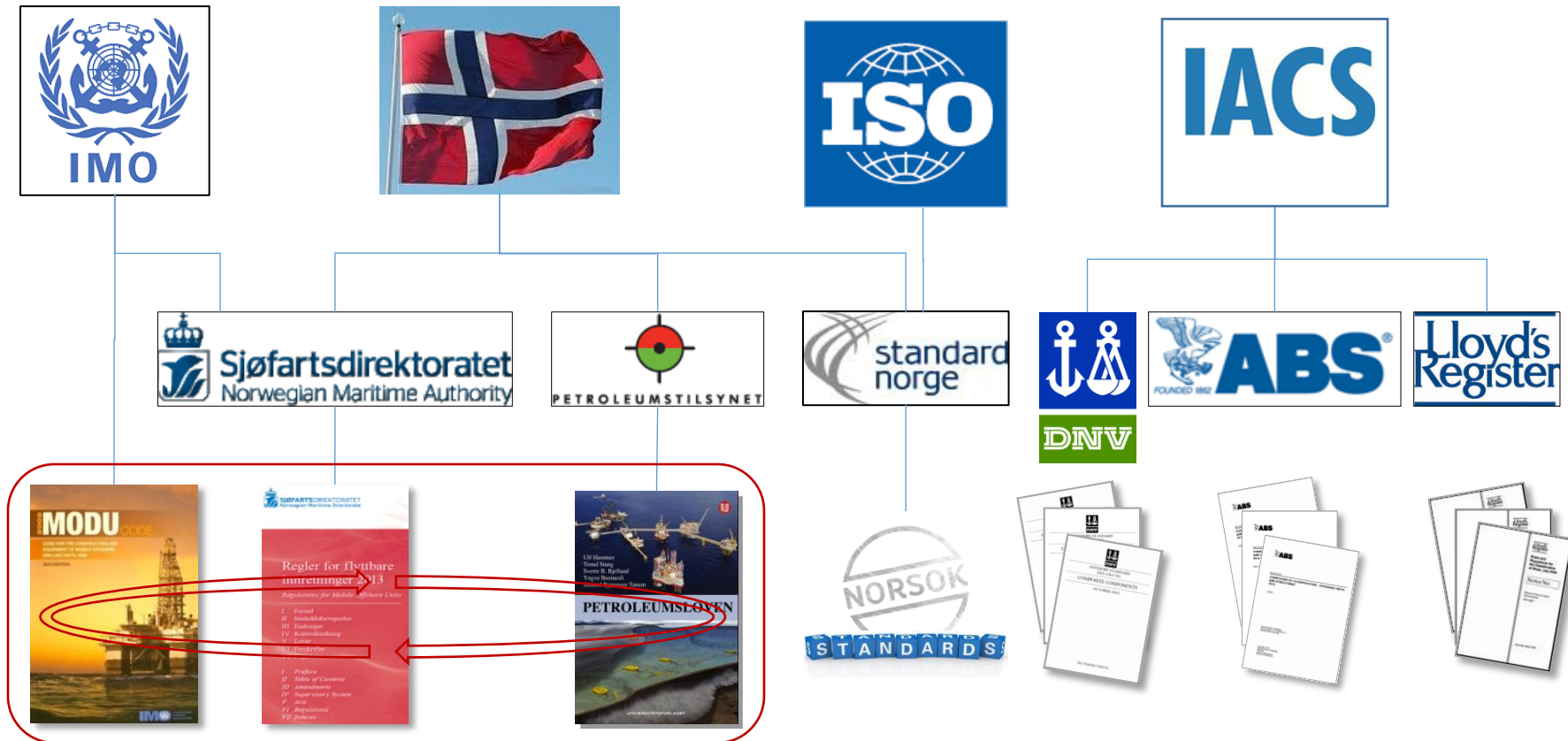
Barriers to the use of composites offshore

- Regulatory requirements, especially on combustibility
- Lack of relevant performance information
- Lack of efficient design procedures and working standards, combined with unfamiliarity on the majority of designers
- The fragmented structure of the composites industry, and
- Difficulty of scaling up fabrication processes to make very large composite structures

Statements done in the late 1980's.
Some development has been done for the first three issues.
There is still a great potential for development!



Rules and Regulations –The key to Success



Identified lightweight development projects

- Living Quarters (LQ)
- Heli-Deck
- Life boat platform
- Retractable Gangway
- Function Based Design
- Weight Management





- Involving 50 national partners and 9 strategic partners.
- Focus on developing of a Swedish offshore industry.

Five cooperating work packages

- Offshore Oil & Gas
- Renewable Offshore Energy
- Service & Maintenance
- Offshore Academy
- Business Development



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