

MARITIME ADVISORY

Managing risks for lay-up of OSVs and Rigs

2015.10

Lay-ups are cyclical, just like the industry



Managing risks of lay-up of OSVs and Rigs

1. Market and Lay-up scenarios
2. Class Requirements
3. Risks and Challenges
4. Possible costs savings
5. What have DNV GL been doing



GUIDELINES
No. 22

Lay-up of Vessels

MARCH 2012

*This chapter has been amended since the main revision (March 2012), most recently in April 2012.
See "Changes" on page 3.*

The electronic pdf version of this document found through <http://www.dnv.com> is the officially binding version

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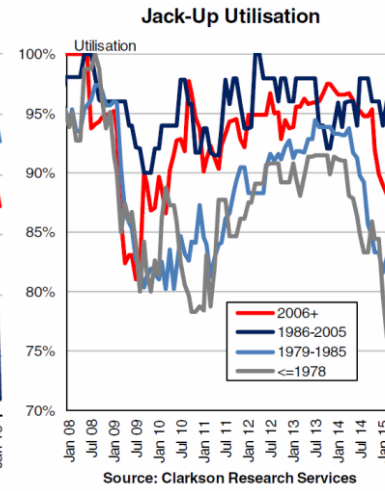
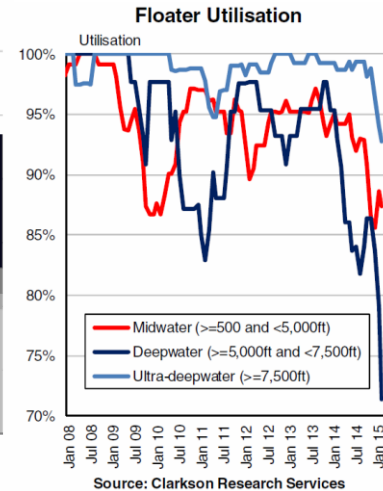
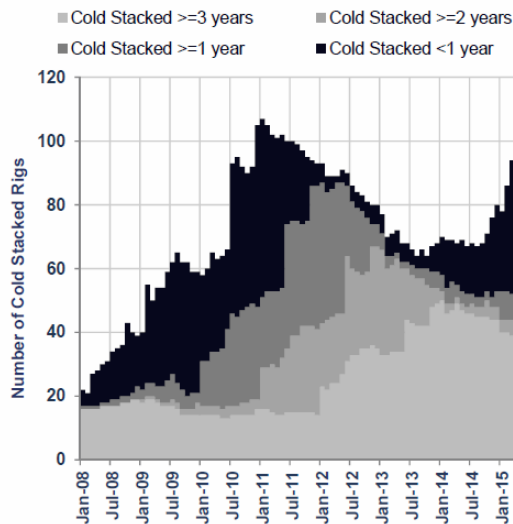
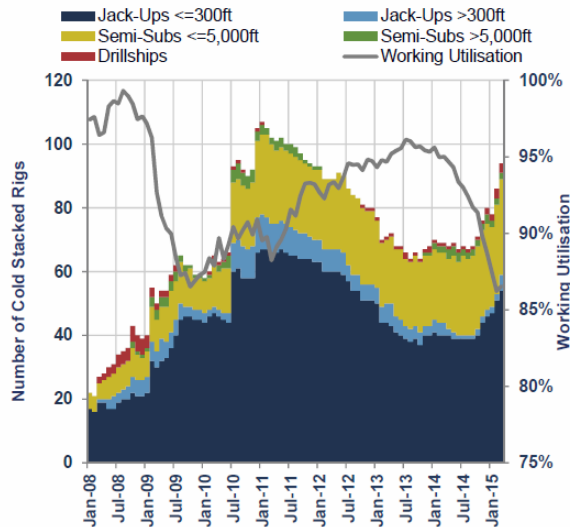


Lay-up and scrapping of offshore rigs

Rigs:

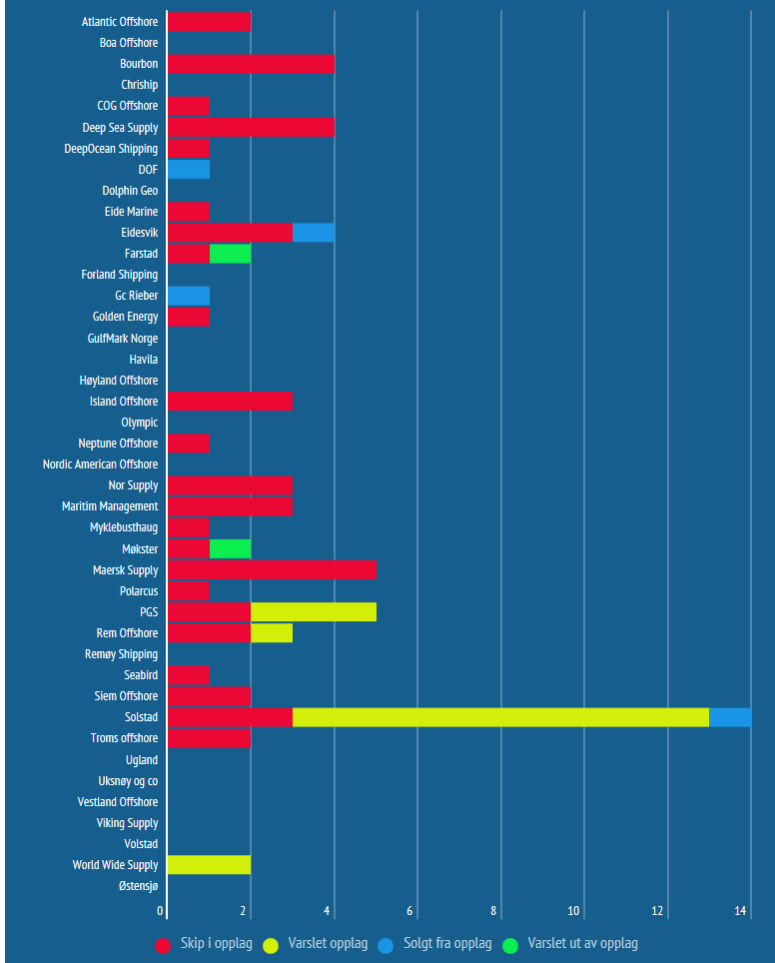
- As of Sept. 2015 60 rigs have been announced without job
- Some of the rigs that are cold stacked will most likely never go back into commercial operation, but rather directly to a scrap yard
- Approximately 30 rigs have been announced for scrapping

Cold Stacked Rigs



Offshore support vessels in laid-up status with Norwegian owners

OPPLAGSREGISTERET 15.09.15



Opplagsstatus 17.10.15

- PSV: 50
- AHTS: 15
- Beredskapsskip: 1
- Konstruksjonsskip: 1
- Seismikk: 12
- Andre: 1
- Flerbruksskip: 1
- Totalt: 80
- Reelt opplag og varslet: 70
- + 13 fartøy siden 15.09.15

<http://www.maritime.no/opplagsregisteret/>

Different types of lay-ups



Choice of lay-up scenario

Hot lay-up:

- Lay-up time usually < 12 months
- Machinery is kept in operation
- Allows the vessel to remain in best possible condition
- Expensive to maintain over a longer period of time
- High flexibility

Warm lay-up:

- Machinery is partially kept running and condition of the vessel controlled
- Moderate running costs over a longer period
- Medium flexibility

Cold lay-up:

- Lay-up time usually > 12 months
- Machinery is out of operation; only emergency generators are in operation or temporary deck generators are installed
- Cheapest option considering daily costs only
- Reactivation to be especially considered (cost/success)
- Low flexibility

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Lay-up of vessels

Class requirements

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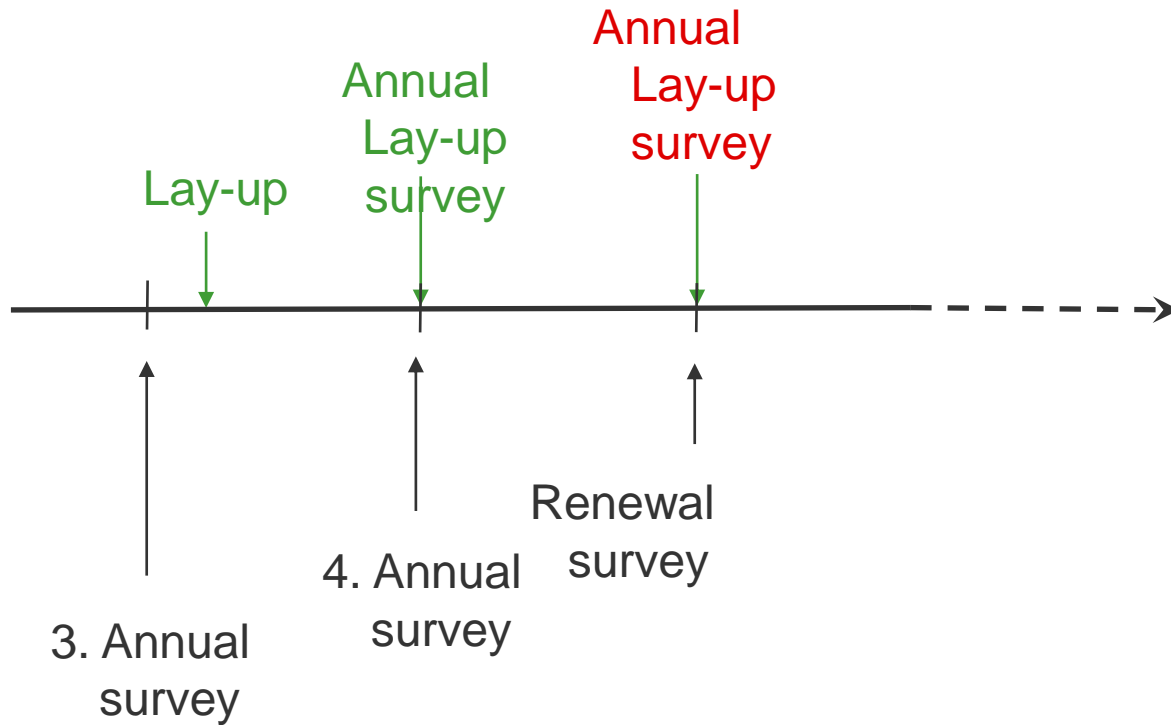
General

- The Owner should notify DNVGL when the vessel is laid up for a period of more than 3 months.
- Over due surveys shall be completed before status is changed to 'Laid-up'
- The scope of the Annual Class Surveys will be reduced to items relevant for the lay-up situation.
- The fees for Annual Class Survey will be reduced
- If laid up for more than 12 months a re-commissioning survey will be required
- Overdue surveys are to be carried out at re-commissioning
- ISM/ ISPS is recommended handled case by case depending on flag state and the vessel in question. Please contact your local station.



Survey schedule during lay-up

.5.2 During lay-up, ships shall be subjected to annual survey. The extent of the annual survey will be reduced compared to main class annual survey, but shall cover watertight integrity, bilge system, fire hazard and equipment in use.



The annual survey will be charged on hourly basis. Normal time spent is 4 – 8 hours.

Re-commissioning Survey Scope

- Lay-up less than 12 months
 - Only overdue surveys are to be carried out
 - Sighting survey may be required for ships which have not been preserved

- Lay-up more than 12 months
 - All overdue surveys
 - Sea trial
 - Some postponement are possible for
 - Bottom
 - Tail shaft and
 - Machinery
 - If no maintenance has been carried out, the scope of re-commissioning will be specially considered
 - Extended scope of re-commissioning e.g. in case of longer lay-ups with no preservation or maintenance

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Lay-up of vessels

Risks and challenges

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Risk and challenges

- Choosing a safe lay up site avoiding dragging, drifting, collision or grounding
- Collision by an other vessel
- Safe mooring
- Flooding
- Fire and cumulative damage
- Security
- Competence level of service suppliers
- Preservation
- Choice of maintenance strategy v.s. re-commissioning and mobilization time
- Own experienced personnel

Choosing a lay-up location

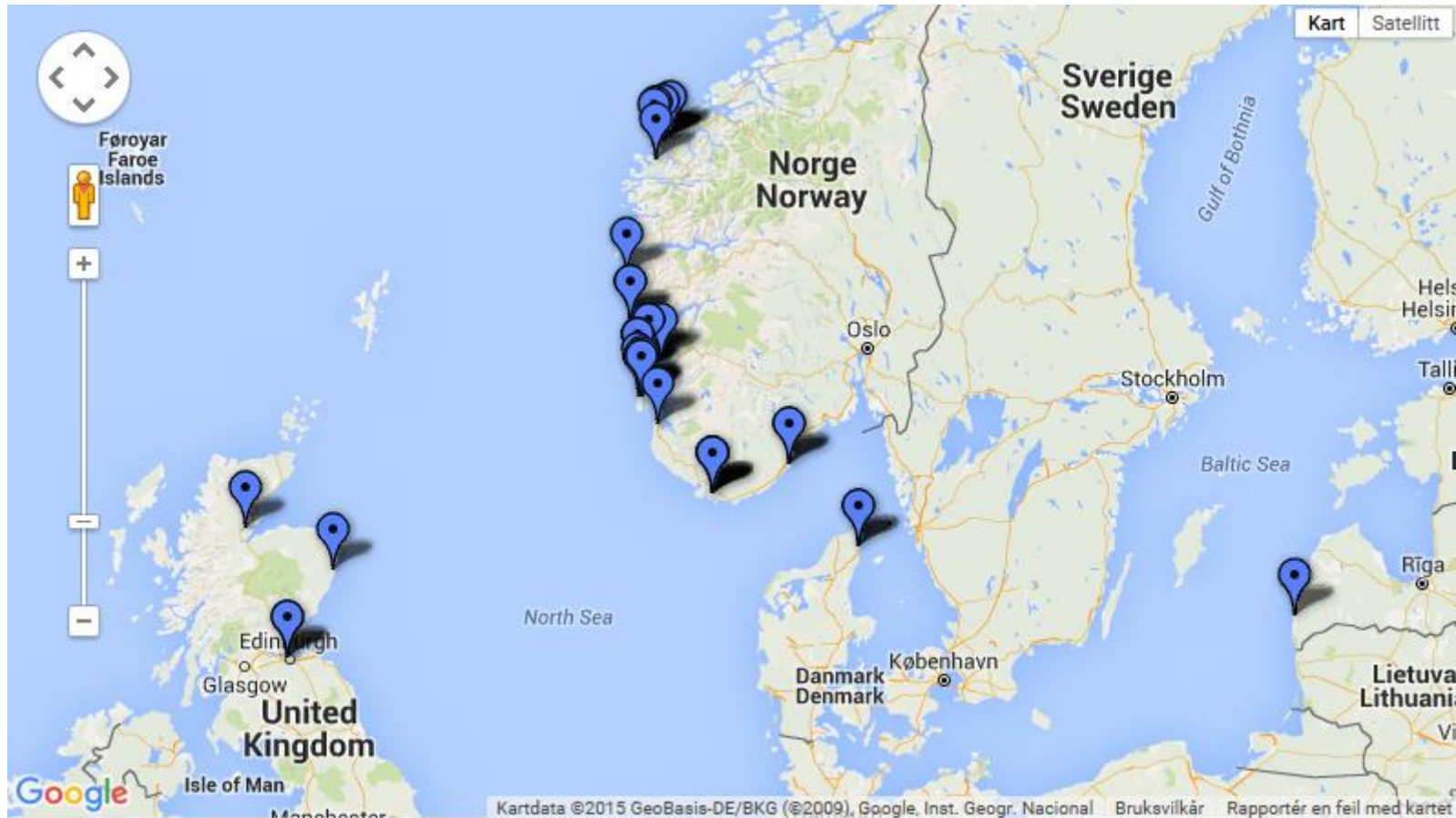
- Present position of the ship
 - Trading route
 - Charter after lay-up
 - Type and duration of lay-up
 - Local weather conditions
 - Temperature
 - Storms
 - Availability of the site
 - Service provided
 - Price
 - Security
-
- Professionalism of provider vs. experience in own company



Current lay-up positions of Norwegian OSVs



Suitable lay-up sites are getting scarce





Havnesjef Jane Arnesen i Lyngdal får opptil ti telefoner hver dag fra redere som vil legge skip og borerigger i opplag.

SHIPPING

Harald Berglihn og Bjørn Segrov
Kristiansand/Lyngdal/Oslo

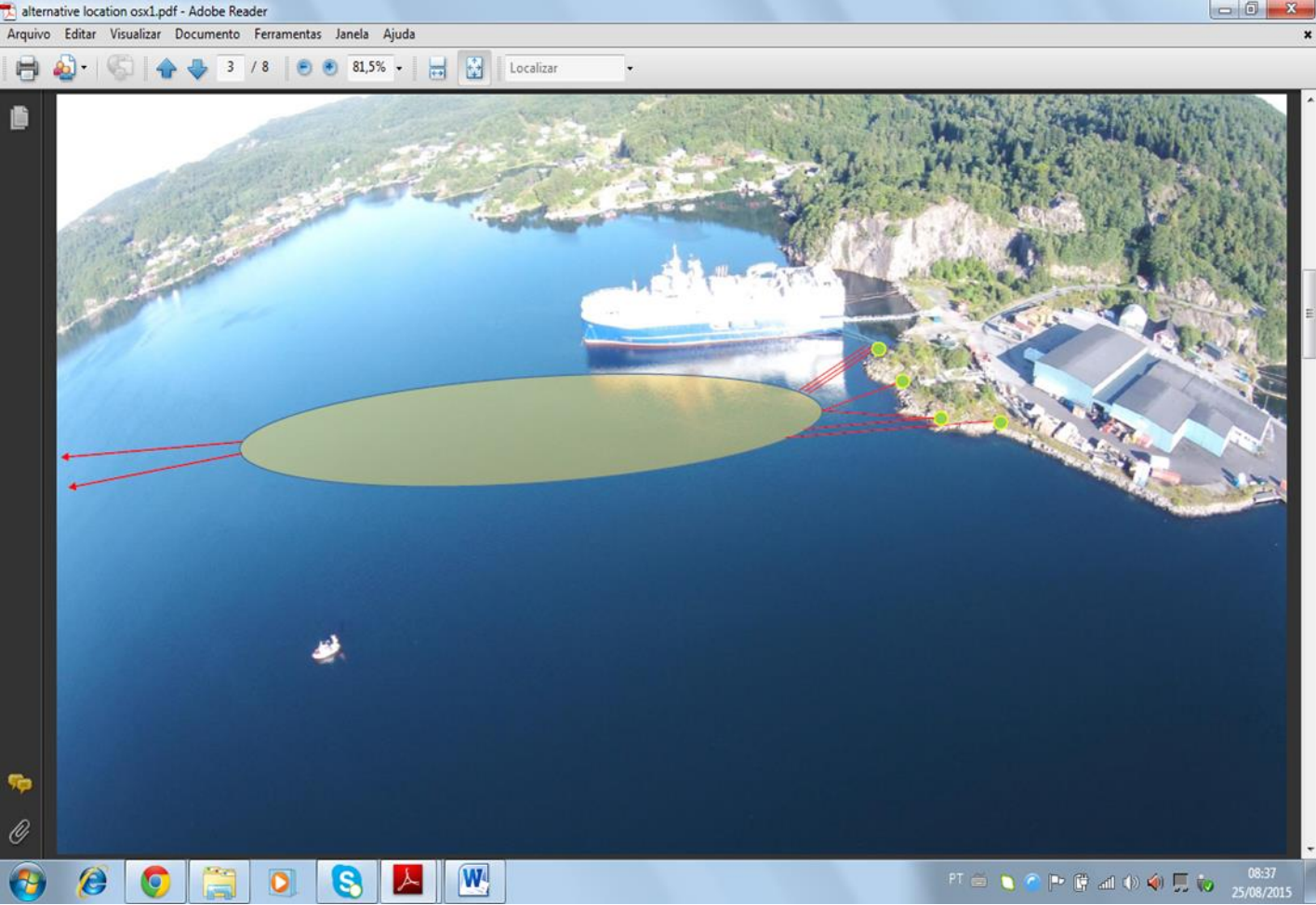
vis vært skip i opplag siden 1970-tallet.

Nå ligger det syv seismikkskip, blant annet fra Petroleum Geo-Services (PGS), og venter på bedre tider. To fartøyer tilhørende John Fredriksens børsnoterte offshore

Kutter kostnader

Ifølge skipsmeglerhuset W shore i Kristiansand var det ukeslutt 52 offshore service opplag. Mange av dem ligger i norske havner, blant annet i Sørgeir, Haugesund, Bergen, Å

Mooring



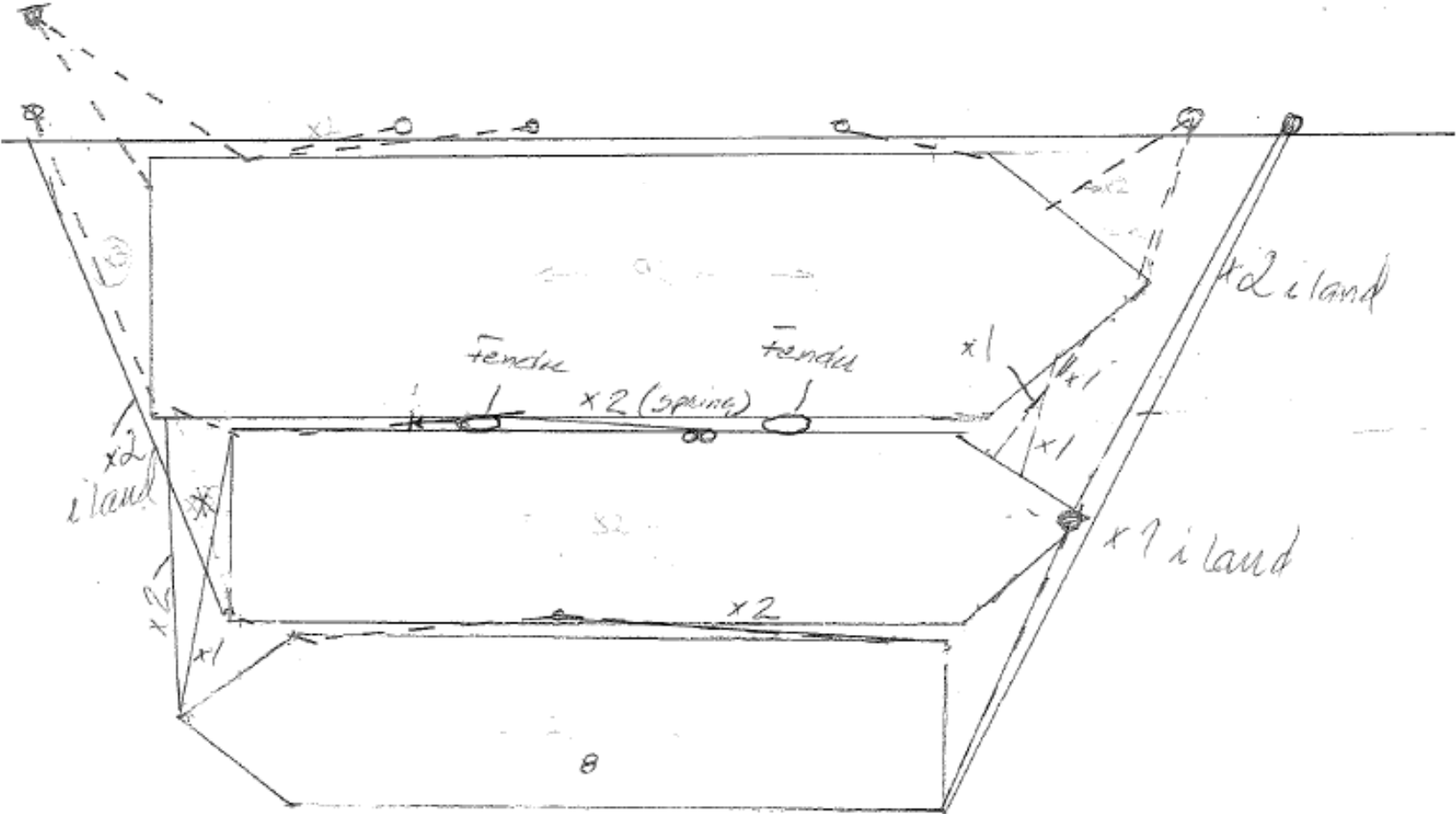
Security



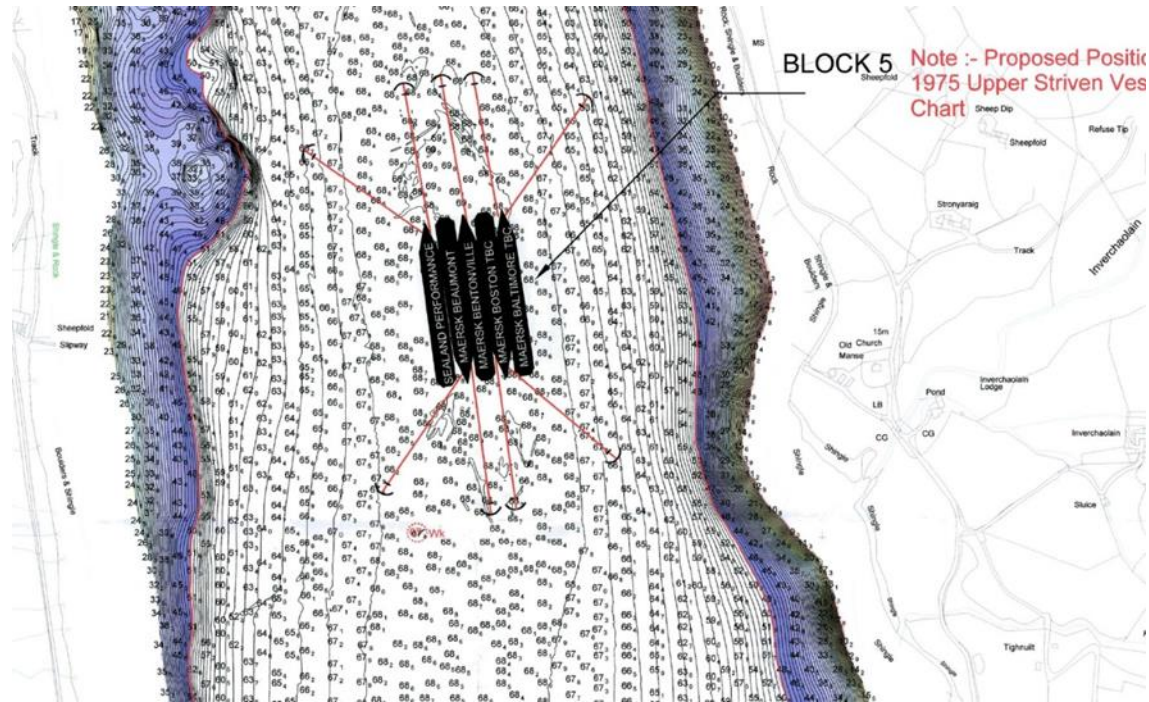
Security



Mooring plan



Mooring analysis



Location approval



Preservation



Maintenance strategy, re-commissioning and mobilization



Experienced challenges in re-commissioning

- HFO in a tank turned into solid after months laid up.
- Water built up in combustion chamber during laid up period causing hydraulic locking when the engine was restarted
- Failures due to equipment deterioration in general. The atmosphere and especially the humidity may not have been monitored during lay-up, resulting in corrosion and deterioration.
- Failures due to corrosion inside piping systems and valves (hydraulic, pneumatic systems).
- Heavy machinery components sit statically in same position or are turned with insufficient lubrication film.
- Starting up problems with malfunctioning regulators and control equipment.
- Failures because components have not been cleaned or opened up after months without operation.
- Electronic equipment start-up failures after months without power.

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Lay-up of vessels

Potential cost savings

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Typical ship cost reduction with different scenarios

Normal Running Budget	Hot Lay-Up	Warm Lay-Up	Warm Lay-Up 2 Vessels double banked	Cold Lay-up
Crew	Crew	Crew	Crew	Crew
100%	65%	45%	20%	0%
Insurance	Insurance	Insurance	Insurance	Insurance
100%	H&M – 100% P&I – 50%	H&M – 90% P&I – 50%	H&M – 90% P&I – 50%	H&M – 80% P&I – 25%
Spares & Consumables	Spares & Consumables	Spares & Consumables	Spares & Consumables	Spares & Consumables
100%	33%	30%	30%	0%
Repair & Maintenance	Repair & Maintenance	Repair & Maintenance	Repair & Maintenance	Repair & Maintenance
100%	50%	45%	45%	0%
Total Costs excl. port & fuel costs	Total Costs excl. port & fuel costs	Total Costs excl. port & fuel costs	Total Costs excl. port & fuel costs	Total Costs excl. port & fuel costs
100%	55%	41%	33%	34% Including all cold lay-up costs
Total Costs incl. port & fuel costs	Total Costs incl. port & fuel costs	Total Costs incl. port & fuel costs	Total Costs incl. port & fuel costs	Total Costs incl. port & fuel costs
100%	74%	62%	54%	34% Including all cold lay-up costs

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Lay-up of vessels

What has DNVGL been doing?

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What have DNV GL been doing?

Developed DNV **guideline** for lay-up in 2009 – updated version in 2012. A revision was created in 2014 by employees in legacy DNV and legacy GL – the release will be in 2015 - part of One Ruleset.

We have performed the following projects:

- Issued lay-up declaration for 100+ vessels
- Carried out mooring analysis for 50+ vessels
- Carried out lay-up site evaluation for 5 new locations
- Certified 1 lay-up service provider
- Reviewed 10+ lay-up procedures
- Arranged 10+ seminars and courses
- Arranged 2+ preservation \ re-activation workshops

DNV GL Lay-up services - Features

The services are available individually or in the combination best suitable for the customer:

- Advice on laying-up ships and MOUs in general
- Development of lay-up specification and procedures
- Lay-up site evaluation
- Mooring analysis
- Supervision of the lay-up process
- Lay-up Declaration, Lay-up Preservation Declaration as required by insurance companies, port authorities and other stakeholders
- Periodic inspection of the laid-up vessel's condition
- Certification of lay-up service providers



DNV GL Lay-up services - Benefits

- **Declaration** – Normally reduce the insurance premium
- **Preservation declaration** – Reduce the recommissioning scope for classed vessels
- It should be noted that the listed lay-up services are not Classification requirements



Date of issue:
2015-03-03

**DECLARATION REGARDING
LAY-UP VESSELS**

Particulars of Vessel	
Name of Vessel:	"UNIVERSAL MK 1"
Signal Letters:	9HA2521
Port of Registry:	VALLETTA
Gross Tonnage:	841
Deadweight:	
IMO Number:	9251767
Owner:	The Masters & Owners MV 2208 Ltd. of MV/Universal MK1
Manager:	V Ships Leisure SAM
Lay-up information	
Date of Lay-up:	2015-02-04
Type of Lay-up:	<input checked="" type="checkbox"/> Lay-up <input type="checkbox"/> Clean lay-up.
Date of Lay-up survey:	2015-02-04
Lay-up location:	Livorno, Italy
Water depth on location:	4.30 m
Manning/Watchkeeping:	Shipyard provides 24 hr patrol, ref. signed checklist
Draught fwd:	1.20 m
Draught aft:	1.40 m
Mooring analysis (Report no.):	2015-0169
Mooring arrangement:	As per vessel's mooring arrangement plan
The vessel is moored in block with:	" "
Name of Vessel on Port Side:	" "
Name of Vessel on Stbd Side:	" "

DNV GL, after having surveyed and examined relevant data according to our requirements for laid-up vessels, hereby declares that the above mentioned vessel and mooring arrangement are considered fit for a lay-up period of **6 months** provided the conditions and remarks given on page 2 of this declaration are satisfied.

The Owners should keep DNV GL informed of changes in the lay-up situation in order to maintain this Declaration valid.

Issued at Oslo on 2015-03-03



for DNV GL
Richard Tao
Discipline Leader

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Form No.: 32.410a Issue: 2014-11

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Safeguarding life, property and the environment

Øystein Goksøy

Head of Department Safety Advisory
Maritime Advisory

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