



TROMSOFFSHORE

TROMS OFFSHORE

A trustworthy seven seas operation



POSITION **N69°38'7", E18°56'2"**
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Transformation – Three generations

30 years of operational experience

TFDS Offshore AS (1981 – 2005)

Integrated shipowning company

Industrial owner (Troms Fylkes
Dampskipsselskap/ Hurtigruten)

Troms Offshore AS (2005 – 2011)

Pure Management company
(some asset play projects)

Private owned

Troms Offshore Management AS (2011 -)

Integrated shipowning company

PE owned
HietcVision

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Troms Offshore Supply - own a diversified supply fleet



Troms Pollux (2009)
ENI Charter; Sep 2011-2015

- ✓ VS 485 CD
- ✓ 1,000m² deck
- ✓ Oil rec
- ✓ NOFO 2009
- ✓ FIFI II
- ✓ Ice C, Deice



Troms Castor (2009)
Spot

- ✓ VS 485 CD
- ✓ 1,000m² deck
- ✓ Oil rec
- ✓ NOFO 2005
- ✓ Ice C



Troms Capella (2011)
Spot

- ✓ PSV 09 CD
- ✓ 1,000m² deck
- ✓ Prepared for crane
- ✓ Extra Acc



Troms Sirius (2012)
Under construction
Delivery 05/2012

- ✓ PSV 09 CD
- ✓ 1,050m² deck
- ✓ Oil rec
- ✓ NOFO 2009
- ✓ FIFI II



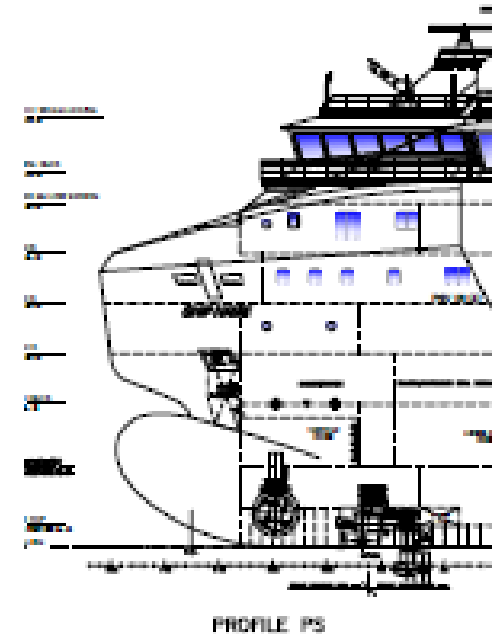
Troms xxx (2013)
Under construction
Delivery 03/2013

- ✓ PSV 09 CD
- ✓ 1,050m² deck
- ✓ Oil rec
- ✓ NOFO 2009
- ✓ FIFI II



Troms Offshore – arctic experience

- Offshore service operations in harsh environment
- Troms Offshore cold climate “history”
- Crew competence
- Troms Offshore presens in the Barent Sea



Troms Offshore – harsh environment operations



- RV Lance
- Management from 1995 – dd
- Research and coastguard
- Operation area: Barents Sea/ Spitsbergen
Three Antarctic expeditions



- NoCGV Tromsø
- Management from 1997 – 2007
- Coastguard
- Operation area: Barents Sea/ Spitsbergen area



- MV Ocean Supplier and NSO Crusader
- Emergency towing, supply
- Norwegian Coastal Administration
- Operation area: Barents Sea



- Cairn Energy, Greenland
- 2010 – MV Troms Pollux, Artemis and Vision
- 2011 – MV Troms Castor
- Operation area: West Greenland

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Troms Offshore – harsh environment operations



- RV Helmer Hanssen
- Management from 2011
- Fishery research
- Operation area: Barents Sea/ Spitsbergen



- MV Troms Castor
- New Foundland 2009 - 2010
- ConocoPhillips
- Operation area: NE Atlantic



Troms Offshore – activity in the Barents Sea



- MV Troms Castor
- Tromsø 25.09.2011
- Det Norske for support of Aker Barents



- MV Troms Pollux
- 4 years contract + 2x1 optional years
- ENI Norge
- Support of semisub Scarrabeo 8 at the Goliat field
- Contract value MNOK 420 (incl options)
- Upgrade fiFi II, Standby Rescue, Delce and Deice C

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Troms Offshore – the arctic challenge

- **Operational experience from Greenland operations**

- Thorough risk assessment prior to deployment – unfortunately not integrated with other companies or charterer
- New procedures had to be made
 - Voyage planning
 - Preparation for departure
 - Watch keeping principles
- Frequently failing satellite communication
- Poor correction signals for differentiated GPS – had to use relative systems
- Rapid change in visibility in combination with drifting growlers – special procedures on-board
- Benefitted from well qualified crew – service engineers are difficult to get to location, and it is expensive.



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Troms Offshore – the arctic challenge

Long distances – relatively poor logistic facilities

- Time/ reaction – search and rescue
- Admin – crew-change
- Technical – disruption risk management (redundancy & spare part program)
- Postponed internal- and external audits
- Troms Vision used as floating hotel and intermediate storage – limited infrastructure (quay area) and very limited hotel capacity



Troms Offshore – the arctic challenge

- **Cost elements**

- Increased insurance cost
- High cost related to crew change (airline monopoly)
- Higher cost related to training of crew
- Higher workload on shore administration

- **Stakeholders**

- Pressure from environmental organizations – strict environmental management
- Local community

- **Rules and regulations**

- Do we have the necessary standards for arctic operation?
- Current rules and regulation is relatively new – has still to meet real life



MV Troms Pollux conversion for ENI contract

- **De-Ice C**
 - Protection of deck cargo
 - Ice on cargo may cause "falling objects"
- **De-Ice**
 - Heating of superstructure, outdoor stairs and passages
 - Heating of emergency escape routes and lifesaving equipment
- **Cold climate PPE/ clothes**
- **ENI project**
 - Lifesaving equipment tailor-made for arctic challenges



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RV Lance

- Remote operations – often Iridium as only means of communication
- Extreme weather conditions
- Challenging sea ice conditions – manoeuvring skills of crew
- Old vessel
 - Technical challenges to safety equipment
 - Fire fighting limitations
 - Redundancy on heating
- Large complement – crew and researchers
- Helicopter operations
- Clothing and PPE - special Arctic section in “uniform regulations”



Human resources/ Focus on Competence

Shipboard Organization

Troms Offshore arctic experience team

Troms Offshore has taken the initiative to establish an **arctic experience team** together with the Norwegian Polar institute and The University of Tromsø.

Both the Norwegian Polar institute and The University of Tromsø highly appreciate the initiative – and see the need for a more formal documentation of operations in the arctic environment

The Troms Offshore arctic experience team is consisting of crew from RV Lance and RV Helmer Hansen.

The team consist of 2 masters, 2 chief engineers and 2 persons from the deck crew.

The team has over 75 years of total experience in arctic operations.

“The purpose of the team is to ensure that Troms Offshore is the leading company in formalized operations in the arctic environment”.



Human resource / Focus on Competence

Shipboard Organization

Troms Offshore focuses on additional competence in the arctic

All masters serving on arctic operation vessel (RV Lance and RV Helmer Hansen) must complete **The Maritime Arctic Competence program** at the University of Tromsø.

This is a unique program – and relevant to the IMO arctic guidelines and shall ensure that we are in compliance with section 14.2 in these guidelines

Several of our masters have already completed this program

The program has 6 modules, done part time, the average time to complete all 6 modules are 2 years.

- Arctic environment and metrology
- QSHE within arctic operations
- Emergency preparedness
- Arctic environment
- Operation of vessel in ice
- Technologies and developments for arctic operation



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Human resource / Focus on Competence

Shipboard Organization

Troms Offshore dedicates a lot of resources on courses and training of it's crew and officers.

Top officers program

Launched for top officers in TOM. This program is a development between University of Tromsø and HR department in Troms Offshore – and is unique in Norway. The program can become a part of a master degree for the students in the future.

This leadership program is for masters, coming masters and senior office staff. For all the masters the 3 modules must be completed within 3 years from January 2012.

Maritime leadership and management	Prof. Rørvik
Culture understanding and conflict management	Prof. Daae
Safety awareness and operational risk assessment	Prof Kjærstad

5 days program + exam for every module

First program start up in January 2012. Troms Offshore has already assigned 11 masters and 2 senior staff on first program.



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Troms Offshore – a throustworthy operation



Many thanks for your attention

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