




Your partner in offshore and maritime training

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Background & History



Nils A. Liaen
Operational Manager
Simon Møkster Shipping AS

We want to:


- *familiarize with the vessel*
- *familiarize with the equipment on board*
- *perform systematic DP training on board*
- *Perform realistic training in critical situations*




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OTS- Innovators in the North Sea




SOLSTAD OFFSHORE ASA




Normand Subsea
IMR, Survey & Light Construction Vessel




SIMON MØKSTER SHIPPING




Strilmøy
Platform Supply Vessel (PSV)



SIEM OFFSHORE



Siem Symphony
Platform Supply Vessel (PSV)





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Risk of offshore incidents.

Offshore simulator training

Want save jobs

Captain absent minutes before collision

DENSE FOG the reason behind collision

26 collisions

It was too late to steer clear of the facility

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More sophisticated and larger...



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The image shows a large red offshore supply vessel, likely a DP (Dynamic Positioning) vessel, sailing on the ocean. The vessel is viewed from a distance, showing its full length and the complex superstructure on the deck. The sky is overcast, and the water is dark. The SMSC logo is in the bottom right corner.

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Lack of DP -competence and experience?



Demand

Supply


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The image shows the interior of a DP control room. Two operators are seated at a desk with multiple computer monitors displaying data. A graph is overlaid on the image, showing a red line labeled 'Demand' that slopes upwards from left to right, and a yellow line labeled 'Supply' that is nearly horizontal. A blue vertical arrow points upwards from the x-axis, and a blue horizontal arrow points to the right along the x-axis. The SMSC logo is in the bottom right corner.

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Training on critical situations.....?



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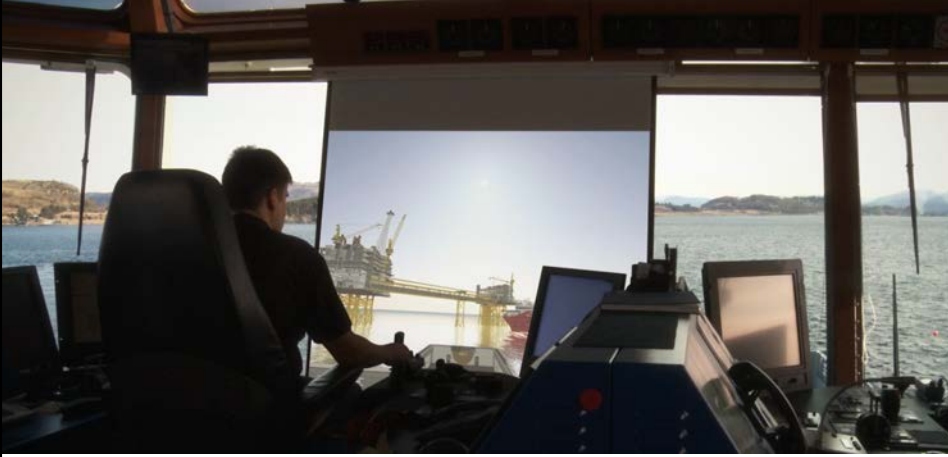
Concept description

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We create a virtual world around your ship

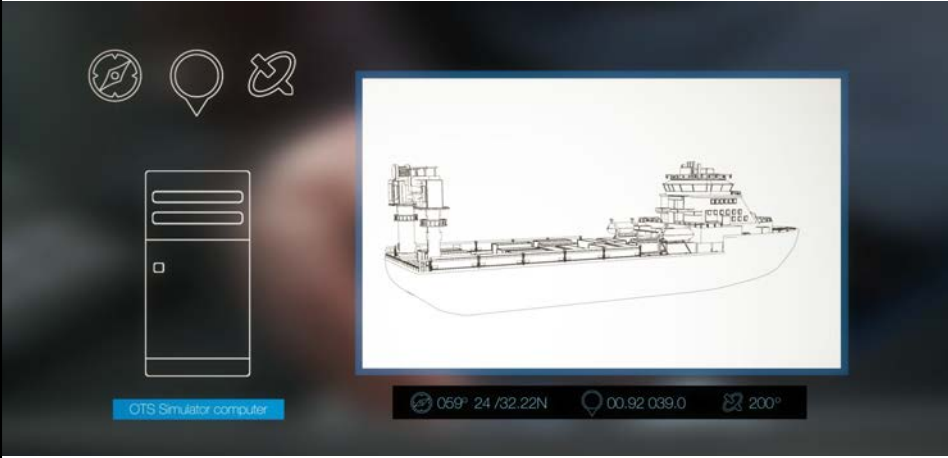


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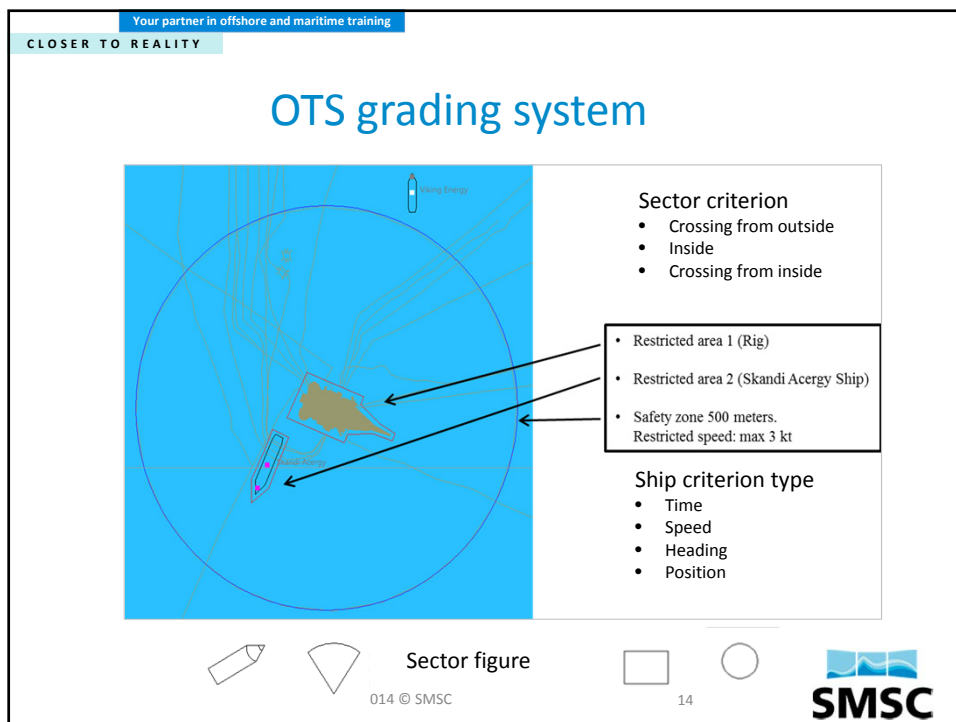
Receives input from the vessels GPS and Gyro.



OTS Simulator computer

059° 24 /32.22N 00.92 039.0 200°


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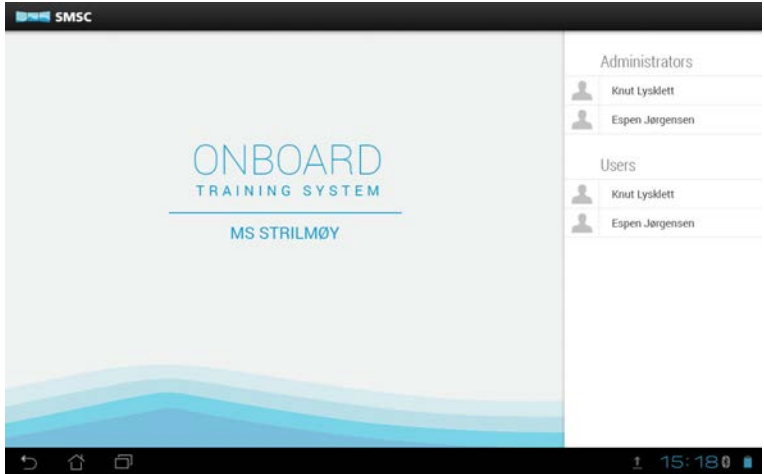
How to use it







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How to log on



Administrators	
	Knut Lysklett
	Espen Jørgensen

Users	
	Knut Lysklett
	Espen Jørgensen



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Dashboard

SMSC Dimitar Dimitrov LOG OUT

Exercises FAQ & Support User profile

Log

2013-11-13 Arrival worksite Not submitted
 2013-11-12 Setting up vessel on DP Not submitted
 2013-11-12 Docking at Eureka harbor Not submitted
 2013-11-12 Joystick manoeuvring Not submitted
 2013-11-12 Docking at Eureka harbor Not submitted

VIEW MORE

Time in simulator
DAYS: HOURS: MINUTES
OWN 0:8:20
SHIP 0:8:23

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Preset exercises

SMSC Exercises

Ship Familiarization
 DP Operations
 Contingency situations

Arrival worksite
 TIME ESTIMATE: 20 MIN HEADING: 355° DISTANCE: 1000 M

Turn competition
 TIME ESTIMATE: 5 MIN HEADING: 116° DISTANCE: 300 M

Docking at Eureka harbor with limitations
 TIME ESTIMATE: 30 MIN HEADING: 275° DISTANCE: 800 M

Joystick manoeuvring
 TIME ESTIMATE: 30 MIN HEADING: 10° DISTANCE: 700 M


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Mission


SMSC Exercise: Docking at Eureka harbor with limitations



Exercise objective

After this exercise the trainee shall be able to:

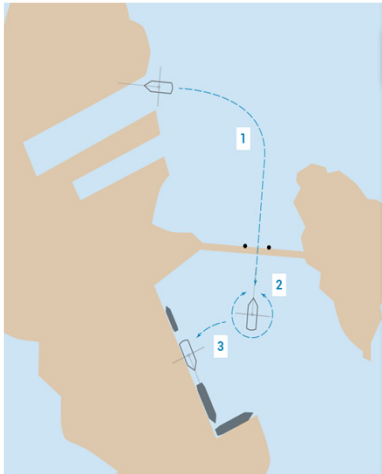
- Get the vessel under way from stop position and maintain a safe speed.
- Follow a pre-planned track in narrow water.
- Maintain safe distance to all obstacles.
- Stop the vessel in a pre-planned position and rotate the vessel.
- Turn, line up and approach berth in a safe manner.



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Scenario




TIME ESTIMATE	HEADING	SPEED	CONTROL
30 MIN	275°	0 kts	Aft

- ✓ The ship is in manual mode.
- ✓ The thrusters are running.
- ✓ The checklist "arrival harbour" is completed.
- ✓ No further communication is required.

The exercise is complete when the vessel is stopped within the berth.

- Commands the approach. Follow the pre-planned track.
- Turn the vessel 180 degrees before line up.
- Use the thrusters and take the vessel sideways in to the berth. Berth direction 155 degrees.



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Current weather and light conditions

Exercise: Docking at Eureka harbor with limitations

Weather & light conditions

WIND SPEED	WIND DIRECTION	WAVE HEIGHT	WAVE DIRECTION	LIGHT	WEATHER
26 kt	132°	6 m	126°	Mid day Dusk Night Dawn	Sunny Partly cloudy Light rain Heavy rain Fog

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Checklist before start up

Exercise: Docking at Eureka harbor with limitations

Summary

EXERCISE	Docking at Eureka harbor with limitations	<input checked="" type="checkbox"/>	The ship is positioned safely in open water
USER	Terje Fiskum Brandsoe	<input checked="" type="checkbox"/>	The ship is dead in the water
LIGHT	Night	<input checked="" type="checkbox"/>	Watch keeping personnel according to manning certificate is on duty, and is not taking part in exercise
WEATHER	Heavy rain	<input checked="" type="checkbox"/>	All relevant checklists which cover all preparations/activities prior to the specified operation are performed.
WIND SPEED	132°, 26.0 kt		
WAVE HEIGHT	126°, 6.0 m		
EXERCISE HEADING	275°		
SNP HEADING	275°		

Simulator ready

START EXERCISE

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Map and camera control

SMSC Mission View PAUSE EXERCISE

30 fps

180°

-10°

X: -1324.18 Y: -591.45 H: 275.62 100.0 m

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Exercise report

SMSC Report summary

General

EXERCISE	Docking at Eureka harbor with limitations
DATE	02.01.14 14:14
USER	Knut Jarle Lysklett
STATUS	Submitted
APPROVED BY	Knut Lysklett

Weather conditions

LIGHT	Midday
WEATHER	Sunny
WIND	NL 0.0 m/s
WAVES	0.0 m

Exercise summary

STARTED	14:14:28
DURATION	13:29
RESULT	Passed
SCORE	70 of 100

Exercise details

00:02:17	Above speed limit in harbour area (5 kts)	Speed
00:02:57	Wrong heading towards bridge	Position
00:07:58	Speed during berthing approach more than 1.5 kts	Speed
00:11:15	Speed close to berth above 0.5 kts	Speed
00:13:30	Exercise completed	Position

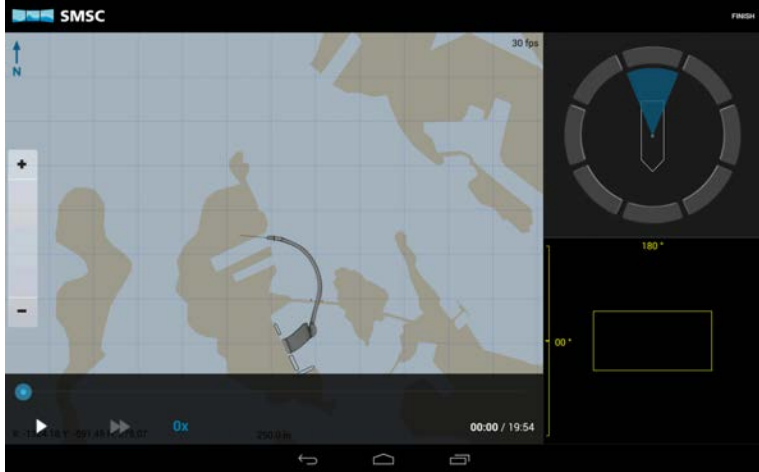
REVIEW EXERCISE APPROVE EXERCISE

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Replay and «footprints»





The screenshot shows a software interface for maritime training. On the left, a map displays a ship's path (footprints) in a blue line over a grey grid. A ship icon is visible on the path. On the right, there is a control panel with a circular gauge and a rectangular display area. The interface includes a play button and a '0x' speed indicator at the bottom.




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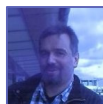
Technical wrap up

	<p>Vessel:</p> <ul style="list-style-type: none"> • Ship design • Thrusters • Control system 	<p>Onshore Ship Simulator</p> <ul style="list-style-type: none"> 3D model Physic model Copy? 	<p>OTS</p> <ul style="list-style-type: none"> Real Real Real
	<p>External forces:</p> <ul style="list-style-type: none"> • Wind • Waves • Current 	<ul style="list-style-type: none"> Physic model Physic model Physic model 	<ul style="list-style-type: none"> Real Real Real





Experience from 2 years of trial on board the PSV Strilmøy



By Captain
Sigurd Byrknes



PSV STRILMØY

Services

- Oilfield transport
- Oil recovery operations
- Stand-by duties


MAIN DETAILS	MAIN DIMENSIONS	ENGINE AND PROPULSION
<p>Type: MT-6000 MK 2</p> <p>Class DNV 1A1, SF, Eo, Dynpos-AUTR Comfort-V(3), CLEAN, LFL*, DK(+), HL(2.0/2.8), OILREC, NAUT (OSV)L.O.C.</p>	<p>L.o.a.: 85,65 m L.p.p.: 78.00 m Breadth: 19,70 m</p> <p>Total deck area: 941 m2</p>	<p>Main engine: 4 x Caterpillar</p> <p>Gears, Proppellers & Thrusters: 2 x Lips Main Compass Thrusters 2 x 2500 KW 1 x Lips Retractable Thruster 880 KW forward 2 x Lips Tunnel thruster 2 x 880 KW forward</p>



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TRIAL REPORT from captain **Sigurd Byrknes**



CV Captain Sigurd Byrknes:
46 years old, more than 30 years experience from several different vessels and operations, accumulated DP Experience 13 years, Involved in the OTS development process for more than 3 years.

Accomplished OTS exercises: 55	Average duration per OTS exercise: 20 min	Numbers of navigators who have tried OTS: 7
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Our experience from Strilmøy so far.....

When we set on board training on the agenda “we find time” to train.

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Our experience from Strilmøy so far.....

One can perform DP training under more realistic circumstances.



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Our experience from Strilmøy so far.....

It is a good way to practise crises management.



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Our experience from Strilmøy so far.....

New navigators get a good opportunity to familiarize themselves with the vessel in a safe and efficient manner.



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Our experience from Strilmøy so far.....

All performed OTS- training is documented in an easy way.





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Familiarization Procedures Critical Situations

BARRIERS

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The system secures evidence for accomplished training on board.

Right heading before start up
Check 1

Mission must be completed
Check 2

Exercise report must be approved by the "Captain"
Check 3

General	
EXERCISE	Docking at Eureka harbor with limitations
DATE	02.01.14 14:14
USER	Knut Jarle Lysklett
STATUS	Submitted
APPROVED BY	Are Lykke

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Example: "vessel report" for accomplished onboard training.

Vessel Report

Vessel: MS Strilmeijer
 Company: Simon Mølkster Shipping AS
 Period: 01.01.2014 - 31.03.2014


OTS Weather Index	Wind	Waves
Category 1	0 - 10 kts	0 - 1.5 m
Category 2	10 - 25 kts	1.5 - 3 m
Category 3	25 <	3 <

Training log

Exercise	Number of ex.	Average duration	Weather category			Passed	Failed
			1	2	3		
Arrival worksite	3	00:15:33	1	2	0	2	1
Turn competition	10	00:11:01	5	3	2	7	3
Docking	7	00:35:29	1	4	2	5	2
Joystick manoeuvring	5	00:15:15	2	2	1	3	2
Setting up vessel on DP	9	00:27:15	2	3	4	5	4
Autopos	12	00:25:54	3	5	4	8	4
Manual takeover from DP	15	00:30:20	5	5	5	9	6
Switchboard & thruster failure	4	00:29:15	1	2	1	3	1
Summary	65		20	26	19	42	23

Exercise summary




Type of training	Ship Familiarization	DP Operations	Critical Situations	Total time
Number of exercises	25 Exercises	21 Exercises	19 Exercises	26:50:30
Accumulated time	08:02:27	09:32:00	09:16:03	




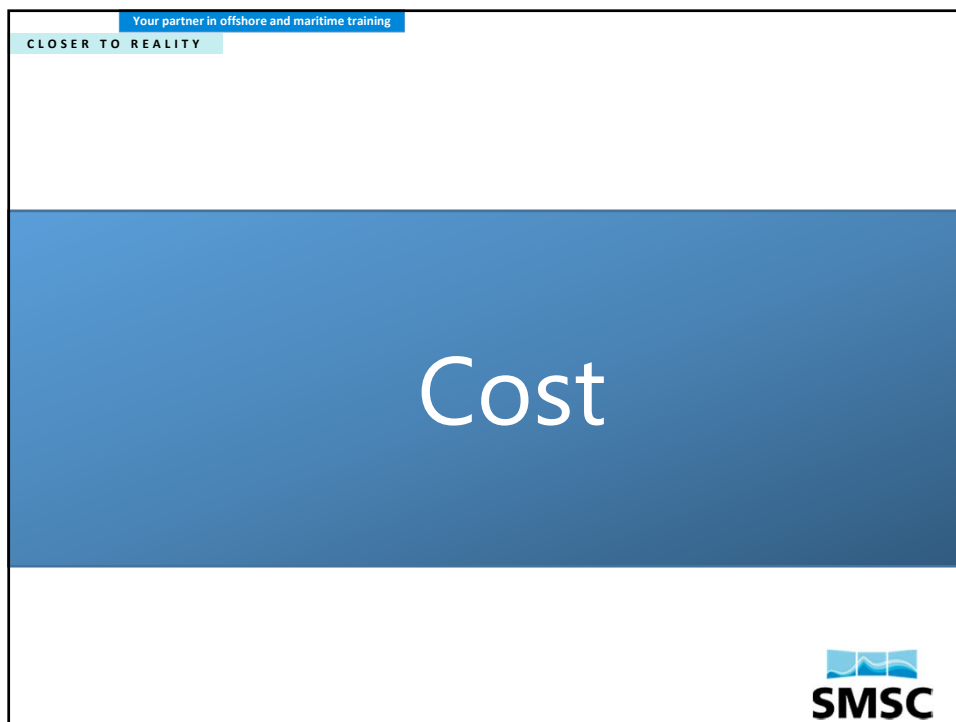
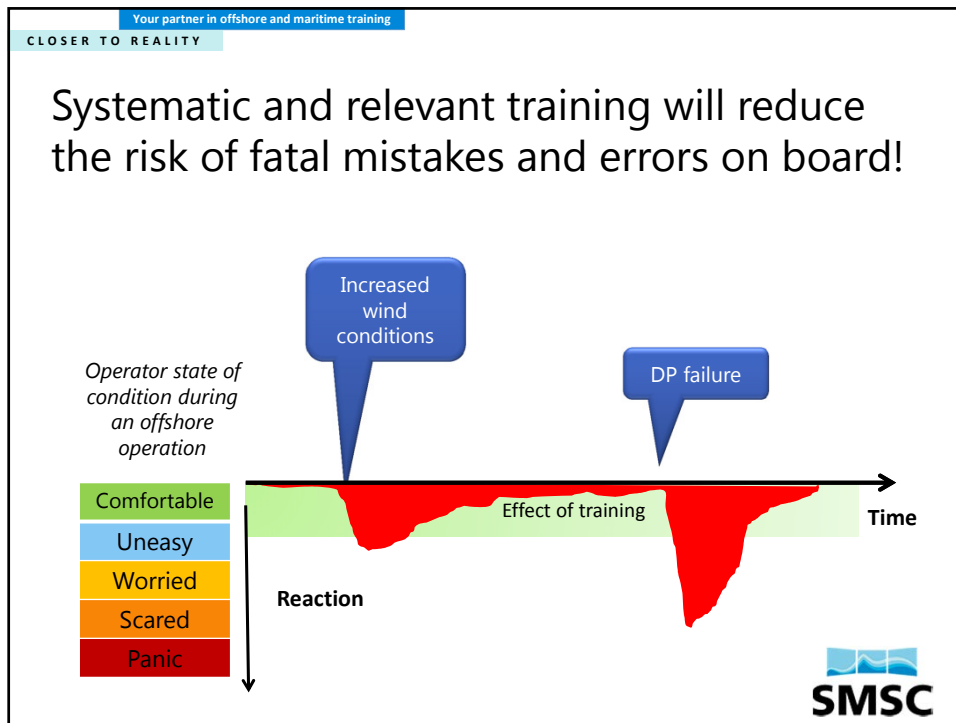
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Systematic OTS training will improve the overall competence of the crew to handle critical situations.

Knowledge Understanding Skills Integration	Team (6) Ship X
High	2 
Medium	3 
Low	1 





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Kostnader



OTS

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ONBOARD TRAINING SYSTEM

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Cost



Hardware

- OTS simulator pc
- Projektor
- Lerret
- Router
- Tablet

200 000 NOK

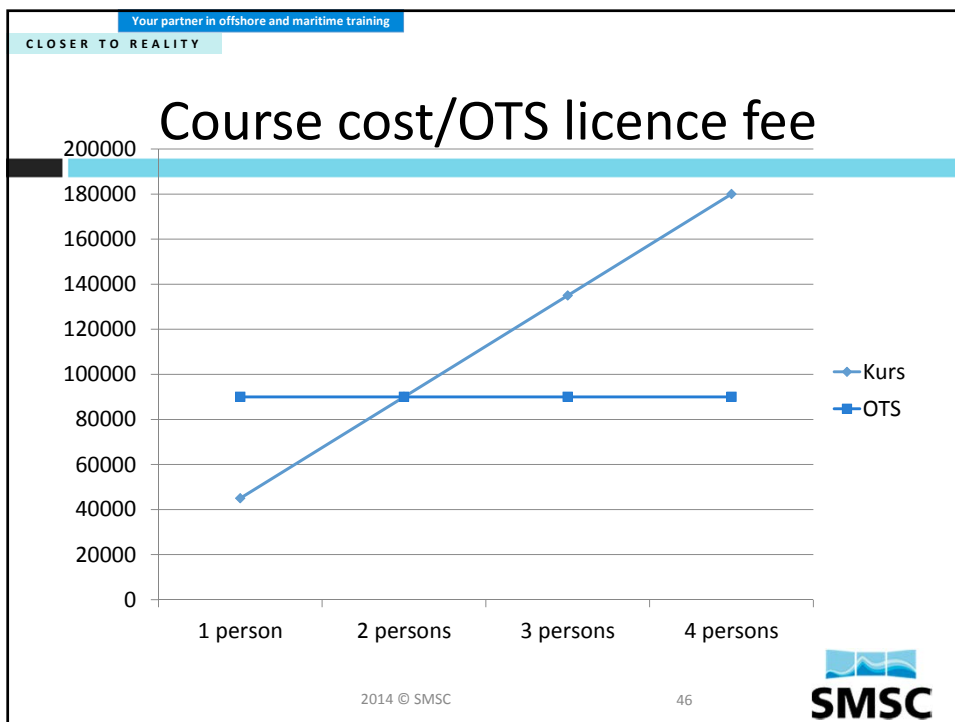
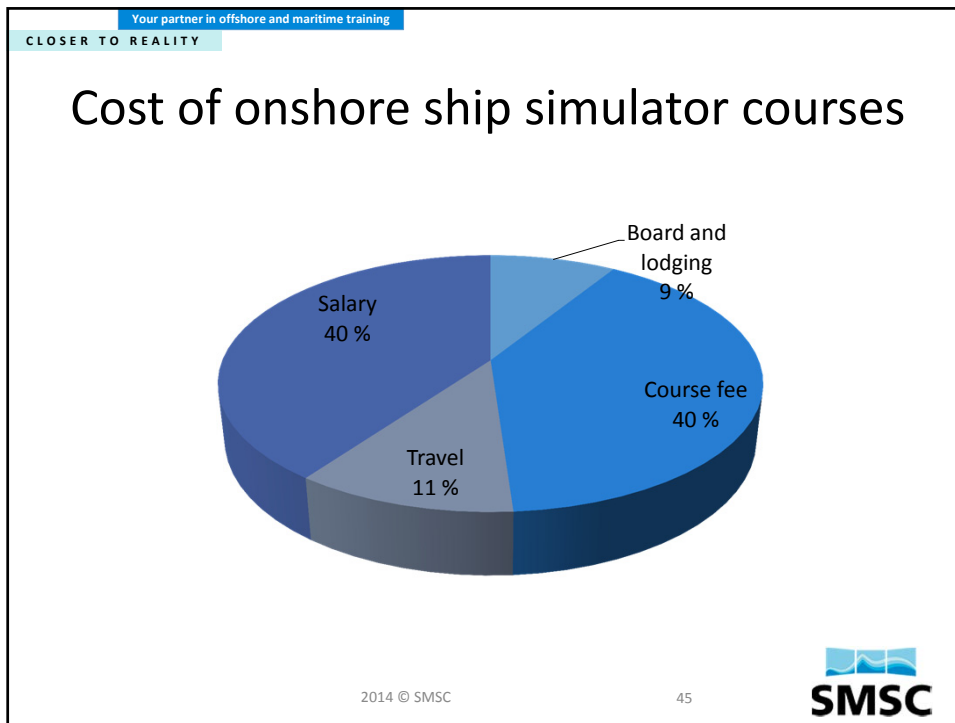
**OTS
Licence fee per
vessel**

7 500 NOK/month
90 000 NOK/year

4
4

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Let's begin the demonstration!



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