



Safer
Ships
Through
Focused
Training



Great Offshore launches innovative new training initiatives.

Great Offshore - India's largest integrated offshore services business employing more than 2,000 seafarers - rolled out its new Training and Skills Management (TSM) initiative during 2009. The result of an intensive analysis of the complexities and challenges that are inherently part of operations in the offshore oilfield domain, the company realized early on that no ordinary solution was going to meet its objectives.

The company needed to set out its training framework against a landscape of increasingly challenging operations in deeper and harsher waters; the proliferation of complex technology across its vessels and with the very real need to build *experience* and not just *skills* into

the ship handlers and ship based personnel of the next generation.

Operating an offshore vessel, unlike a larger typical cargo vessel, involves working in *extremely close proximity* to hazardous oil platform installations and drilling rigs, and vessels are routinely required to hold position and maneuver with extreme precision, countering all forces of wind, current and tide, often for extended periods of time.

Although training personnel in the use of sophisticated technologies such as dynamic positioning is an important part of this, the company noted that these technologies also presented a layer of *separation* between the

ship handler and the fundamental handling of the vessel.

The need for expert *manual* handling skills remains critical - one simple split second failure can lead to a very serious accident.

The first move towards implementing the new training initiatives came in the design and commissioning of a completely *customized* and unique vessel simulation facility.



Modeling the company's own vessels with their *exact handling characteristics* into the simulator presented a unique set of challenges and involved the company becoming deeply involved in the design of a completely new kind of simulation system to achieve this. The handling characteristics of the simulated vessels were exhaustively cross referenced against actual vessels and fine tuned until a complete match was achieved.

This provides a simulator solution which allows the company's seafarers to train on the company's own vessels.

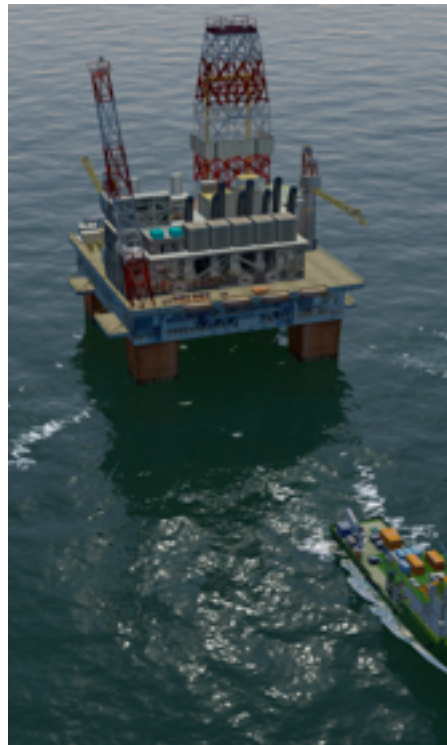
A comprehensive range of features are implemented within the TSM simulators, including dynamic positioning, GMDSS and a unique dynamic *total physics* approach to the complexities of anchor handling. Forces are modeled in every axis and force effects accurately mapped into the stability and handling characteristics of the simulated vessel. This allows trainees to learn both the procedures involved in anchor handling, as well as to practice for extremely challenging contingencies and emergencies.

Recognizing the fact that risks to safety increase during combined operations (*eg vessel to rig transfers*) Great Offshore has also built in a crane simulator which can be operated as a standalone crane training tool, or integrated with the vessel simulator such that the crane and vessel are both operating in the same simulated mission at the same time. The crane simulator replicates the actual cranes installed on the company's rigs and larger offshore construction vessels.

The TSM Simulators and the installation itself have all been fully classed and certified by DNV.

Innovative TSM policies for the use of simulators within the company include:

- **CHECKRIDES** - Ship handlers are periodically put through challenging simulator missions in which their performance is observed and these observations are then used to identify any gap areas where additional training is required. Checkride missions are also used to allow the company's masters and ship handlers



“We had no interest whatsoever in procuring a *standard simulator product*. None at all. We had our own ideas and we were not prepared to compromise on them. So we designed our own simulator systems and then we went out and got them built. And we achieved this at a lower cost than most vendors sell basic, non customised, packaged simulators for.

Nick Kulukundis, Senior Strategic Consultant and member of the sim design team.

to demonstrate their own individual ship handling strategies, which can be recorded into the simulator and can then be used to disseminate such valuable experience across the organization. In this way the training facility is playing a crucial role in the evolution of vessel handling techniques.

- **INCIDENT MODELING** - Significant incidents and near misses are routinely recreated within the simulator. Simulator focus sessions are then routinely run for bridge teams, allowing large numbers of seafarers to experience first hand such situations for themselves and alerting them in a compelling way to the particular risks and errors which have been involved. In this way every incident becomes a valuable opportunity for learning across the entire seagoing workforce.
- **REVERSE ROLES** - The company also runs sessions where rig crews are given command of simulator supply vessels; and vessel crews and given command of a rig - an initiative designed to foster a greater understanding of the challenges faced by each party in joint operations between rigs and vessels - often a flashpoint for communications difficulties and friction.
- **SAP INTEGRATION** - Detailed trainee assessment results from simulator sessions are automatically

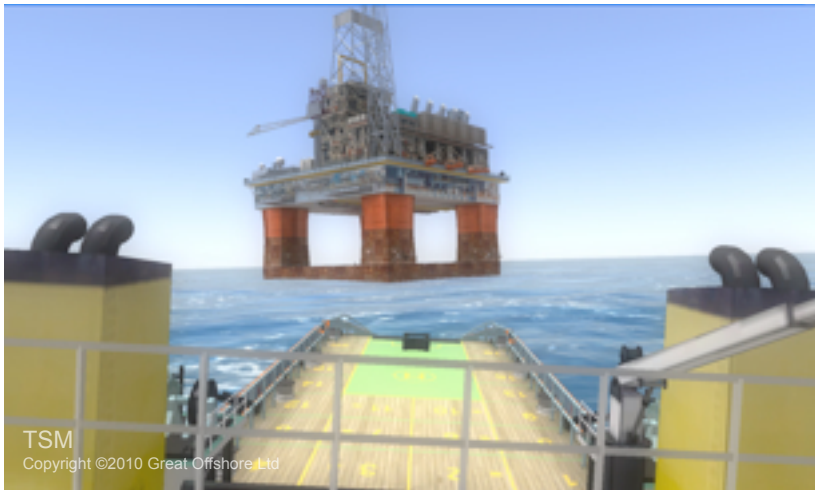
fed into the company's SAP HR Skills system, which has been customized to support this. This unique feature allows the company to use the powerful business intelligence reporting systems in SAP to produce detailed analysis reports of areas of weakness across the company and to target training programs effectively where they are most required.

TSM is now fully operational in the company and, since its launch, the company has seen a significant improvement in LTIs, incident records and near miss situations, leading to improved operational efficiency and lower insurance premiums - a measurable and very real return on investment.

Further testament to the success of the TSM system can be found in the fact that some of the company's oil company clients have expressed interest in sending their own staff for training within the simulation centre and have adopted some of the core principles of the TSM system.

Captain Ajay Chitnis, heading the TSM initiative in Great Offshore says - *“TSM is already a powerful and unique approach to training using simulation; but it is also a platform upon which we will continue to build and develop, always aiming to maintain our position as a leader in safe, reliable and efficient world-class offshore operations.”*

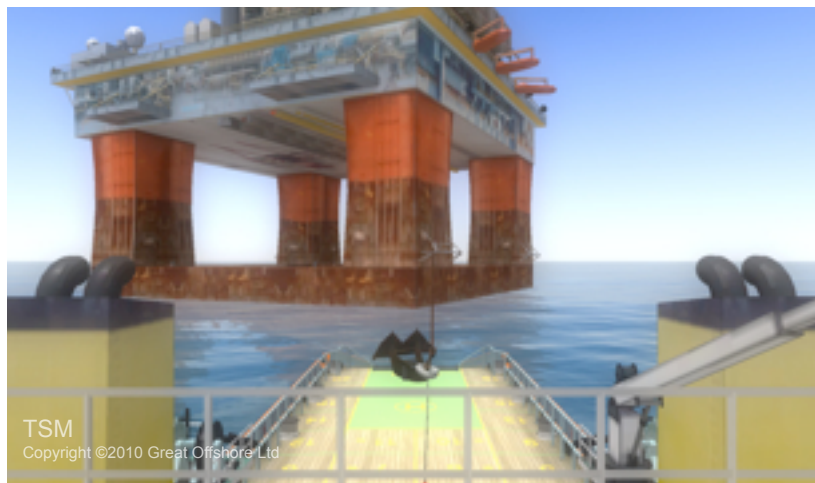




Anchor Handler MALAVIYA TEN, approaching a rig under aft bridge control.



Virtual camera view of anchor handling operation in progress aboard Malaviya Ten.



Aft bridge view, decked anchor, operation in progress.



Virtual camera views can even go underwater, a feature used in debriefing and induction training.

