Fit for the Future- Challenges and Opportunities For the Offshore Industry
Executive Offshore owns and Operates a fleet of Modern OSV’s, and provides a comprehensive range of services to the offshore industry:

- Technical & Operations
- Crew management
- Crew Training and HSEQA
- New Building & Design Supervision
We aspire to be a driving force of change and innovation through our superior knowledge, capabilities and professionalism as a Marine Service Provider towards the benefit and growth of the clients we serve and the global maritime industry as a whole.

Our Mission

- We are committed in our purpose and values to provide maritime services of the highest order by being distinctly more efficient, effective and trustworthy to our clients.
- We strictly adhere to our HSSE policy and contribute positively towards the industry and environment to make our planet a safer, healthier and better place to live in.
- We develop a culture of excellence and the system of highest integrity and competence to nurture talent and create equal opportunity among the employees to deliver our promises to our clients.
World Wide Network

- Offices near our customer bases and operating areas
- Local Office staff visit vessel regularly to drive performance
Offshore Market

Conditions in the offshore sector have been challenging for several years now, and many on the outside might presume that market signals would still be very negative. But key offshore metrics appear more varied, with some parts of the market having seen greater improvements than expected whilst others remained stubbornly weak.

Clarkson Research

While the outlook for the OSV sector in 2019 is more favourable compared to this year, we expect only a modest improvement in 2019 as the continued oversupply of OSVs is capping any improvement in day rates amid growing demand for production support vessels and rigs. We anticipate OSV utilisation rates to continue improving but day-rates improvement will be more of a 2020 story.

DBS Offshore & Marine

The bottom line is, OSV Operators continue to face challenges and the sunshine is somewhere in the distant future. Hence OSV Operators have to streamline their operations, watch the costs with an eagle eye, yet deliver top quality performance in this demanding market. **Key is Operational Efficiency**
• DP - Designs & New Building
• Digitization & IT System – to ease burden of ship staff
• Leveraging Technology – For safe and efficient operations
When faced with hazards most convenient response is to institute ‘Operational Controls’ and/or define ‘Personal protective equipment’.

Efficacy of such measures are heavily dependent on ‘Human’ element, which is already burdened with heavy ‘Paper Work’ thanks to increased industry oversight.

Result is avoidable incidents which are often and conveniently blamed on ‘Human Error’.
Design & Build Vessels for Safety

- Consider available Rules & Regulations of IMO and Classification Society
- Consider available Industry Guidance such as IMCA, MTS etc.
- Consider ergonomics for operator comfort (ABS Guidance Notes on The Application of Ergonomics to Marine Systems)
- Review the designs and oversee the constructions.
- Consider operator feedback to improve
Design & Build Vessels for Safety

- At initial Failure Mode and Effects Analysis (FMEA) consider:
  - Effective Segregation for redundancy
  - Cross connections
  - Position Reference Systems (Absolute / Relative)
  - Cooling and Ventilation Systems
  - Fail Safe modes

- Addressing these at the build stage is most effective & economical

Seven Pillars

- Autonomy
- Independence
- Segregation
- Differentiation
- Fault tolerance
- Fault resistance
- Fault ride through
DP Standards

- Ship Yards usually price higher when many standards are specified in the contract.
- Even if all the standards and guidance are specified, implementation is a challenge.
  - Class Societies possessing the necessary skills and rigor only verify the IMO and Class Rules & Regulations.
  - Industry Standards and Guidance are left to be verified by Owners New Building Supervision team. They normally lack the required skills and knowledge to carry out this job effectively.
  - In effect these then depend on the quality of the Shipyard design team. Many vessels built in less reputed yards suffer from this.
Challenge / Opportunity

• How do we unify the excellent Standards and Guidance developed by the industry bodies
  – Work with IACS to develop Unified Rules incorporating the Standards / Guidance developed by the Industry Bodies
  – Participate at IMO Working Parties

• This ensures that these Standards / Guidance are implemented effectively

• Standards of all vessel will improve

• Level playing field to good operators
Autonomy and Independency

- Distributed Process Controllers
- Autonomy at the machine level for local control & safety
- Dual network for redundancy
- Possibility of control extension to DP System directly independent of centralized control

- 40% reduction in cable network over conventional
- Drastic reduction of cable related failures
Challenge / Opportunity

- How do we bring in best in class solutions available in the industry?
- Rules and Guidance documents often are indicative and not prescriptive and rightly so.
- Utilizing the best in class solutions then depends on the OSV Operators.
- Economics of new building is not in favor of such novel solutions.
Most companies have some sort of IT systems to manage Safety Management System onboard

- However they still depend on the DPOs filling various forms and check lists manually
- Planned maintenance activity usually is a scheduler for PMS jobs and with inventory coupled to it
- Crew training and familiarization is still conventional and record keeping not integrated

There is a need to digitize these manual functions and record keeping to ease crew burden onboard
“Phoenix” combines all aspects ship management such as Crewing, Technical, HSEQA, Audits and Inspections, Planned Maintenance, Inventory and Accounting.
PHOENIX – Taking beyond

• Intelligent Dashboards
  • Prompts the ship staff on jobs at hand contextually
  • Easy navigation reduces burden

• On line forms and checklists
  • Intelligent forms with on screen prompts focuses on process control
  • Available in office for guidance

• Trending & Condition monitoring
  • Trending the machinery parameters helps the watch keeper of impending problems
  • Possibility for condition monitoring and scheduling maintenance before machinery fails
• **Current advances in Technology allows us**
  - To automate routine tasks
    - Reduces or eliminate crew errors
    - Reduces crew burden
    - Simplified crew training and familiarization
  - Improve training of crew by deploying Computer Based Training
    - Moves class rooms to the ships for effective learning
    - Evaluation by shore staff enables customizing the training needs
    - Platforms with virtual reality can be used to deliver scenario based training to experienced DPOs for refresher training and sharpening their skills
ASOG – Critical Activity Mode

- **ASOG & CAM**
  - Is a long and complex document
  - Depends on crew to fully understand and implement
  - Human error is possible
  - Scope exists to automate the ‘vessel set up’ as per the Critical Activity Mode
  - Automation frees up the DP Operators and Engineers to focus on tasks that require their decision
ASOG – Critical Activity Mode
ASOG – Critical Activity Mode
DP Operator Training

Training on DP Advanced - Simulator

Accredited DP Training
- DP Advanced and Basic Simulators (Kongsberg)
- DP Maintenance Course

DP Instructor Station
- DP Basic-Simulator

SAMUNDRA INSTITUTE OF MARITIME STUDIES (SIMS)
**DP Operator Training**

- **Initial Training & Certification**
  - Well established and controlled
  - Includes both classroom and practical experience before certification

- **Refresher & Continuous Learning**
  - Once DPOs receive their certificate, subsequent maintenance is based only on DP Operation logs
  - Overtime loses skills due to no oversight

- **Case in Point**
  - OSV serving a DP Drill Ship for logistics support
  - Whilst on DP enabled two Relative and two Absolute PRSs with all equal weightage
  - Experiences position deviation
  - Calibrated Relative PRSs – still position deviation continued
  - Disabled the Relative PRSs and maintained vessel only on Absolute PRSs
DP Operator Training – Challenges / Opportunities

- How do we ensure DPOs knowledge and skills continues to remain intact, current and relevant
  - Industry specifies Simulator Training as a means of refresher / continued learning
  - DP Training centers providing these Simulator Training are primarily geared towards initial DPO training
  - To refresh or enhance the DPOs skills these centers need to have exposure to current Operational Practices and Operating Environments for effectiveness

- Way forward could be
  - Computer Based Training based on Operational Experiences
  - Virtual Reality Platforms presenting case scenarios with back end evaluation
Route Planning Related Chart Alarms.

Plan a route; define waypoints and other necessary information.
Thank You