



OGP/IAGC joint HSSE Meeting

London Gatwick 2-3 November 2010

Transfer at Sea - Helicopter vs Small Boat

Cees van der Schans, Shell Global Geophysics HSSE Focal Point

# Seismic Offshore Crew changes

- Current Industry practice for crew changes appears to be a preference for using helicopters; in e.g. Shell Europe, 95% of crew changes are done by helicopter, 2 % by boat and 3% by port calls; In other regions, crew changes by boat-to-boat are more common; not all options are possible in all situations, so this is about situation where there is more than one option practically possible;
- Poor safety statistics of helicopter operation. A large percentage of helicopter accidents is fatal (appr. 40%) with multiple fatalities as a result. On the other hand there have also been quite some incidents involving small boats and launching and recovery of small boats but such incidents are rarely fatal (to our knowledge 1 fatality in the last 15 years); As one person in Shell put it, “ people are more likely to get injured and less likely to get killed when travelling by boat than by helicopter”
- Shell is re- assessing the relative risks of the various options for crew changes (by helicopter, by boat-to-boat transfers, by port call), recognizing that there is no one answer that fits all, but including under what conditions more than one option exists and what would then be the safest option;

# QRA

- We started on a QRA comparing 3 different ways of crew change: by helicopter, by boat-to-boat transfer and by port call
- QRA based on Fatality statistics:
  - General: 50 vessels, 50 staff per vessel, 10 crew changes per year
  - Helicopter: **OGP statistics or offshore helicopter transportation**: 5.7 fatal accidents per million flight hours, 7.5 fatalities per fatal accident;
  - Boat-to-boat transfers: use **number of workboat/FRC sorties** as basis: 1 fatality in 15 years
  - Port-calls: use **back-deck exposure** for retrieval/deployment in water equipment as the basis: 3 fatalities directly linked to back deck operations in 25 years
- But: these assumptions are easily challenged, for example:
  - There have been no known fatalities on offshore seismic heli flights only;
  - Workboat sorties mainly used for streamer work not fully representative for boat-to-boat transfers (however: launches/recoveries should be);
  - Port calls: should consider full vessel exposure during time spent on port calls;
  - Fatality numbers too small to serve as basis for reliable statistics

# How to progress further?

## ■ More QRA?

- Include hi-po and non-fatal incident statistics?
- Limit statistics for boat-to-boat transfers better to those incidents where it is clear that these could also happen in case of boat-to-boat transfers for crew changes?

## ■ Or Non-QRA?

- Helicopters: limited scope left for further safety improvements: everything possible is already been tried, heavy scrutiny by regulators;
- On the other hand for boat-to-boat transfers there may be more room left for further improvements, implementing more of the lessons learned from the many incidents that have happened;
- Engineering solutions, for example like the launching area at the rear of a vessel like the PGS Ramforms;
- Start from scratch: not start with what there is and make the best of that, WB, FRC, launch system, chase/support vessel as crew change vessel, all of which have been designed for other purposes, but start with what would be safe from a crew change perspective. For example a purpose designed crew change vessel, a compatible davit system on both seismic and crew change vessel, purpose build small craft to do crew changes only with better stability, improved reliability launch/recovery systems with more redundancy, etc.

