

Jack Bates

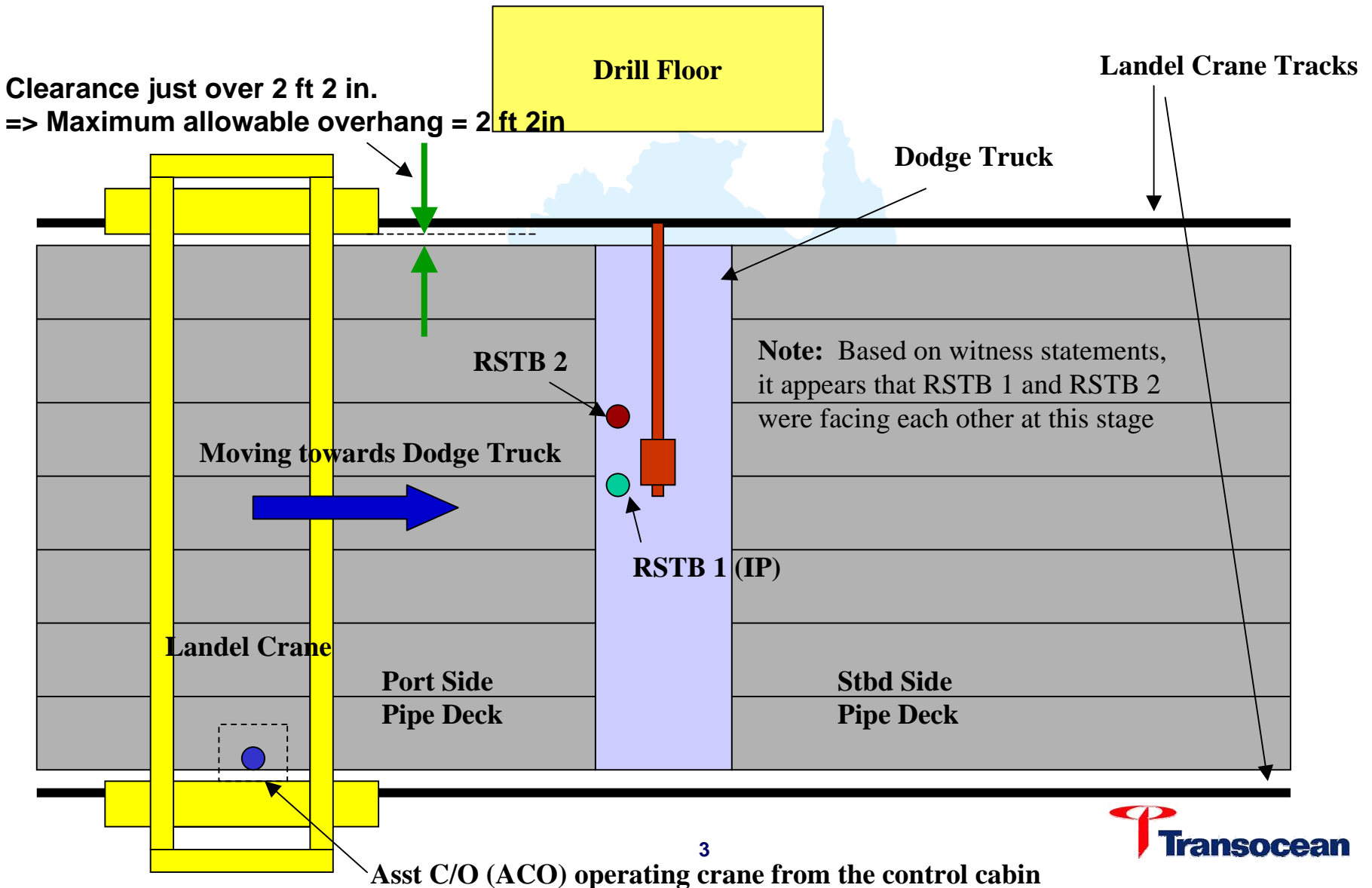
Investigation

Serious Injury Case Roustabout struck by Diverter Running Tool (26th November 2004)

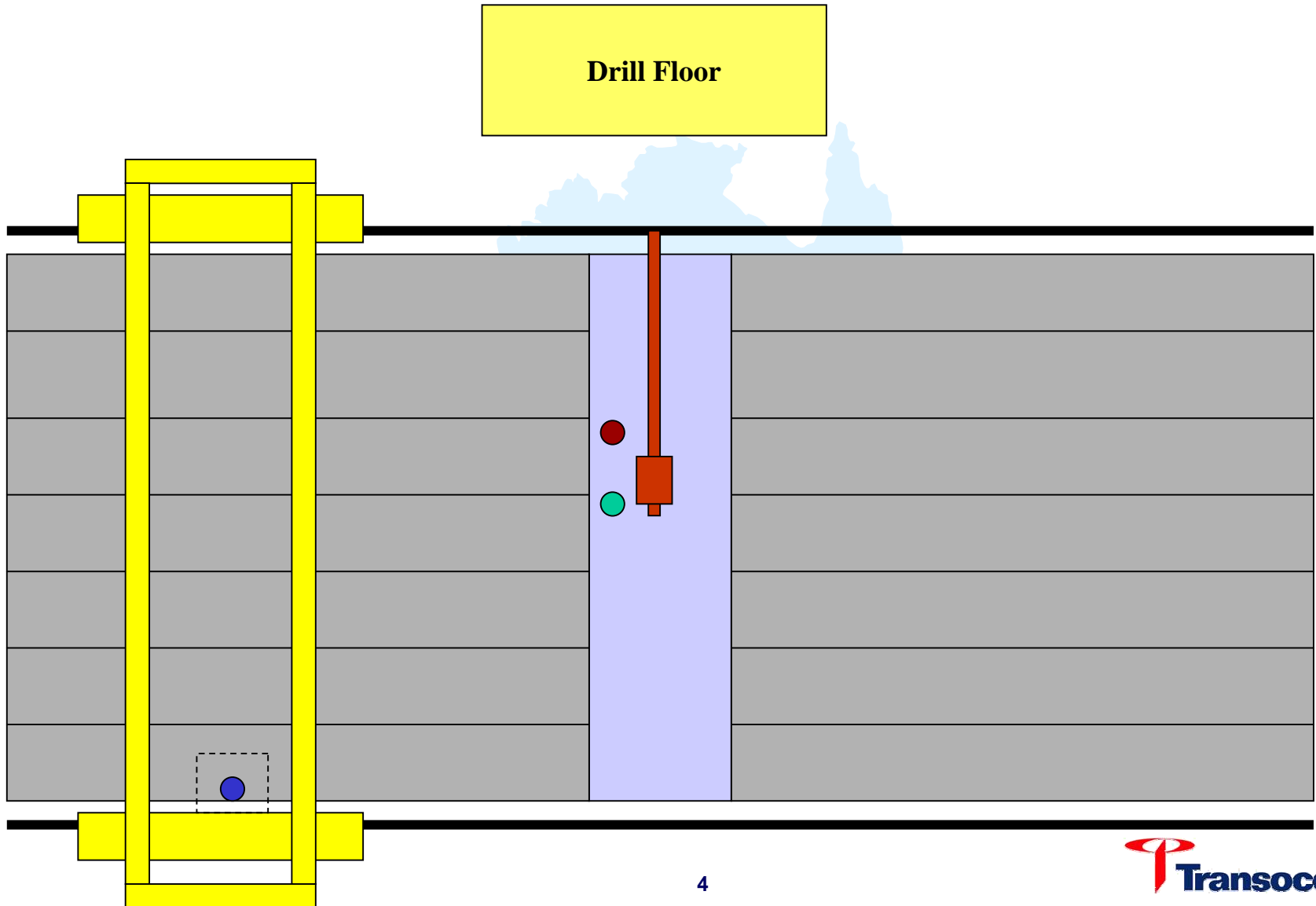
conducted by
Transocean



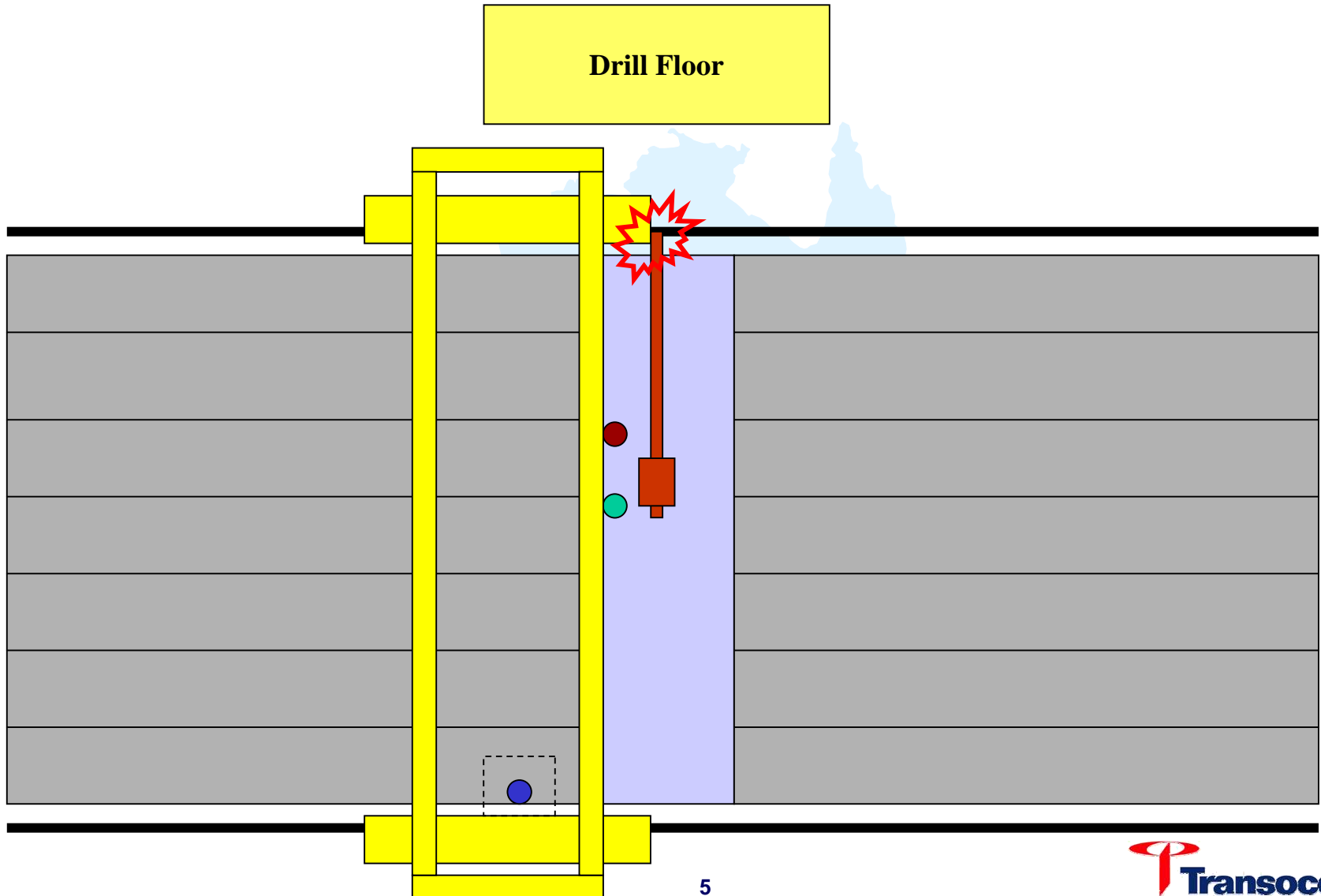
Prior to Incident



Prior to Incident



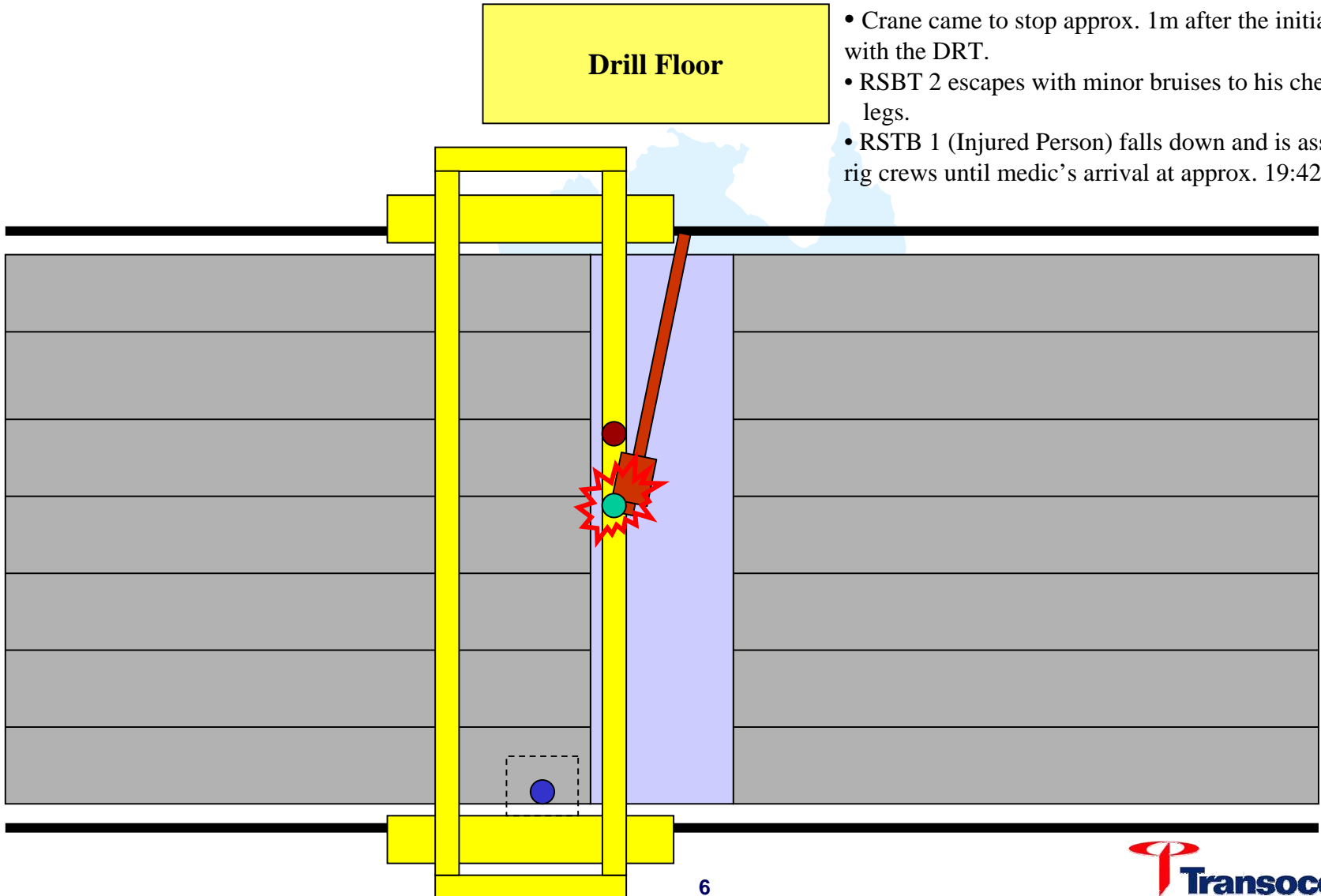
Collision Point



Roustabout was Struck by Diverter Running Tool

Drill Floor

- Crane came to stop approx. 1m after the initial collision with the DRT.
- RSBT 2 escapes with minor bruises to his chest and legs.
- RSTB 1 (Injured Person) falls down and is assisted by rig crews until medic's arrival at approx. 19:42 hrs



Investigation Photographs



Investigation Photographs



Tool position prior to impact
(securing straps not in place at the time of impact)



Tool position prior to impact

Note: The tool shown in these two photos was placed in this position during investigation

Investigation Photographs



DRT position after the impact



After the impact



Tool section that struck IP



Tool was knocked out from its mounting plate

Investigation Photographs



Sign next to the Dodge Truck



Sign on Drill Floor

Investigation

- **THINK Plan** - Filled out by Crane Operator and deck crews on 26th November 2004 at the beginning of their shift. No specific reference to DRT handling.
- **Rig Specific Procedures (RSP's) and Task Risk Assessments (TRA's) involved:**
 - RSP DRL-BOP-004 Pick Up and Install Diverter (originally issued 23-Jun-03)
 - RSP DRL-Deck Crane 005 JB – Deck Operation Use of Landel Crane (originally issued 9-May-04)
This procedure is identical to Marine procedure RSP-MAR-Deck Crane-020
 - RSP DRL – Drilling Ops – 014 – Use of Dodge Truck for handling non-tubular loads (originally issued 25-Aug-01)
 - TRA JAB-DRL-01 Move, Pick Up and Install Diverter (originally issued 23-Jun-03)
 - TRA JAB-DRL-40 Use of dodge truck with no tubulars (originally issued 24-Aug-01)
- **Diverter Running Tool (History of handling)**
 - In the past, riser elevator (750 MT) was used to handle this Diverter Running Tool.
 - Following an Incident on Nautilus in 2001, the site assessment was conducted to ensure Personnel were aware of the risk of collision. Relevant Procedures were modified to highlight the maximum allowable overhang of 2 ft 2 in.
 - Two chains (25.5in each length) were also welded at the end of Dodge truck to confirm the maximum allowable overhang. Signs were also posted (next to the Dodge Truck and on the Drill Floor next to the Dodge Truck operating Station).
 - In April 2003, a procedure was developed to use 350 MT manual elevators and a lifting sub to handle Diverter Running Tool to streamline the handling processes on the rig floor.
 - As a consequence of adding a lifting sub the DRT assembly length increased by approx. 3 ft
 - The clearance between the dodge truck and Landel crane is just over 2 ft 2in so the rig modified the procedure for handling the DRT. **This procedure called for maximum 2 ft 2 in clearance to make sure there was no clash with the Landell crane.**

Positive Findings

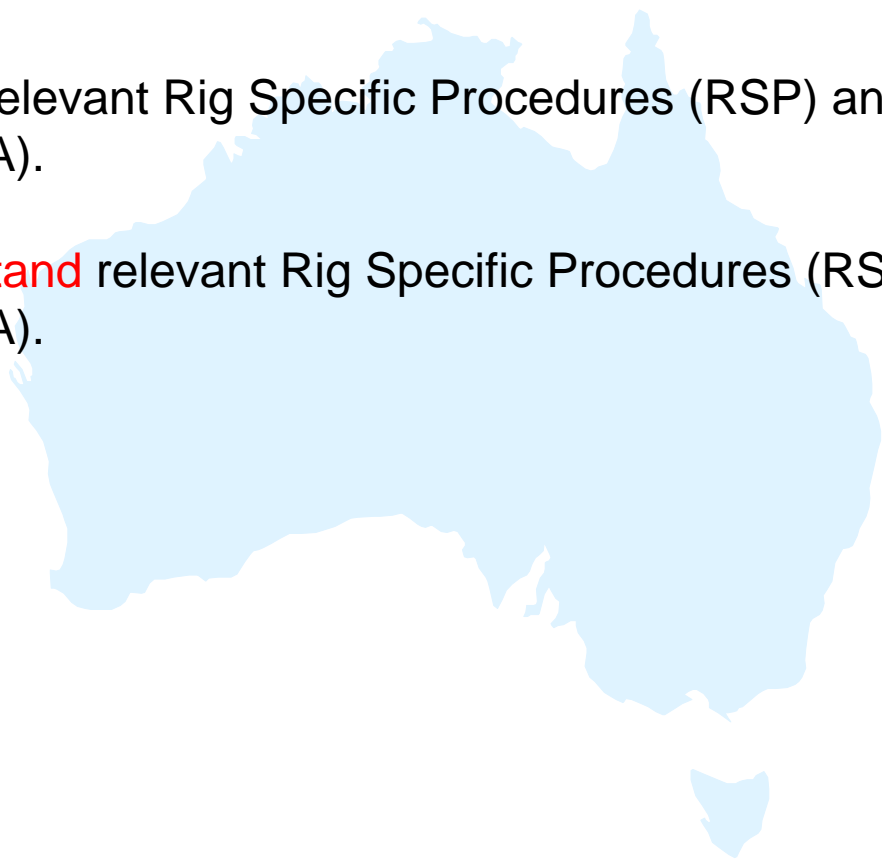
- Following 49 day dry tow, the rig was offloaded on 5th October 2004 in South Australia as per plan without delays.
- Perth Inductions organised for all new rig crews prior to rig's arrival in Australia.
- Rig Management & OSA heavily involved in recruitment and interview process involving new crews
- Competency Process in use – checklists created for Asst Drillers, Crane Operators, Asst Crane Operators, Asst Derrickmen, Derrickmen and Motormen to formalise the handover process between UK and Australian crews.
- Australian crew integration and hand over with the UK crews started in Norway during shipyard, during 1st leg of dry tow and continued afterwards. Presently ongoing. Good teamwork and handover between the UK and Australian crews.
- Strategy and Plan in place for gradual replacement of all UK crews with Australian crews. Execution of this strategy ongoing and will continue.
- Rig has numerous Rig Specific Procedures (RSP's) and Task Risk Assessments (TRA's) in place.
- Successfully run 72 joints of riser just prior to the incident on Amrit 1.

Corrective Opportunities/Actions

Corrective Opportunities

Failure to **follow** relevant Rig Specific Procedures (RSP) and Task Risk Assessment (TRA).

Failure to **understand** relevant Rig Specific Procedures (RSP) and Task Risk Assessment (TRA).



Corrective Opportunities/Actions

Corrective Actions (Cont.):

- Reinforce and communicate with ALL crews about the critical maximum allowable overhang of 2' 2".
- THINK plan will be conducted with at least one Supervisor present. Relevant RSP and TRA to be referenced in the THINK Plan as necessary.
- Relevant RSP's will be handed out to the crews at Pre-Tour Meetings for review and discussion.
- Rig Supervisor's to continue carrying out competency assessment of **new** personnel related to RSP's and TRA's. OIM to participate in competency assessments for critical tasks. Same for **long term** personnel.

Improvement Opportunities/Actions

Improvement Opportunities:

Provide a third barrier to prevent the Landel Crane contacting a tool that extends beyond the 2 ' 2" limit on the Dodge Truck.

Raise Personnel's Awareness of Hazard ID and Risk Assessment

Improvement Actions:

Install a "trip wire" system to shut the crane down, should there be anything protruding over the maximum allowable overhang while the Landel crane passes over the Dodge Truck.

The rig will continue with its scheduled START Tour involving a supervisor, a junior crewmember, and either a service company or a client personnel. The goal is to improve observation skills, risk assessment/risk identification skills.