



Making Process Safety Real: Workplace Management of Major Hazards and their Barriers within Transocean

Drillsafe Perth – 6th March 2014 – Igor Brucher

- **Originated in the downstream business**
- **Refers to the prevention of unintentional releases of chemicals, etc. from chemical processes that can have a serious effect to the plant and environment**
- **Follows the process flow through an operating plant**
- **Key focus on beyond fence-line impacts e.g. to the public**

Within Transocean Process Safety is managed under Operational Integrity

Operational Integrity is defined as:

“The management of major hazards whereby consistent operational discipline and asset integrity is assured, verified and continually improved.”



Our Values

Financial Discipline

Integrity and Honesty

Respect

Safety

Technical Leadership

Our Vision

Transocean will be universally recognized for innovation and excellence in unlocking the world's offshore resources.

- We will be our **customers'** trusted partner and their preferred solution provider.
- We will conduct our operations in an **incident-free** workplace, all the time, everywhere.
- Our **people's** passion and commitment to overcoming challenges will be our trademark.
- We will deliver outstanding **value** to our customers, our employees, and our shareholders.

Our Focus Areas

Customers

People

Execution

Our Wildly Important Goals

Operational Integrity:

Prevent major accidents by raising awareness and assuring compliance.

Operational Excellence:

Deliver budgeted revenue efficiency and continuously improve to historical levels.

Project Excellence:

Deliver planned shipyard projects within budgeted net cash impact.

Profitability:

Deliver EBITDA margins at the top end of comparable peer range.



Hydrocarbons

- a. Shallow gas
- b. Hydrocarbons in formation (well ops)
- c. Hydrocarbons in formation (coiled tubing)
- d. Hydrocarbons in subsea assets
- e. Hydrocarbons during well testing
- f. Gas cut mud

Flammable / combustible materials

Stability

Explosives

Water-tight integrity

Suspended loads

Rig moving

Station-keeping

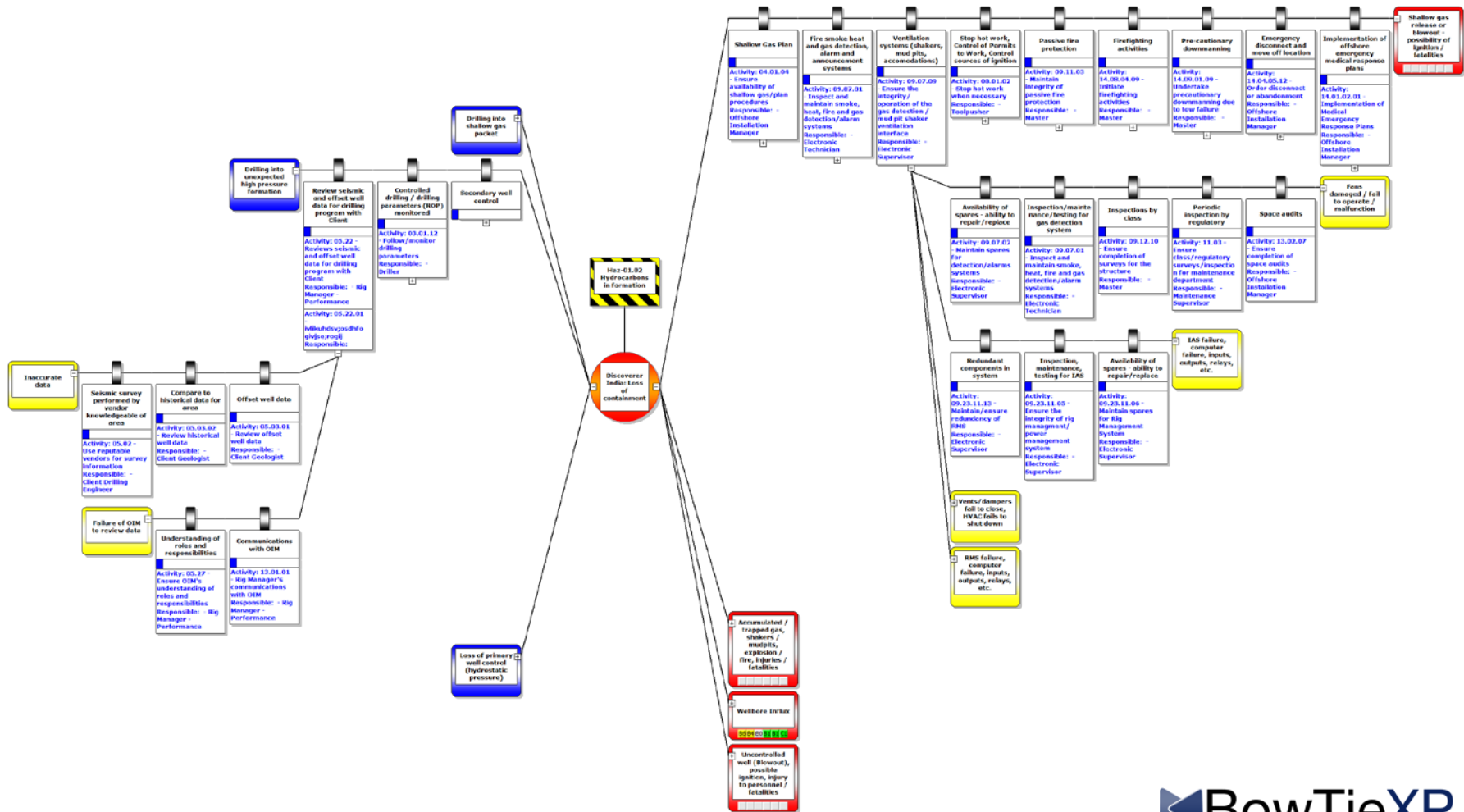
Attended platform (Jackup only)

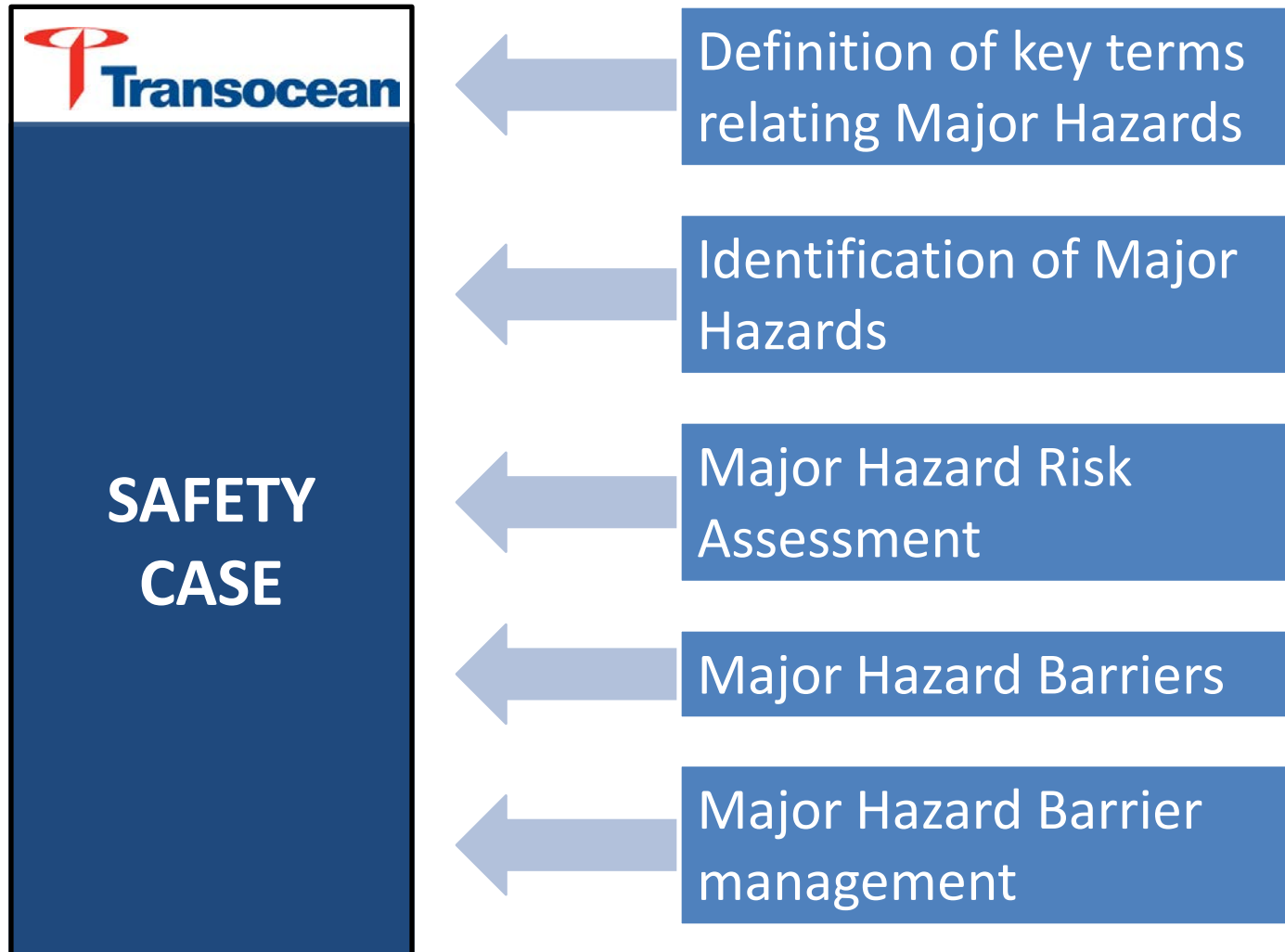
Helicopters

Structural integrity (Jackup only)

Hydrogen sulfide

Major Accident Hazard Risk Assessment





Major Hazard Barriers



People

Major Hazard People Barriers

Competent people who effectively perform Safety Critical Activities and/or take Safety Critical Actions



Plant

Major Hazard Plant Barriers

Effective Safety Critical Systems



Effective
Management
of Major
Hazards



Process

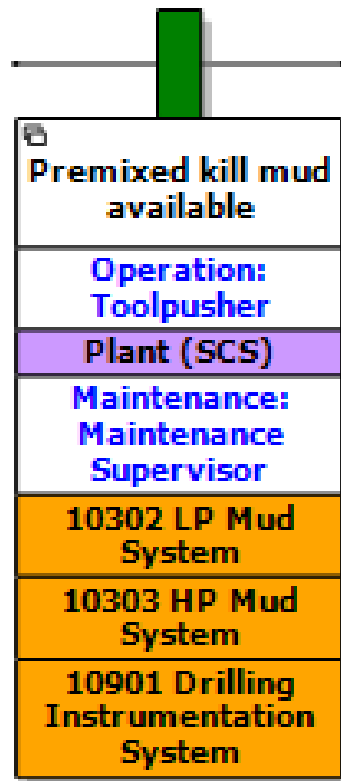
Major Hazard Process Barriers

Clear and concise Safety Critical Procedures

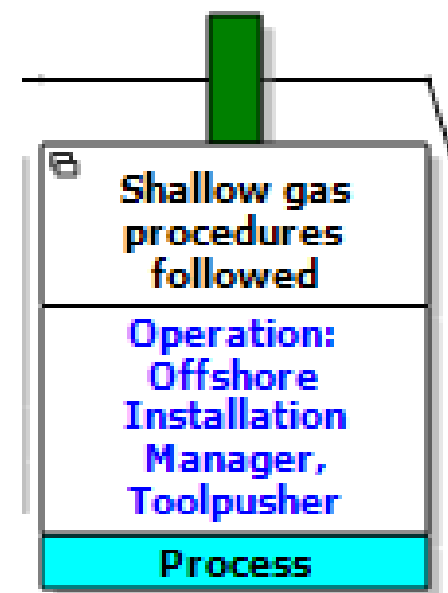
People



Plant



Process



- **People play a significant role in Barrier maintenance**
- **Human Factors are a common root cause in incident investigation**
 - **Deviation from established procedures**
 - **Poorly executed plant maintenance**
 - **Poor decision making during emergency response**
- **Resolving Human Factor failures supports Barrier maintenance**



People Barrier Maintenance

Selection, development, appraisal & succession planning

World-wide Training Matrix, On the Job Training, HSE Essentials & Excellence, Transocean Training Centers

Competency Assurance Management System

Plant Barrier Maintenance

Identification of Safety Critical Equipment / Systems

Performance Standards
Standard Planned Maintenance

Safety critical steps to be highlighted

Monitoring and assurance

Process Barrier Maintenance

Mandatory Rig Specific Procedures

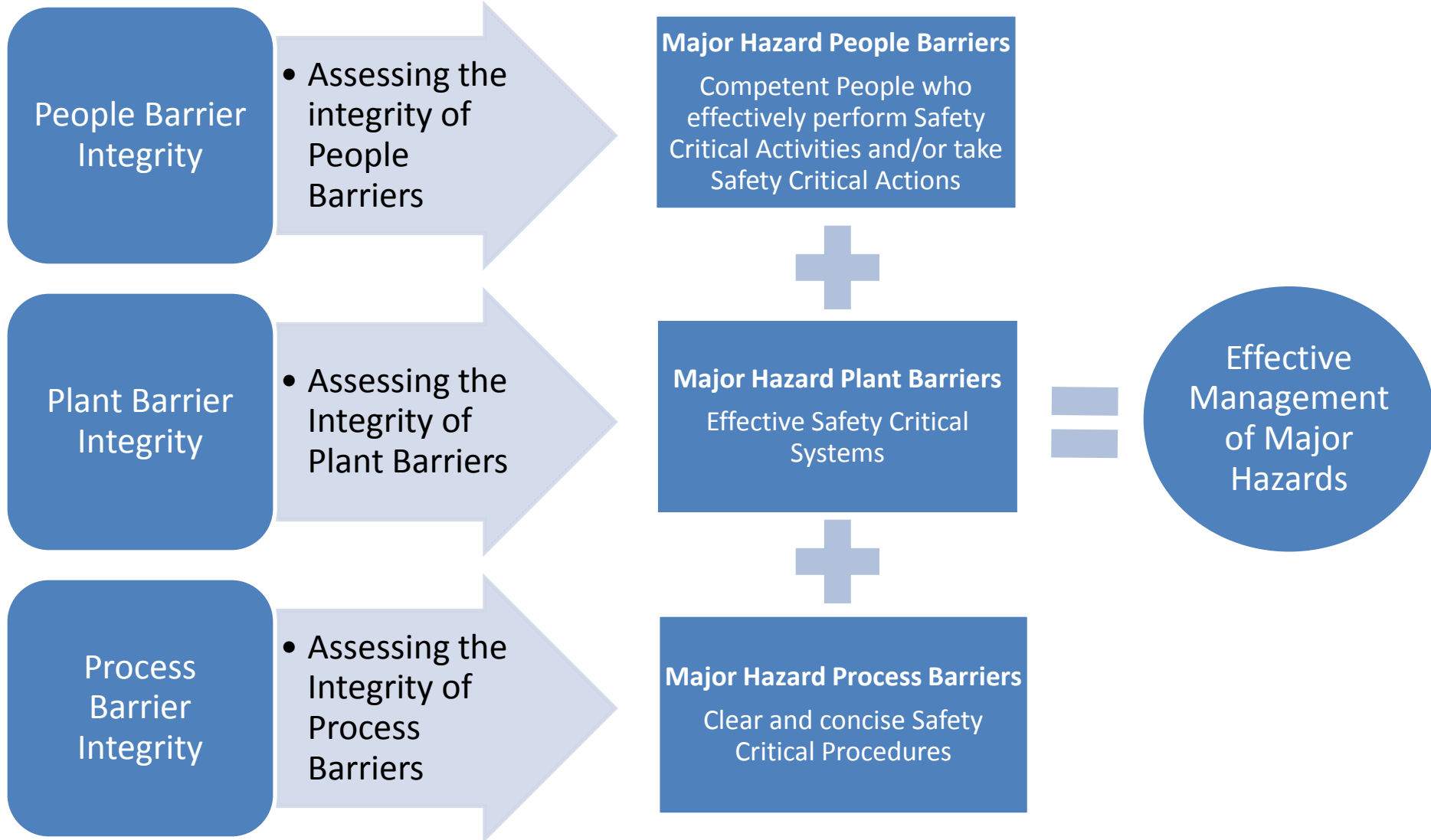
HSE Toolbox

Safety critical steps to be highlighted in Task Plans

Self / Hub verification

Management System Audit

Assuring Operational Integrity





“The management of major hazards whereby consistent operational discipline and asset integrity is assured, verified and continually improved.”