

2014 Marine Board Spring Meeting

**Offshore Oil & Gas Worker
Training and Certification
Focus Session**

J. Ford Brett, PE

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CEO – PetroSkills

Three Training & Certification Questions

1. Provide some focus on my perspective

- ‘Training’ to do what?
- What is certification?

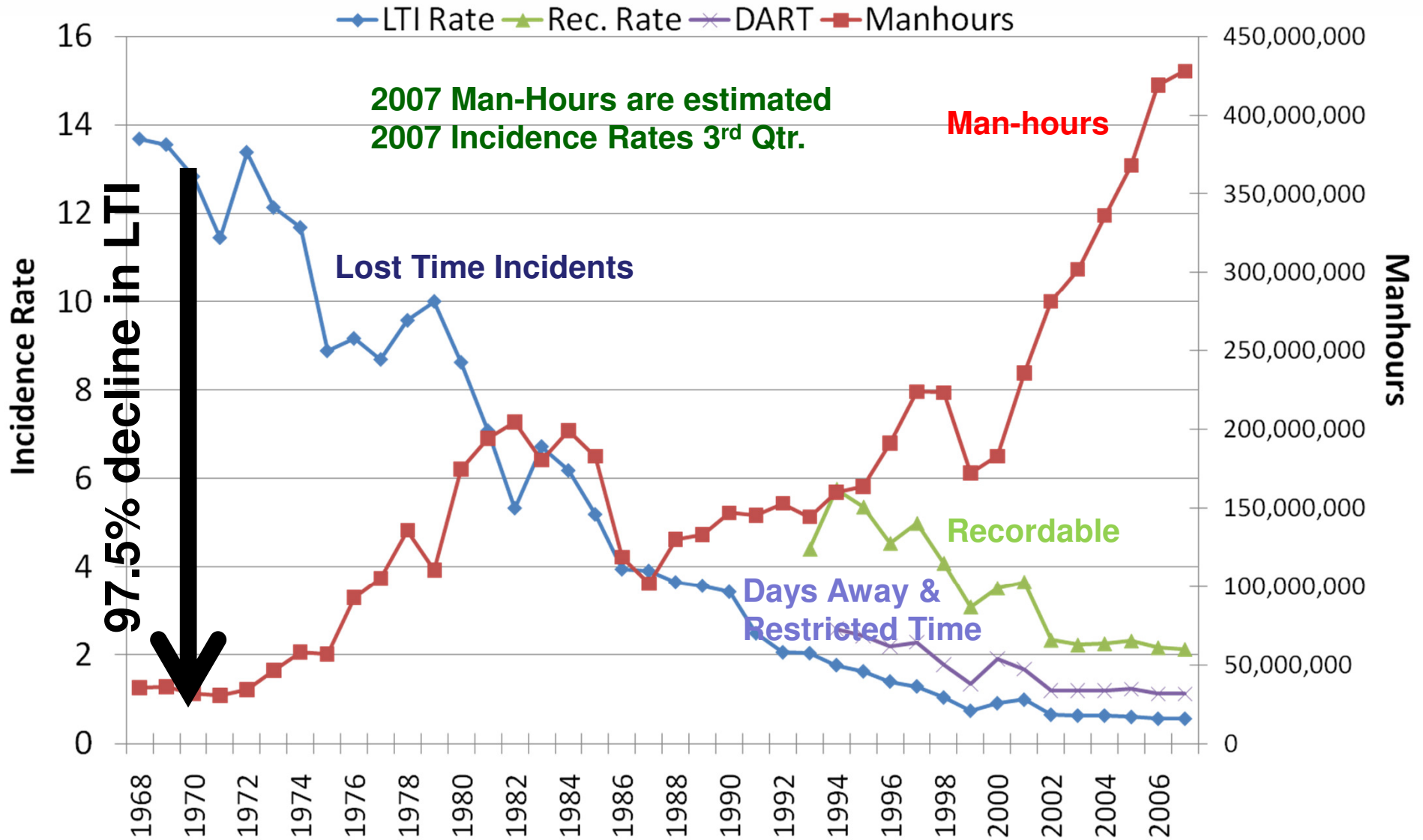
2. Answer the Specific Questions

(Short Answers)

3. Very Short Answers as Summary

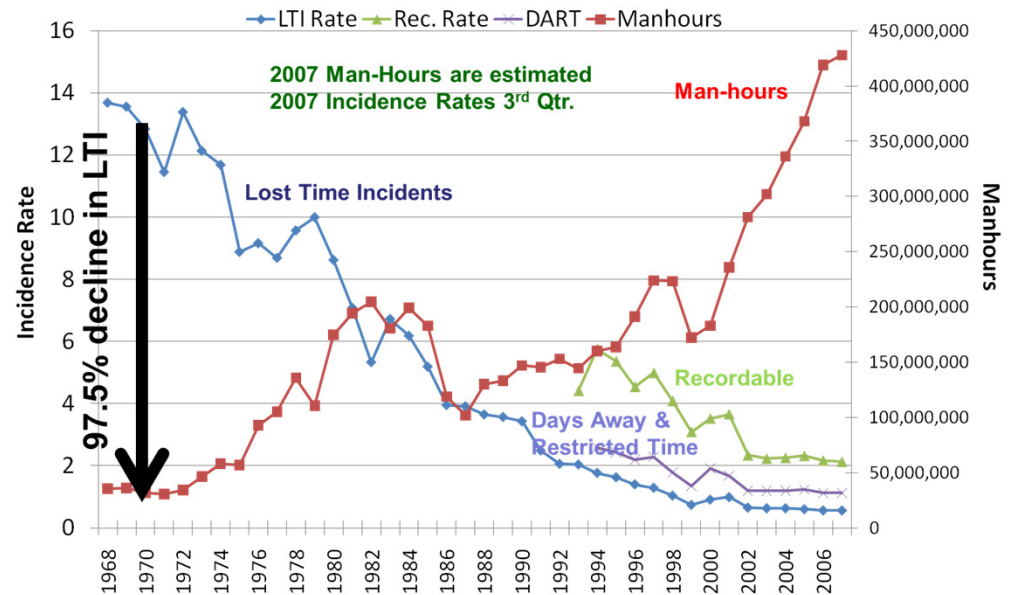
(Very, Very Short Answers)

Marked Safety Improvement Since '70's



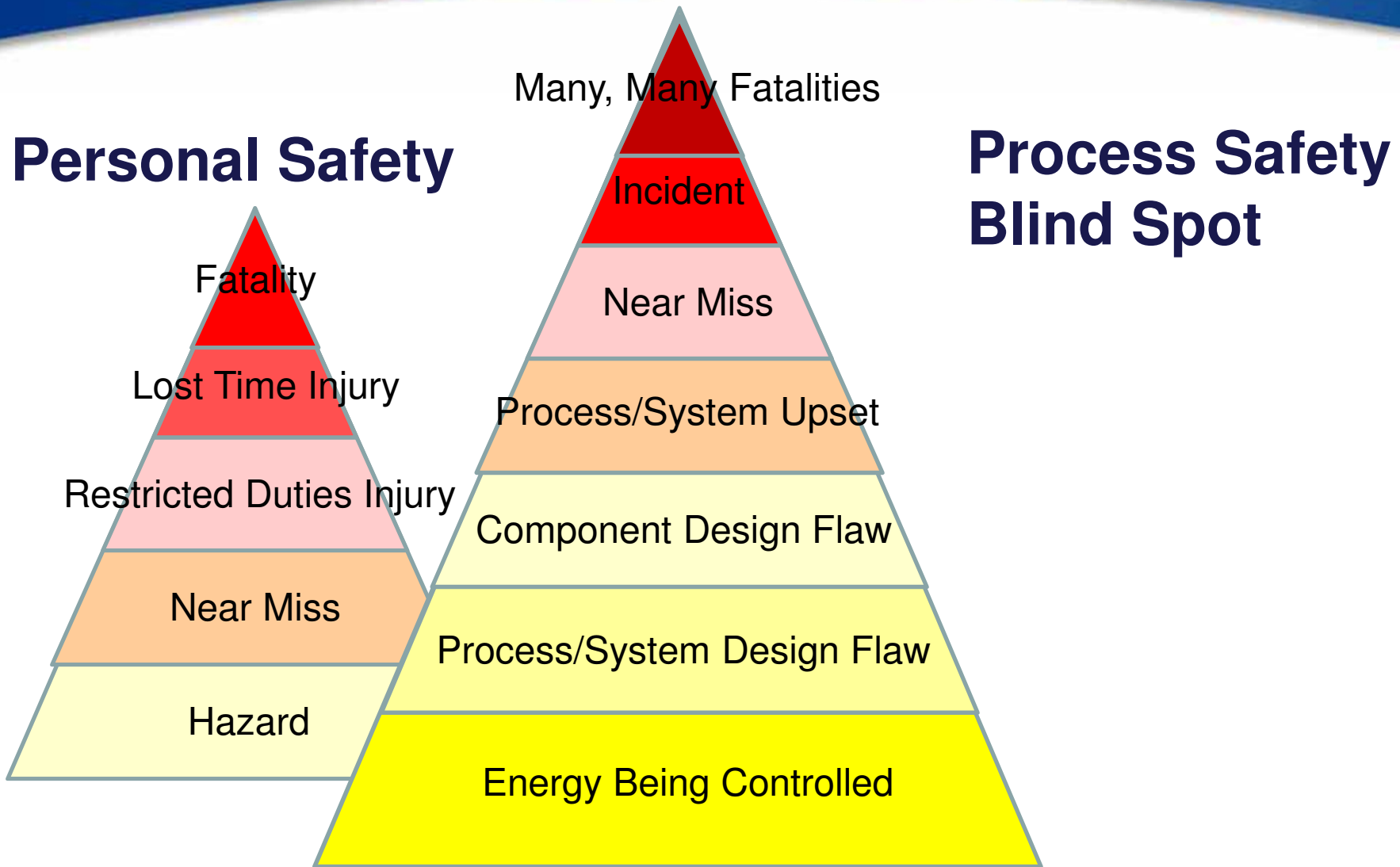
I thought we “all over” safety

- **Does Safety Management Work?**

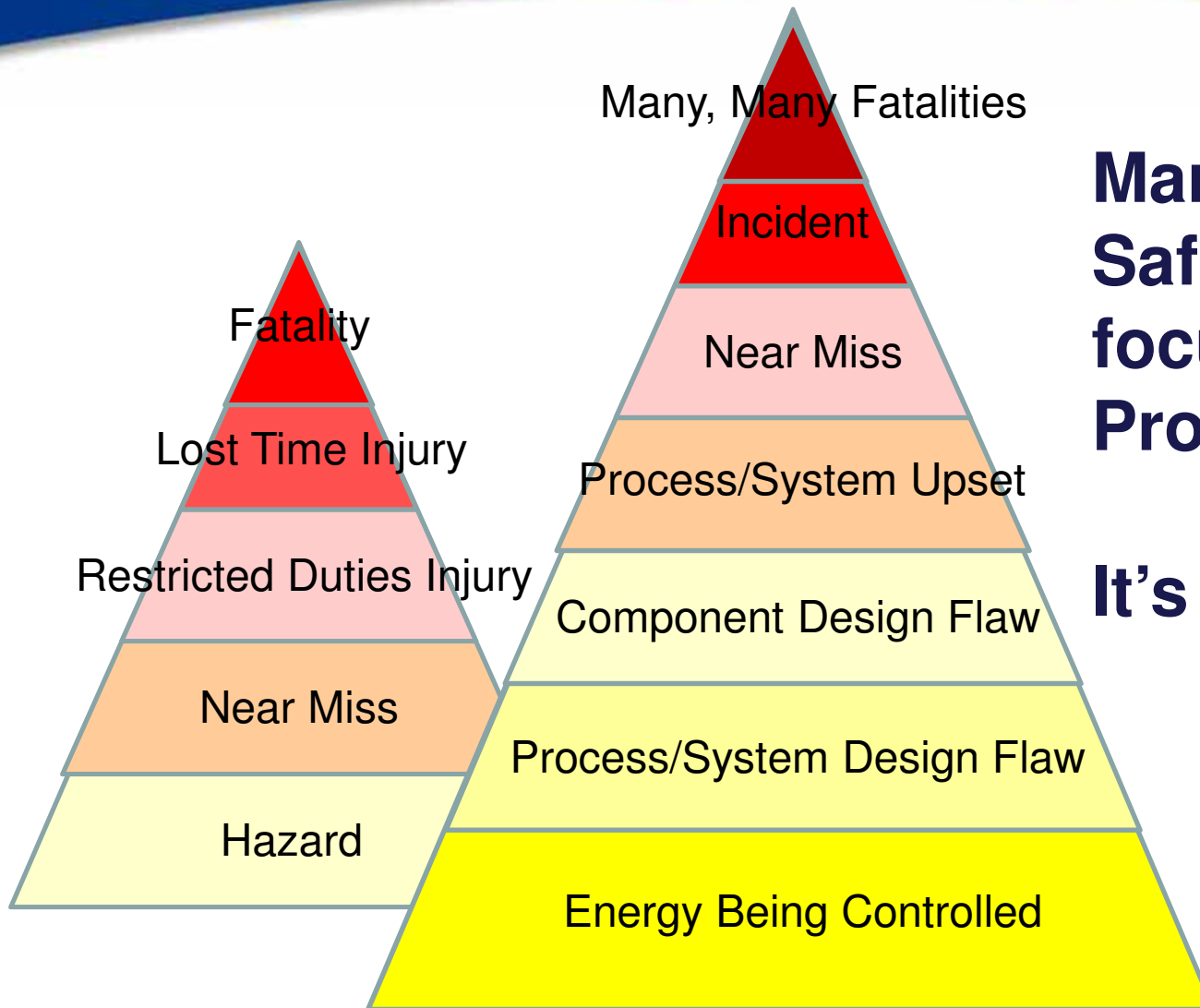


Answer: It works

If Safety Management Works, What Happened?



Process Safety Blind Spot?



Manage Process Safety with similar focus, but on Processes.

It's harder to do.

- **Mechanical**
- **System**
- **Procedural**
- **Human**

Simplified types of 'Certifiable' training

Unique

*Equipment /
Company /
Operation
Specific*

*BOP System
Configuration*

*Use of
Proprietary
Cement
Additives*

*Real time Kick
Control*

*Executing this
Well's contingency
plan*

*Exception
Reporting
Process*

*Well Design
(Casing/Cementing/Mud
Program etc)*

*Executing this
well's cement Job*

*Diagnosing
Mud Problems*

Not Unique

*Common
Foundation for
Engineering /
Operations*

Wellbore Hydraulics

*Pore Pressure /
Fracture Pressure
Theory*

*Written "standard tests"
can work here*

"Well Control School"

*Regulatory
Requirements*

Casing Design Theory

Shut in Procedure

*Operating
Generic Well
Control
Equipment*

*Situation
Awareness*

*Crew Resource
Management*

Cognitive
Knowledge

Affective
Observable

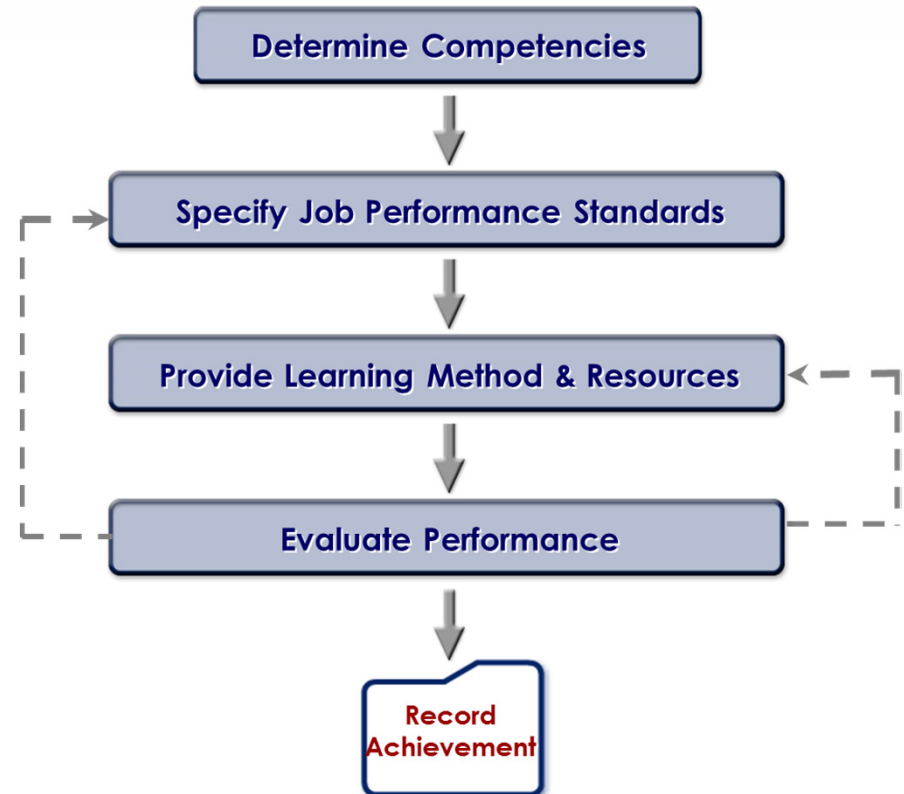
Some Drilling Examples

What is 'Certification'?

- **Certify means**: to authenticate or vouch for a thing in writing. To attest as being true or as represented.
- **Certificate means**: a written assurance, of official representation, that some act has or has not been done, or some event occurred, or some legal formality has been complied with.
- **Brett Observation**: there won't be "one written test" that will assure competency.

Q1: Current Practices

What are the current practices for A) training and B) certification of the offshore drilling workforce and C) are they adequate to assure a necessary level of safety in the industry?



Resources Include: Formal and Informal Courses, OJT, and Team Exercises

Process: Development and Assure Competence

Knowledge Assessments

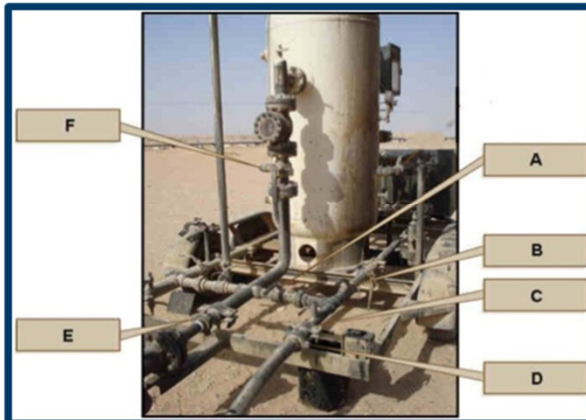
Operate Low Temperature Portable Well Test Unit
Question 6 of 9

Match the following terms with the corresponding letter in the correct location on the picture.

A Separator Bypass Valve (Closed)

B Drain Valve (Closed)

E Outlet Hose Connection



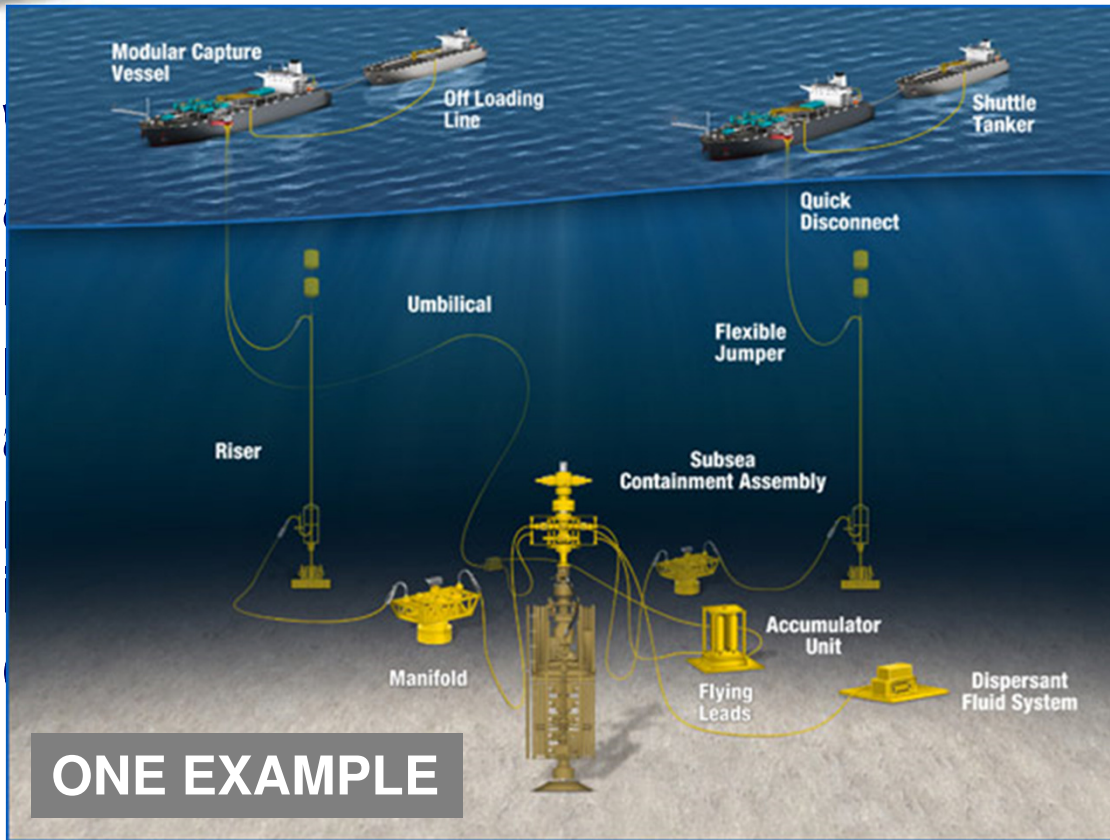
Practical on the Job (Capability sign off) Assessments

Assessor is to check the relevant boxes:		Check Relevant Boxes	Assessor Comment (also refer to Overall Assessment Record on page 1)
1. Observed carrying out activity in accordance with Company standard			
2. Additional questioning conducted by assessor			
3. Simulated the performance of the activity in accordance with Company standard			
4. Not Applicable			
Pre-Routine			
	Checked for recent repairs	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	
		1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	
	Tag identification in place - secure/ correct/ legible	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	
		1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	
Routine			
Tools, Materials and Equipment	Can explain the reasons for selecting particular tools, materials and equipment, can describe health and safety implications with regard to the use of these & can describe the actions to be taken where tools, materials and equipment are not fit for purpose.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	
Fault Diagnosis	Is able to describe/demonstrate knowledge of the various fault conditions and appropriate fault finding techniques.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	
Capability Assessment Task	Confirm PA system announcement is made, defining areas of reduced lighting during the implementation of the routine.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	
	Confirm all lighting circuits to be maintained are properly identified and that an isolation Program is prepared such that a number of emergency circuits can be switched off simultaneously without creating a hazard in the event of a prolonged power failure.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	
	Confirm Lux meter readings are carried out during egress route inspection.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	
	Confirm when each circuit to be tested is switched off that a check is made to ensure that one tube in each emergency fitting illuminates from the internal battery supply.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	

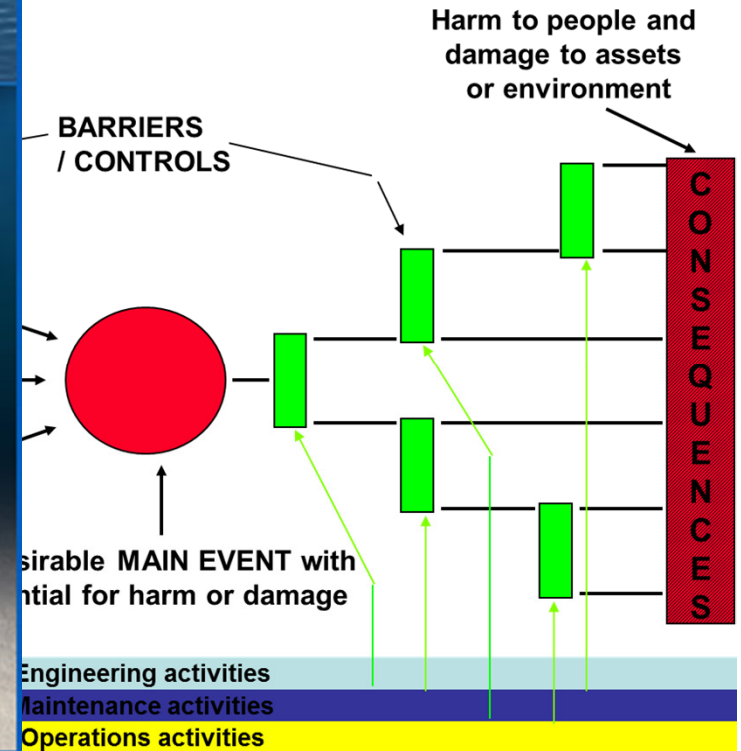
Competency Assurance Assessment: Evidence

- Experts develop, and write knowledge and practical assessments
- Formally Vetted

Q2: New Initiatives



Recover



Mechanical – System – Procedures – Human

**Training Goes here
(and is PART of the solution)**

What's been/being done Process Safety

- **Mechanical**

- BOP Equipment design
- **Capping & containment devices**

- **System**

- Onshore Monitoring centers
- BOP System Integration
- Faster Closing systems
- **Two shear rams**
- **Capping & containment systems**

- **Procedural**

- Casing design based on worst case discharge
- Float equipment / rat hole
- Tighter MOC

- More frequent BOP tests
- Improved BOP Maintenance
- **Immediate Diversion**
- **Marine Response Corporations**
- **Relief well design & planning**

- **Human**

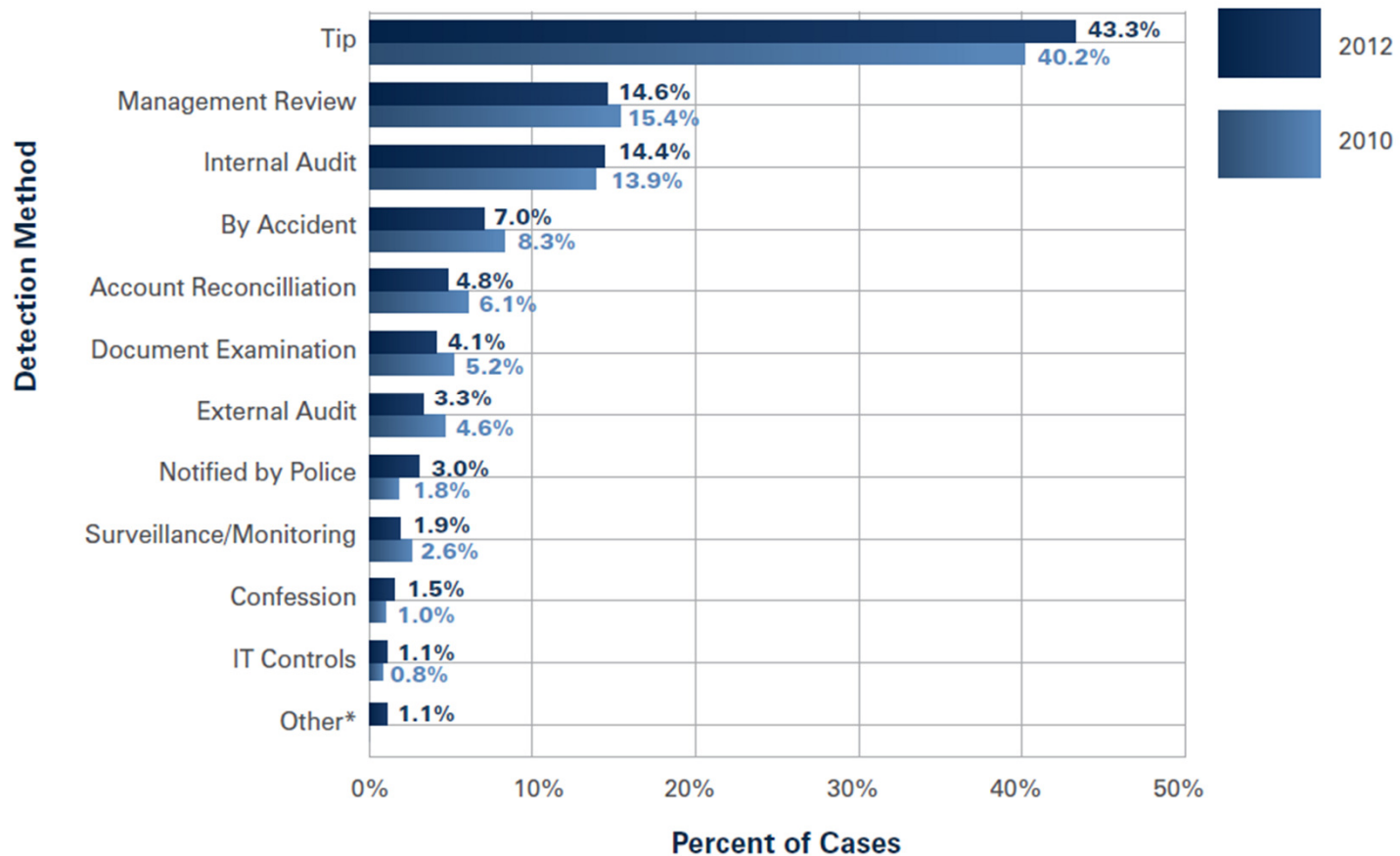
- Stop work RESPONSIBILITY
- Well Integrity competency assessments (some companies)
- Significant improvement in Service company competency systems
- Training to support Control **and Recover approaches above**

Key: Control - Recover

Q3: Role of Regulator

Observation: Internal mechanisms/behaviors are more effective than external 'checking'

Initial Detection of Occupational Frauds



Ref: Global Fraud Study ACFE 2012

The Role of the Regulator

- **Assure Safety Management Systems are effective and improve**
Make SEMS Work *
- **Take Holistic (“Systems”) approach to evaluating Industry’s Process Safety Efforts**
Mechanical-System-Procedural Human
- **Specifically for Competency: Assure Operators have an effective, and improving Competency system in place**

**** Ref: TRB Special Report 309***

Short Answers

1. What are the current practices for A) training and B) certification of the offshore drilling workforce and C) are they adequate to assure a necessary level of safety in the industry?
 - A) *Training: Formal classroom and individual or team OJT; May be systematic or ad hoc*
 - B) *Internal Certifications: Service companies, Operators, Drilling Contractors Role specific requirements*
3rd Party Certifications: IADC WellCAP, PE exam, OSHA, SEMS Audits
 - C) *Properly performed they can be effective, continuous improvements are ongoing*
2. What new initiatives are underway within industry organizations to A) improve these practices and B) address safety problems and improved worker competency needs?
 - A) *IADC/COS/Internal company (Op, Drilling Contractor, Service Co) efforts*
 - B) *Many process safety actions – take people out of loop...*
3. What is the role of federal regulators regarding this issue to assure A) that worker competency meets minimum standards and B) the certification process is accurate and comprehensive?
 - A) *Large – assure that Operators have competency systems that certify compliance with standards for positions.*
 - B) *NOT Large - Work with industry bodies to help create*

