



Air Compressor Incident during Well Test Preparation onboard Atwood Eagle


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Well Testing Services

Schlumberger

Summary



Location:	Atwood Eagle
Date of Incident:	1 st Sept 2005
Time of Incident:	11:30 hours
Injured Party:	Wireline Operator
Injury:	1 st and 2 nd degree burns to left arm
Result:	Restricted workday case, no permanent illness or injury

Incident Description

A wireline operator who was assisting the 3rd Party compressor Operator on one of the air compressors received 1st degree (5%), and 2nd degree (1%) burns on his left arm when the compressor oil splashed out from the butterfly valve behind the compressor's opened air filter housing. First aid was administered by the medic.

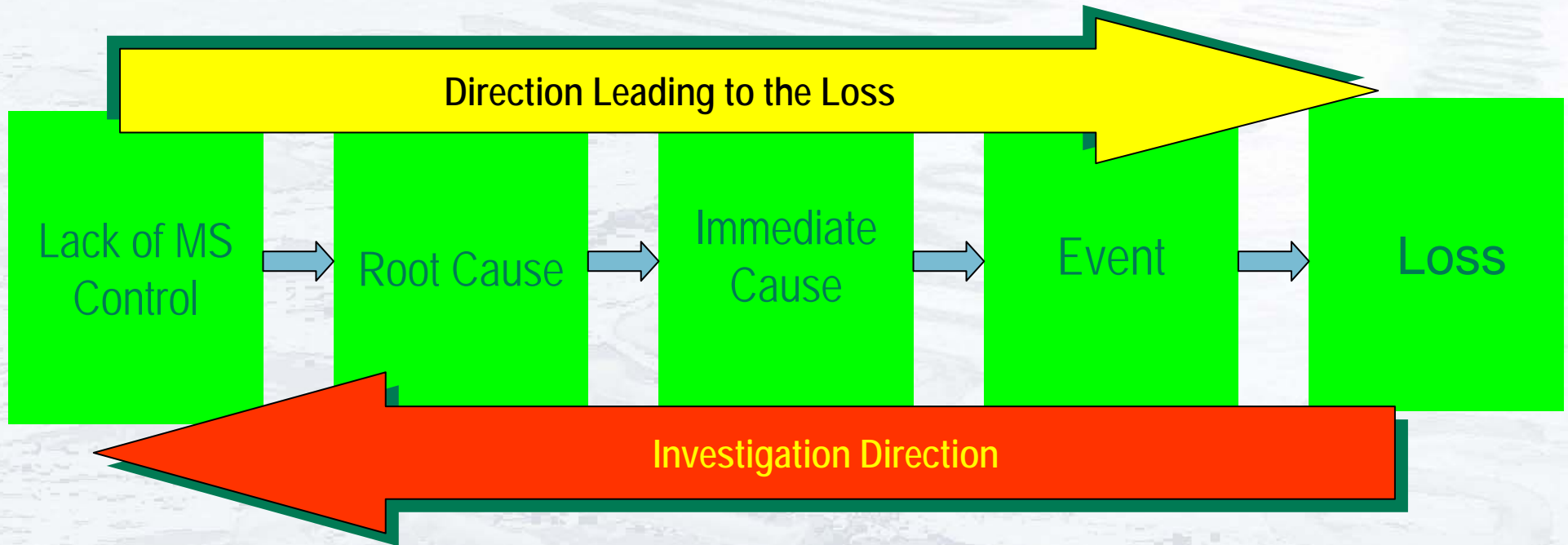
Location of Incident



Wireline helper

Compressor Op

Loss Causation Model



Loss

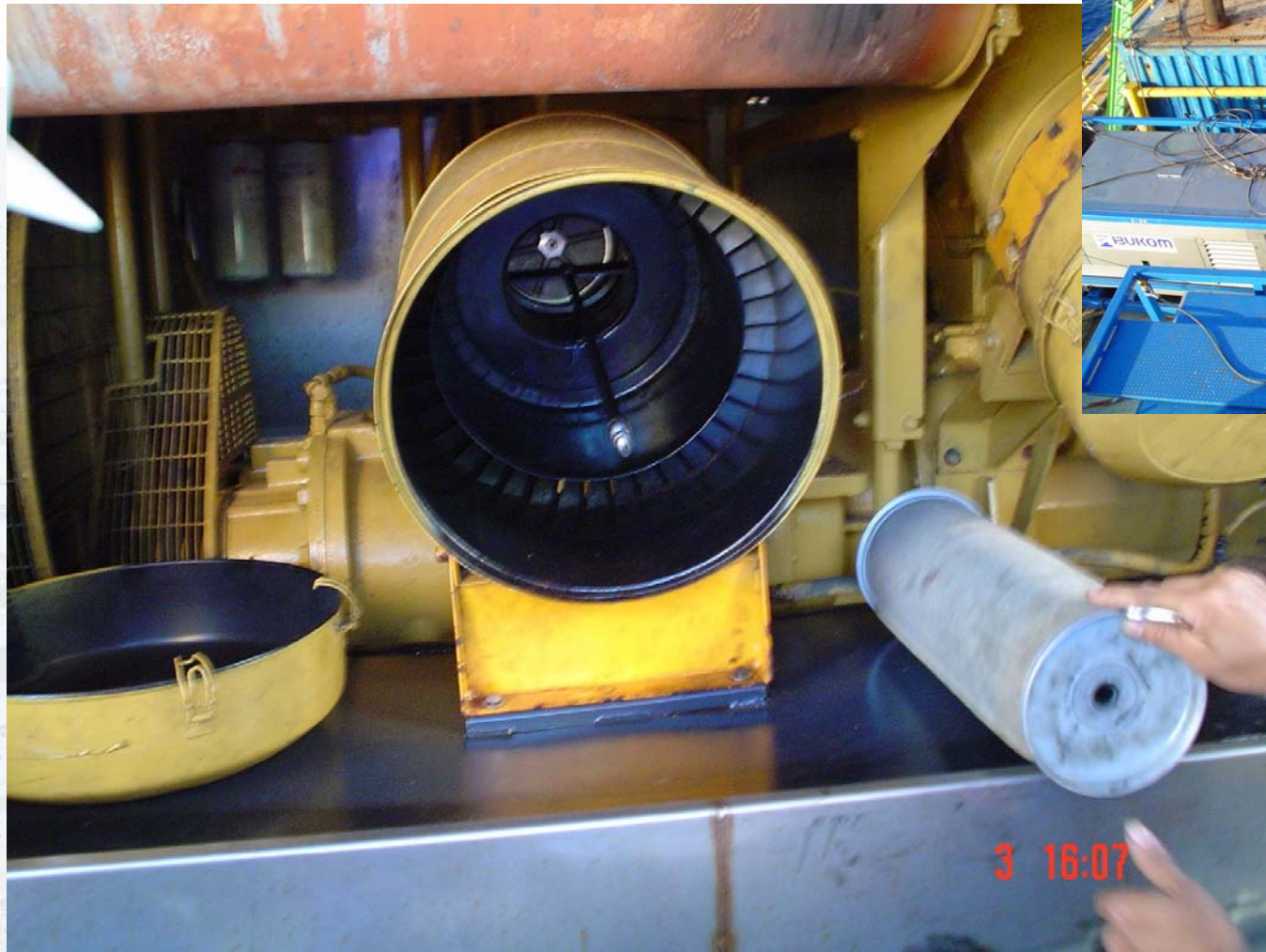


5 Restricted workdays

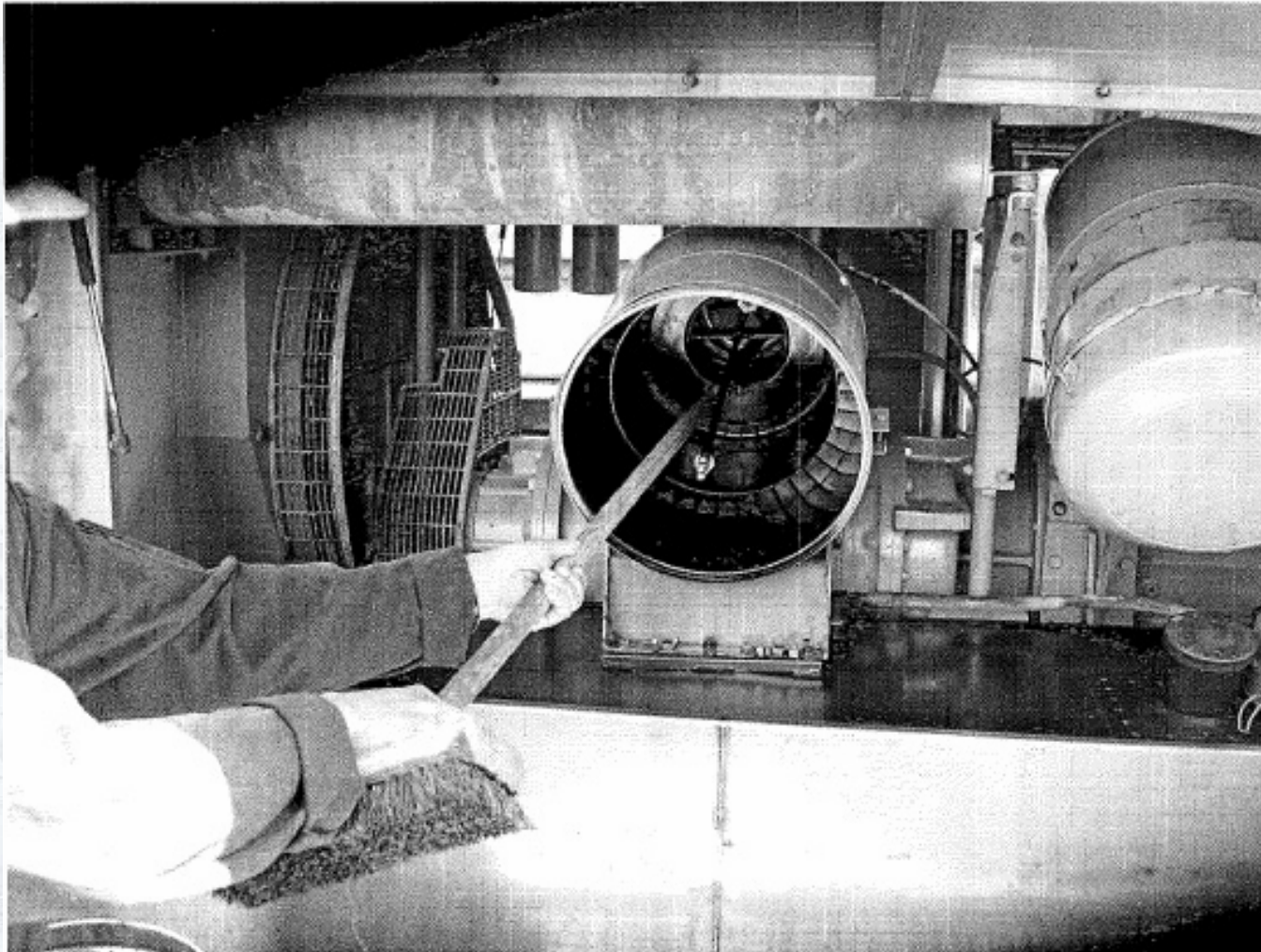


- 5% 1st Degree burns
- 1% 2nd Degree burns

Event – Air filter housing with filter removed



Event – Broom handle used by helper to jam butterfly valve open. Compressor Operator could not see helper



Immediate Causes

- Substandard Acts and/or Conditions



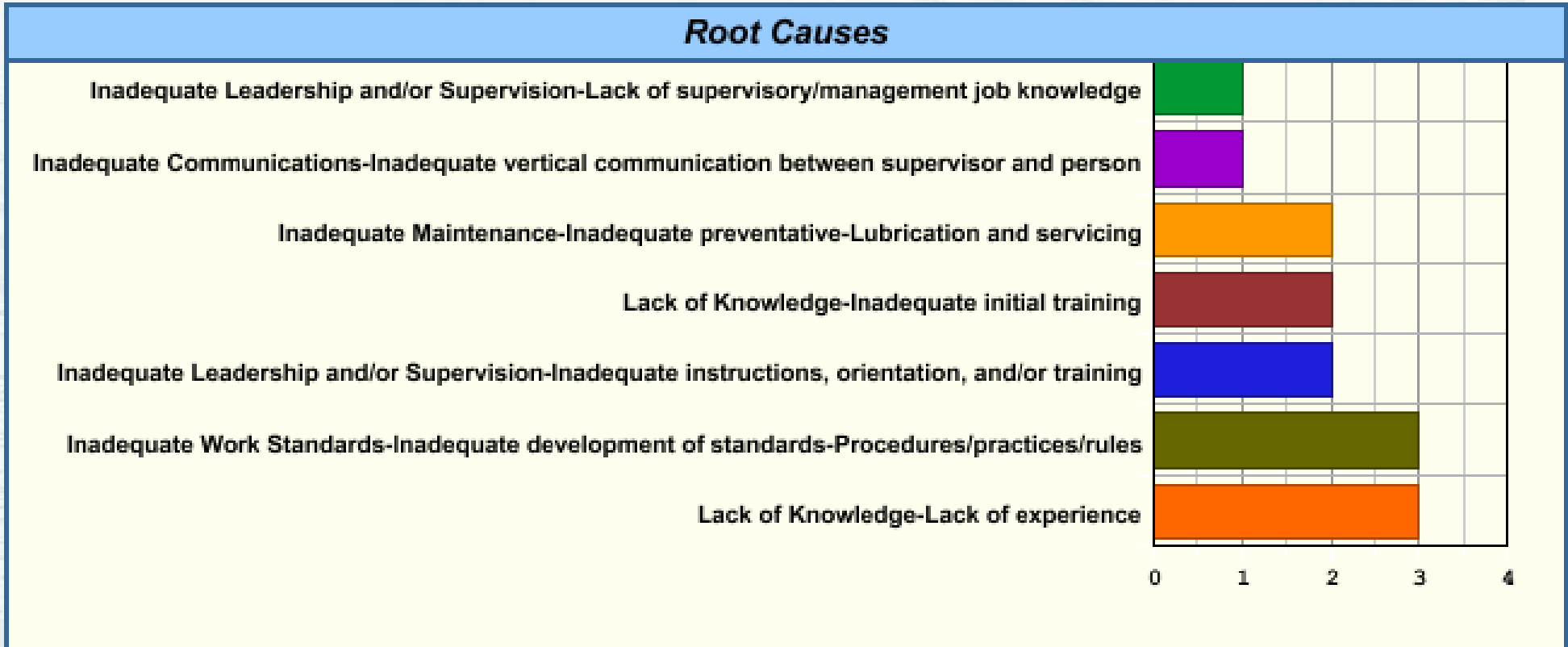
Immediate Causes			
Loss #	Event #	Immediate Cause #	Immediate Cause
1	1.1	1.1.1	Operating Equipment Without Authority Assisting SLB 3rd Party Contractor with Compressor
1	1.1	1.1.2	Improper Position for Task Not correct failure analysis procedure used
1	1.1	1.1.3	Failure to Follow Procedure/Policy/Practice Inadequate procedures available
1	1.1	1.1.4	Failure to Identify Hazard/Risk Didn't understand outcome if Compressor shut down
1	1.1	1.1.5	Presence of Harmful Materials Hot Oil
1	1.1	1.1.6	Inadequate Instructions / Procedures None available, relying on experience of Operator
1	1.1	1.1.7	Inadequate Support / Assistance Should have had a more experienced operator onboard

Root Causes

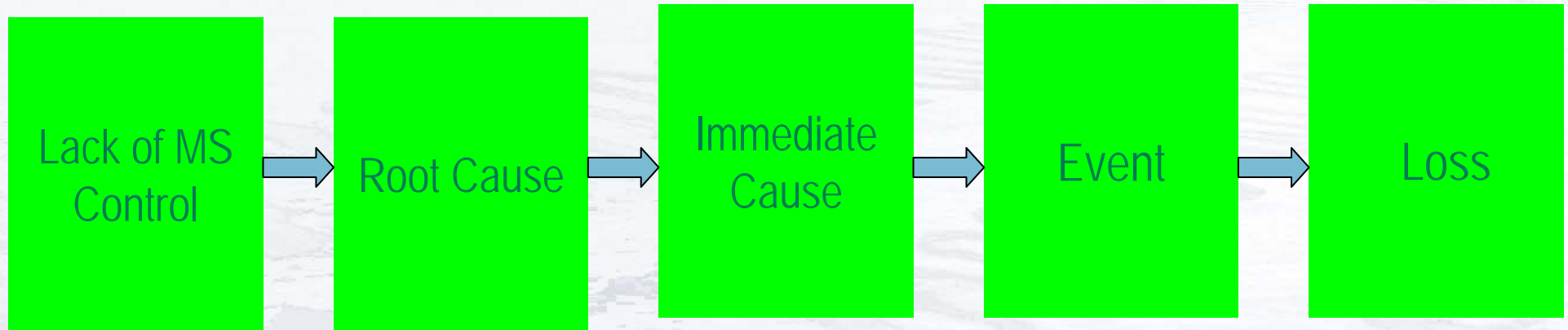
- Personal and/or Job Factors

Root Causes				
Loss #	Event #	Immediate Cause #	Root Cause #	Root Cause
1	1.1	1.1.1	1.1.1.1	Lack of Knowledge - Lack of experience - Not familiar with equipment
1	1.1	1.1.1	1.1.1.2	Inadequate Maintenance - Inadequate preventative - Lubrication and servicing - Compressor wasn't run under load which would have identified the problem
1	1.1	1.1.1	1.1.1.3	Inadequate Work Standards - Inadequate development of standards - Procedures/practices/rules - No procedure available on rig
1	1.1	1.1.1	1.1.1.4	Inadequate Communications - Inadequate vertical communication between supervisor and person - No explanation of what might happen
1	1.1	1.1.2	1.1.2.1	Inadequate Leadership and/or Supervision - Inadequate instructions, orientation, and/or training - No explanation of what might happen if Compressor shut down
1	1.1	1.1.3	1.1.3.1	Lack of Knowledge - Lack of experience - Not aware of consequences
1	1.1	1.1.3	1.1.3.2	Lack of Knowledge - Inadequate initial training - Appeared to lack training in fault finding
1	1.1	1.1.3	1.1.3.3	Inadequate Work Standards - Inadequate development of standards - Procedures/practices/rules - Not available at wellsite
1	1.1	1.1.4	1.1.4.1	Lack of Knowledge - Lack of experience - Not aware of consequences and correct procedures for fault finding
1	1.1	1.1.4	1.1.4.2	Lack of Knowledge - Inadequate initial training - 3rd Party could not demonstrate his training record
1	1.1	1.1.5	1.1.5.1	Inadequate Maintenance - Inadequate preventative - Lubrication and servicing - Needed to have been tested under load prior to coming to rig
1	1.1	1.1.6	1.1.6.1	Inadequate Work Standards - Inadequate development of standards - Procedures/practices/rules - No procedures available at wellsite
1	1.1	1.1.7	1.1.7.1	Inadequate Leadership and/or Supervision - Inadequate instructions, orientation, and/or training - No information on rig on fault finding for Compressor
1	1.1	1.1.7	1.1.7.2	Inadequate Leadership and/or Supervision - Lack of supervisory/management job knowledge - Not enough in depth fault finding training

Root Causes (con't)



Loss Causation Model



???

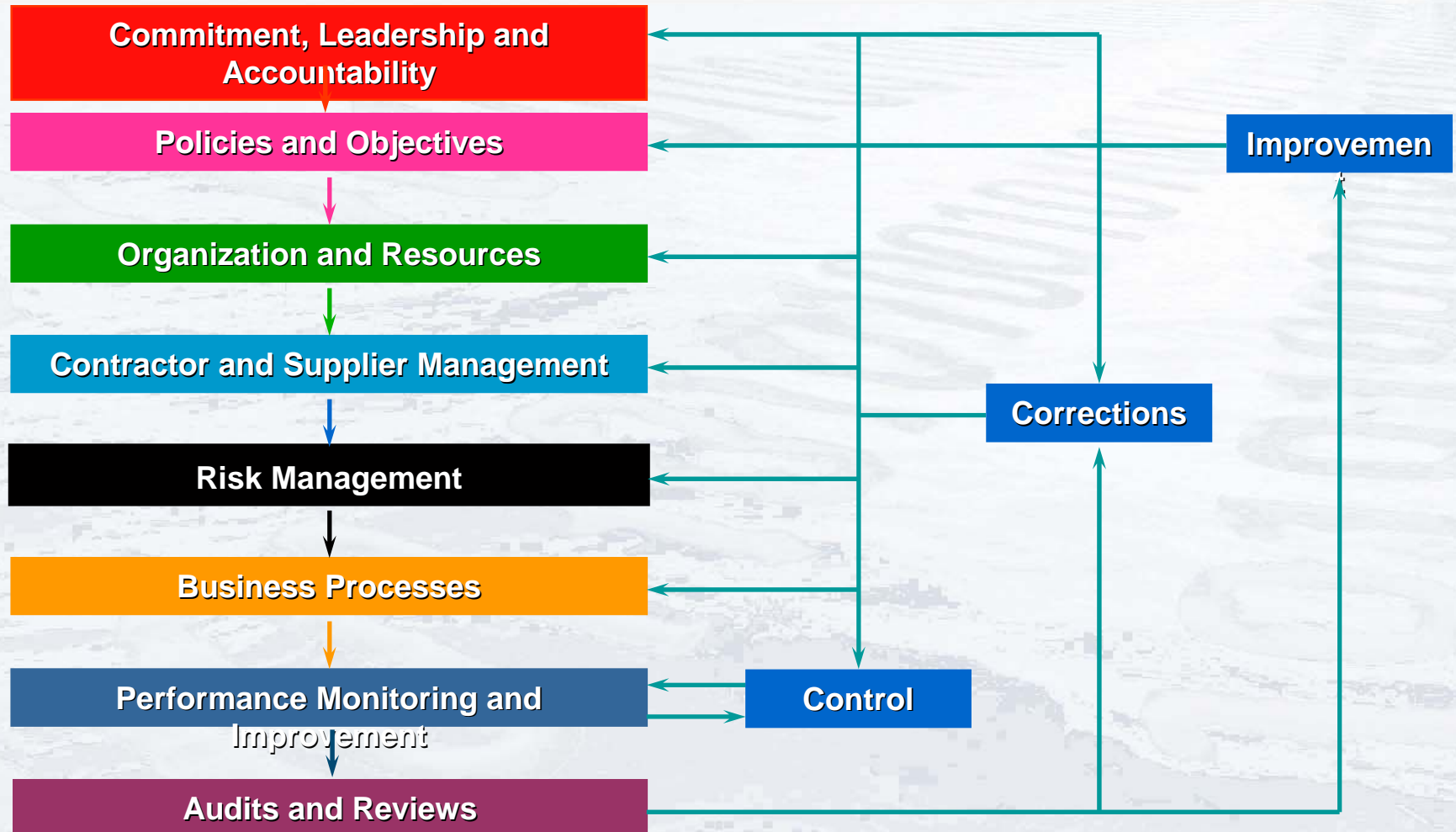
Lack of experience, Inadequate procedures...

Procedures, Failure to identify hazard, improper position

Contact with hot oil

LOSS:
Burns to left arm

QHSE Management System



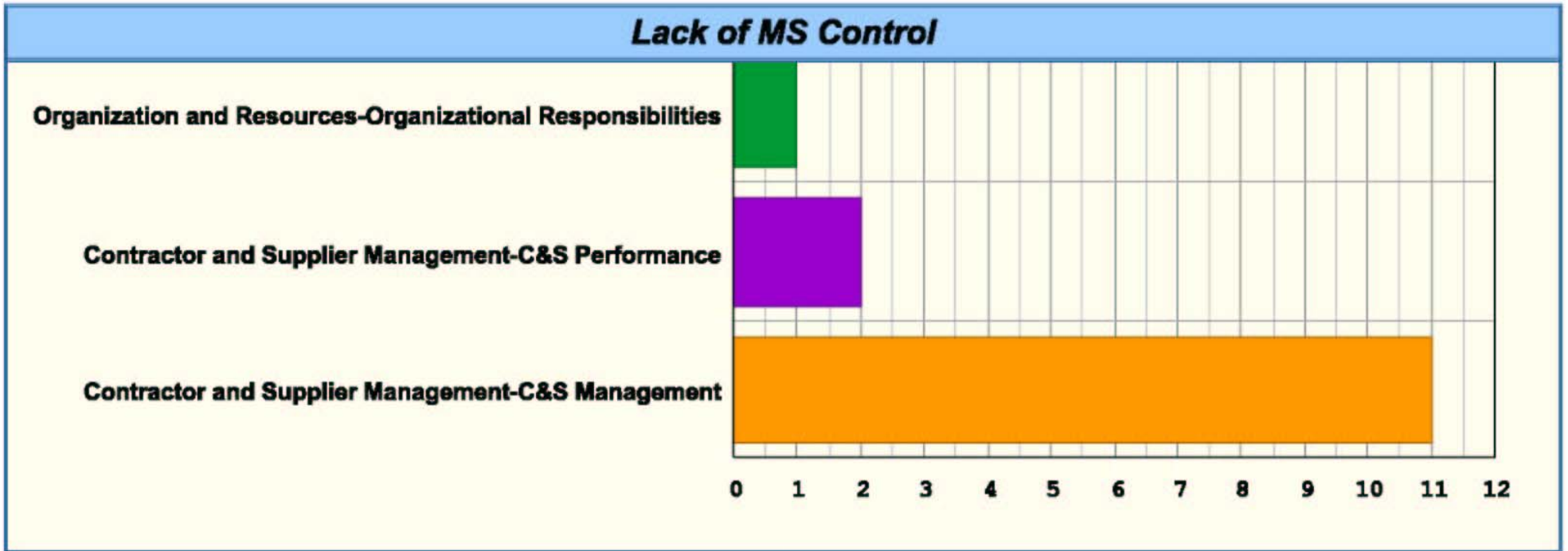
Lack of MS Control

- 8 Elements of the QHSE Management System

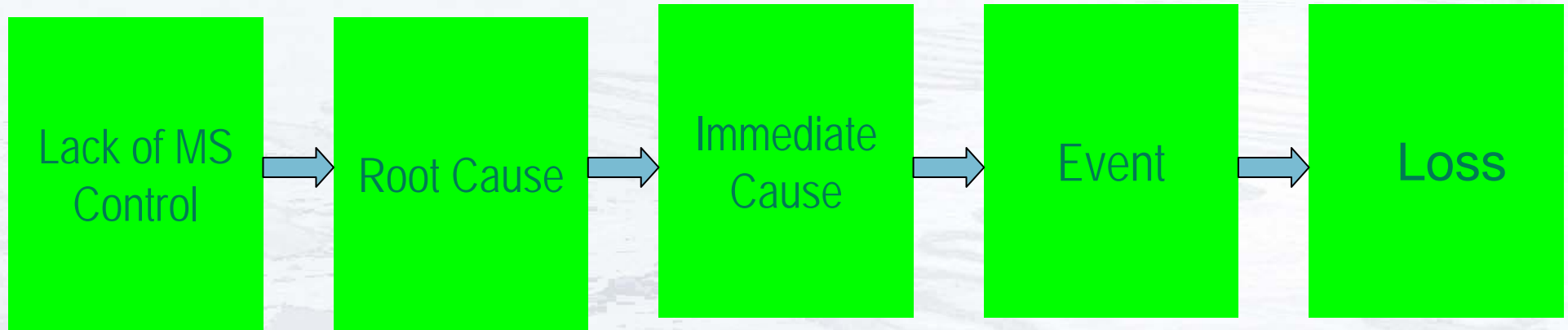


Lack of Management System Control					
Loss #	Event #	Immediate Cause #	Root Cause #	Lack of MS Control #	Lack Of MS Control
1	1.1	1.1.1	1.1.1.1	1.1.1.1.1	Organization and Resources - Organizational Responsibilities - Performing task not trained or required to do
1	1.1	1.1.1	1.1.1.2	1.1.1.2.1	Contractor and Supplier Management - C&S Performance - Resource constrained due to high activity
1	1.1	1.1.1	1.1.1.3	1.1.1.3.1	Contractor and Supplier Management - C&S Performance - No procedures available on rig
1	1.1	1.1.1	1.1.1.4	1.1.1.4.1	Contractor and Supplier Management - C&S Management - Inadequate experienced resource on rig at the time
1	1.1	1.1.2	1.1.2.1	1.1.2.1.1	Contractor and Supplier Management - C&S Management - No instructions onboard and inexperienced operator
1	1.1	1.1.3	1.1.3.1	1.1.3.1.1	Contractor and Supplier Management - C&S Management - No competence assessment prior to individual going offshore
1	1.1	1.1.3	1.1.3.2	1.1.3.2.1	Contractor and Supplier Management - C&S Management - Lack of competency assessment for task
1	1.1	1.1.3	1.1.3.3	1.1.3.3.1	Contractor and Supplier Management - C&S Management - No procedures at wellsite
1	1.1	1.1.4	1.1.4.1	1.1.4.1.1	Contractor and Supplier Management - C&S Management - No competency assessment done
1	1.1	1.1.4	1.1.4.2	1.1.4.2.1	Contractor and Supplier Management - C&S Management - No competency assessment done
1	1.1	1.1.5	1.1.5.1	1.1.5.1.1	Contractor and Supplier Management - C&S Management - Inadequate procedures or procedures not followed
1	1.1	1.1.6	1.1.6.1	1.1.6.1.1	Contractor and Supplier Management - C&S Management - Procedures not available
1	1.1	1.1.7	1.1.7.1	1.1.7.1.1	Contractor and Supplier Management - C&S Management - No procedures at wellsite
1	1.1	1.1.7	1.1.7.2	1.1.7.2.1	Contractor and Supplier Management - C&S Management - Lack of competency assessment

Lack of MS Control (con't)



Loss Causation Model



Contractor/
Supplier
Mngmt

Lack of
experience,
Inadequate
procedures...

Procedures,
Failure to
identify
hazard,
improper
position

Contact with
hot oil

INJURY:
Burns to left
arm

Remedial Work Plan



Remedial Work Plan						
Item Type	RA #	Action Description	Responsibility	Priority	Target Date	Close Date
UnAttached	1	Schedule medical with Slb doctor	Sidney Sharon	Medium	9/6/2005	9/8/2005
UnAttached	2	Schedule follow up medical - 8th Sept	Sidney Sharon	Medium	9/8/2005	9/9/2005
UnAttached	3	Medical visit in Broome	Sidney Sharon	Medium	9/3/2005	9/8/2005
UnAttached	4	Attend medic clinic on rig for burn treatment	Iroth Ruben	Medium	9/1/2005	9/1/2005
UnAttached	5	Audit of Maintenance procedures	Daryanto Tri	Medium	11/26/2005	11/30/2005
UnAttached	6	Assessment of Bukom Competency of Field Specialists	Daryanto Tri	Medium	11/26/2005	11/30/2005
UnAttached	7	Develop Kpi's with Bukom to monitor performance	Daryanto Tri	Medium	11/26/2005	11/30/2005
UnAttached	8	Bukom Operating procedures	Daryanto Tri	Medium	12/10/2005	12/15/2005
UnAttached	9	Contact Bukom regarding incident on Atwood eagle	Vigor Andy	Medium	11/5/2005	11/16/2005
UnAttached	10	Bukom as part of Well Test team	Gibb Derek	Medium	10/20/2005	11/3/2005
UnAttached	11	Review audits of high risk contractors	Daryanto Tri	Medium	2/28/2006	2/21/2006
UnAttached	12	Awareness to Slb employees prevent re-occurrence	Vigor Andy	Medium	10/25/2005	10/25/2005

Key Action Items



- Audit of Supplier facilities
- Kpi's developed and agreed
- Competency assessment of personnel
- Audit of supplier on rig
- More open communication related to upcoming activity
- Awareness through Safety Meetings to prevent reoccurrence
- Review all key suppliers to ensure similar Contractor Management controls are in place