



# **APR Business Unit**

## **ENSCO 84**

# **Incident Investigation Report**

**Synergi Case No. 3230**

**FAC – P4.CR3 - Level 2**

**Floor man Caught between pull line and make up  
tong**

**20th-Mar-08**



# ENSCO 84 Incident Investigation Report

## Description of Unplanned Event

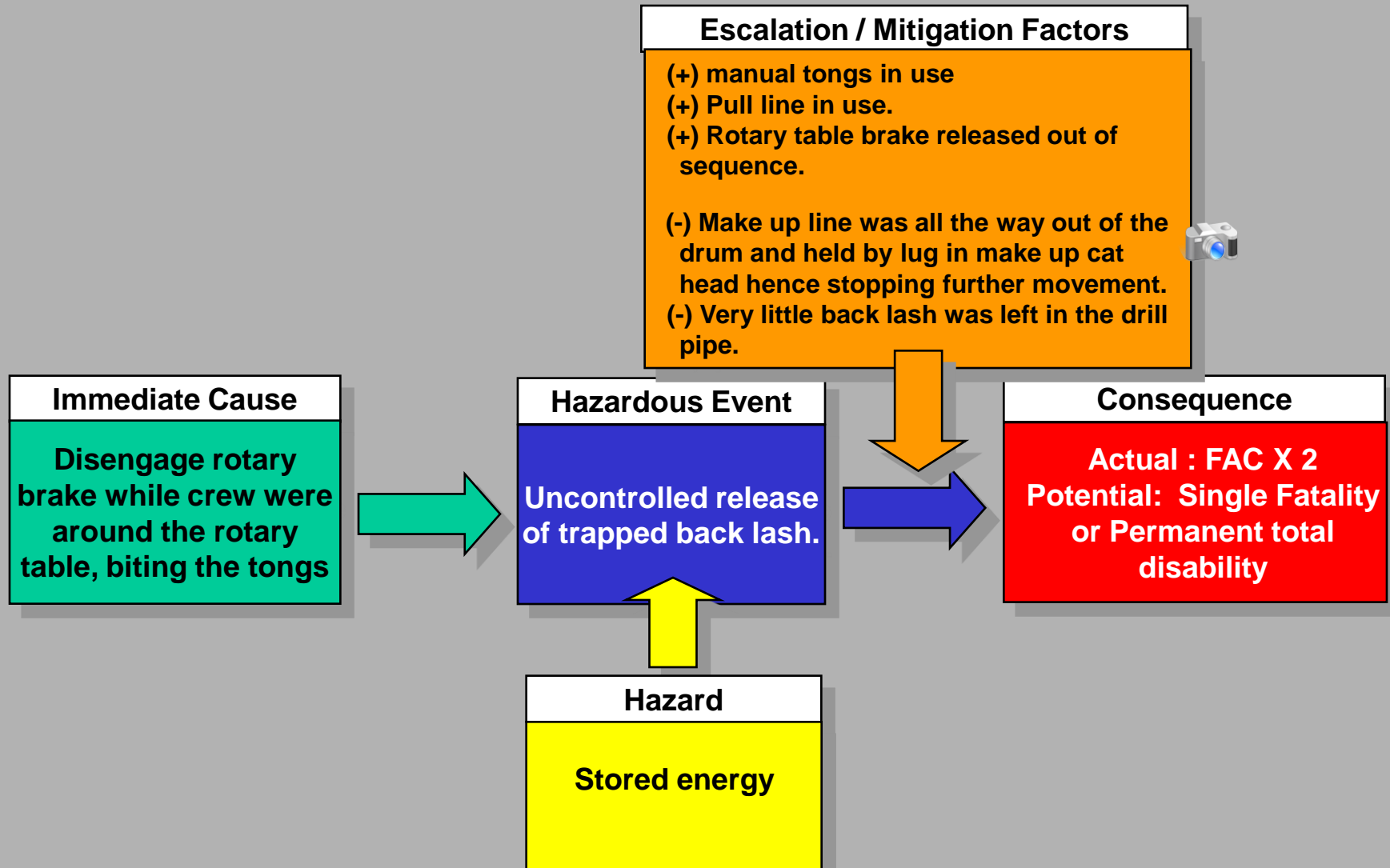


- AD was making connection with 5” DP with the TP and Driller on the rig floor.
- As make up torque was reached while making up TDS and verified on the tong line pull gauge, torque was released and the back lash was caught with the rotary brake.
- After receiving the ok sign from the AD the floor man proceeded to make up the bottom connection to optimum torque (46k ft lbs)
- The first IP latched the make up tong with the second IP assisting him on the V-door side. The other floor man was at the break out tong.
- While they were proceeding to get a bite on both the tongs, AD released the rotary brake.
- The residual trapped backlash from the initial make up caused the string to turn to the left thus resulting in trapping the first IP between the tong arm and the doubled make up line lifting him an inch off the ground.
- Seeing this, the second IP moved away from the tong movement radius and struck his upper right leg on ST 80 frame.



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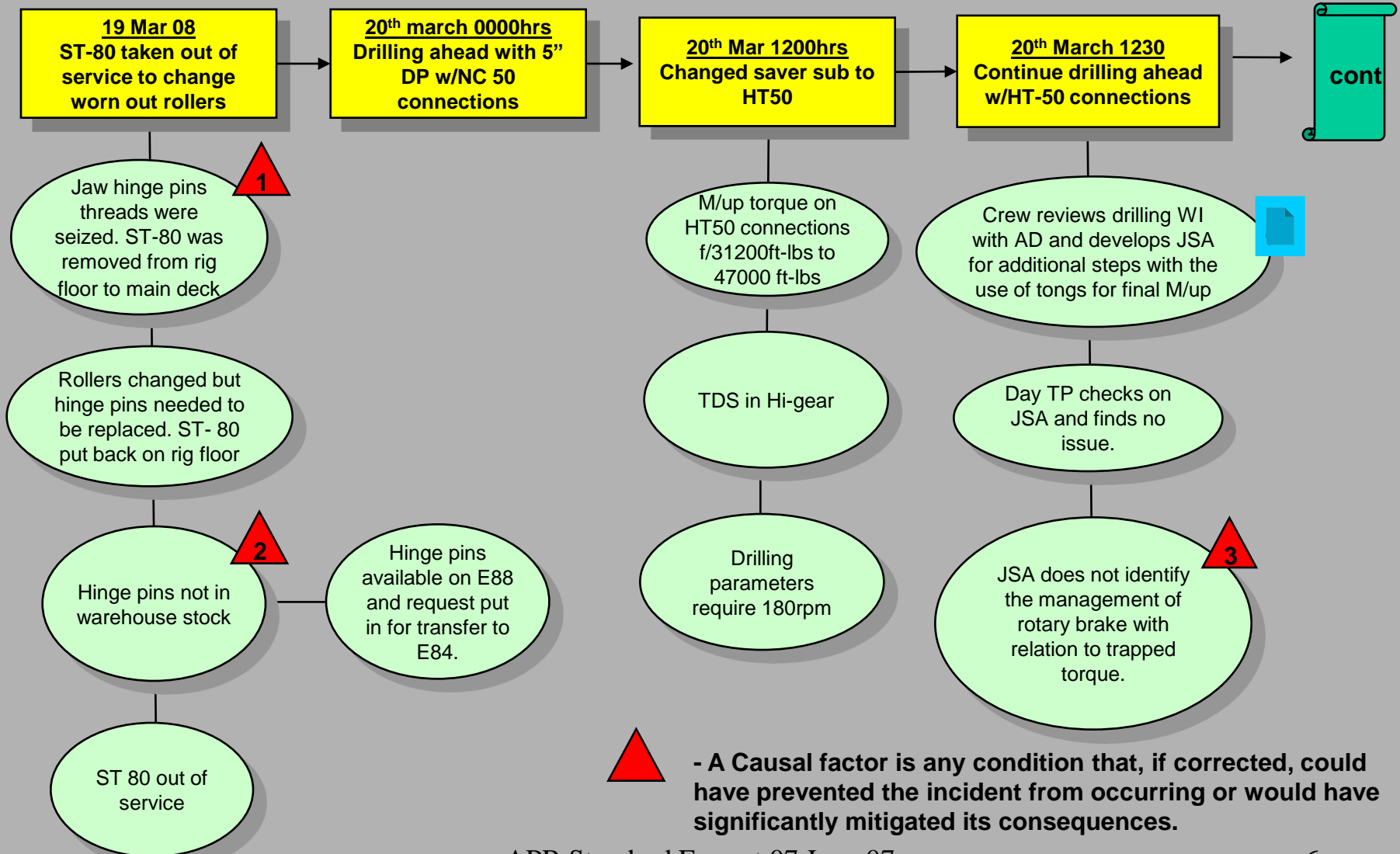
## ENSCO Incident Model





# ENSCO 84 Incident Investigation Report

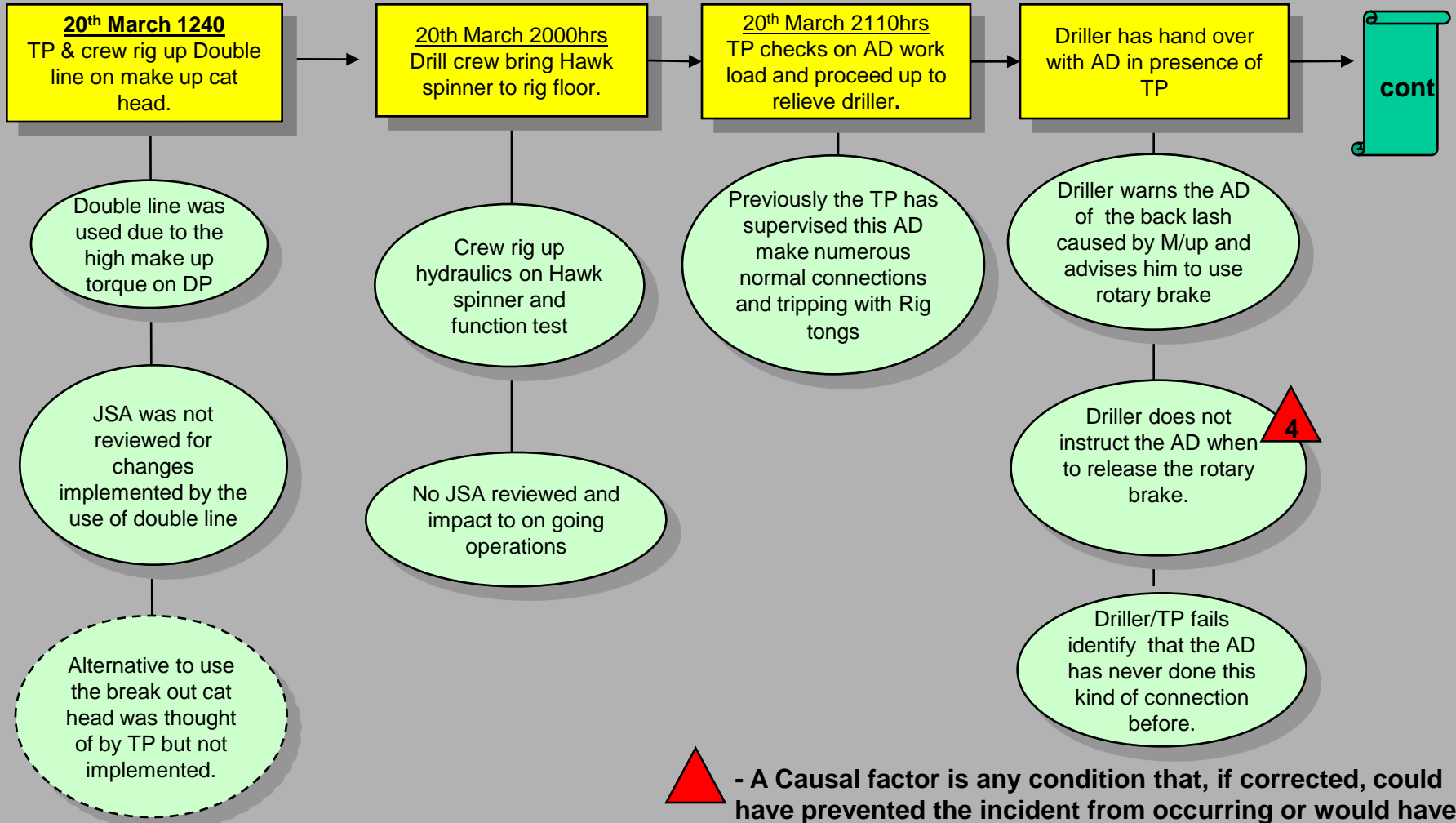
## TapRoot SNAP Chart






# ENSCO 84 Incident Investigation Report

## TapRoot SNAP Chart

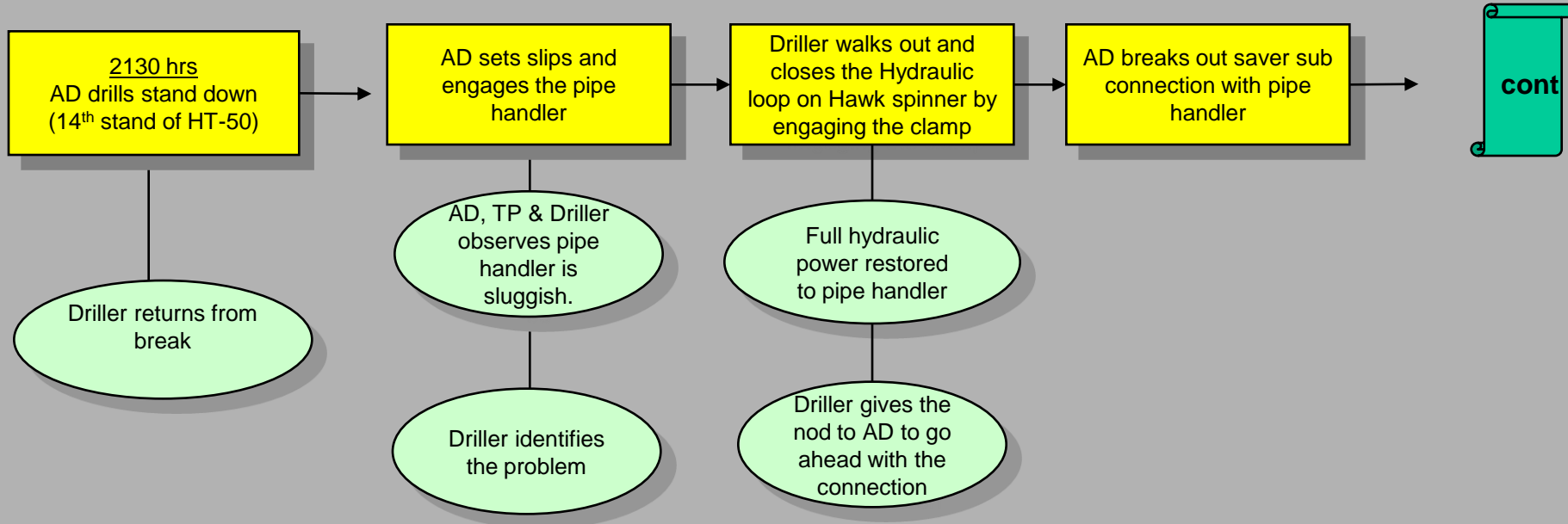


 - A Causal factor is any condition that, if corrected, could have prevented the incident from occurring or would have significantly mitigated its consequences.



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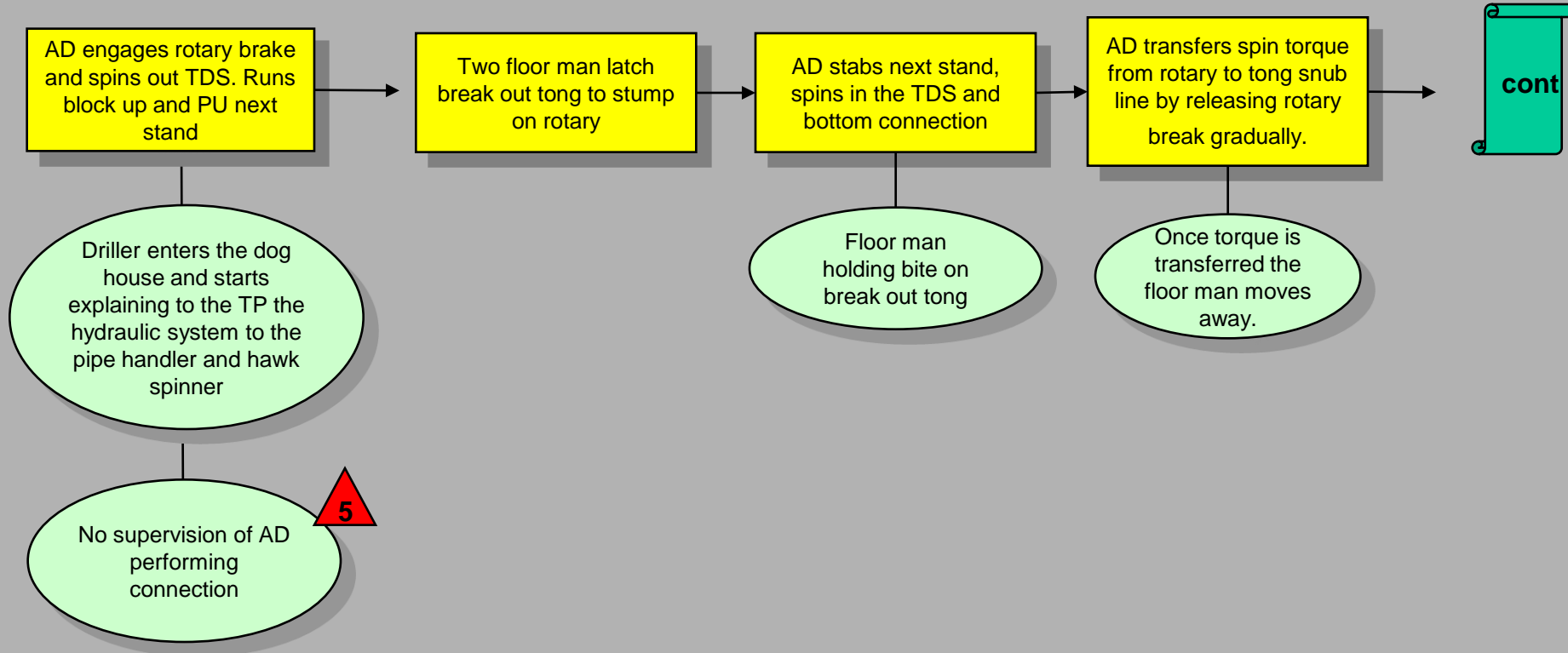
## TapRoot SNAP Chart





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## TapRoot SNAP Chart

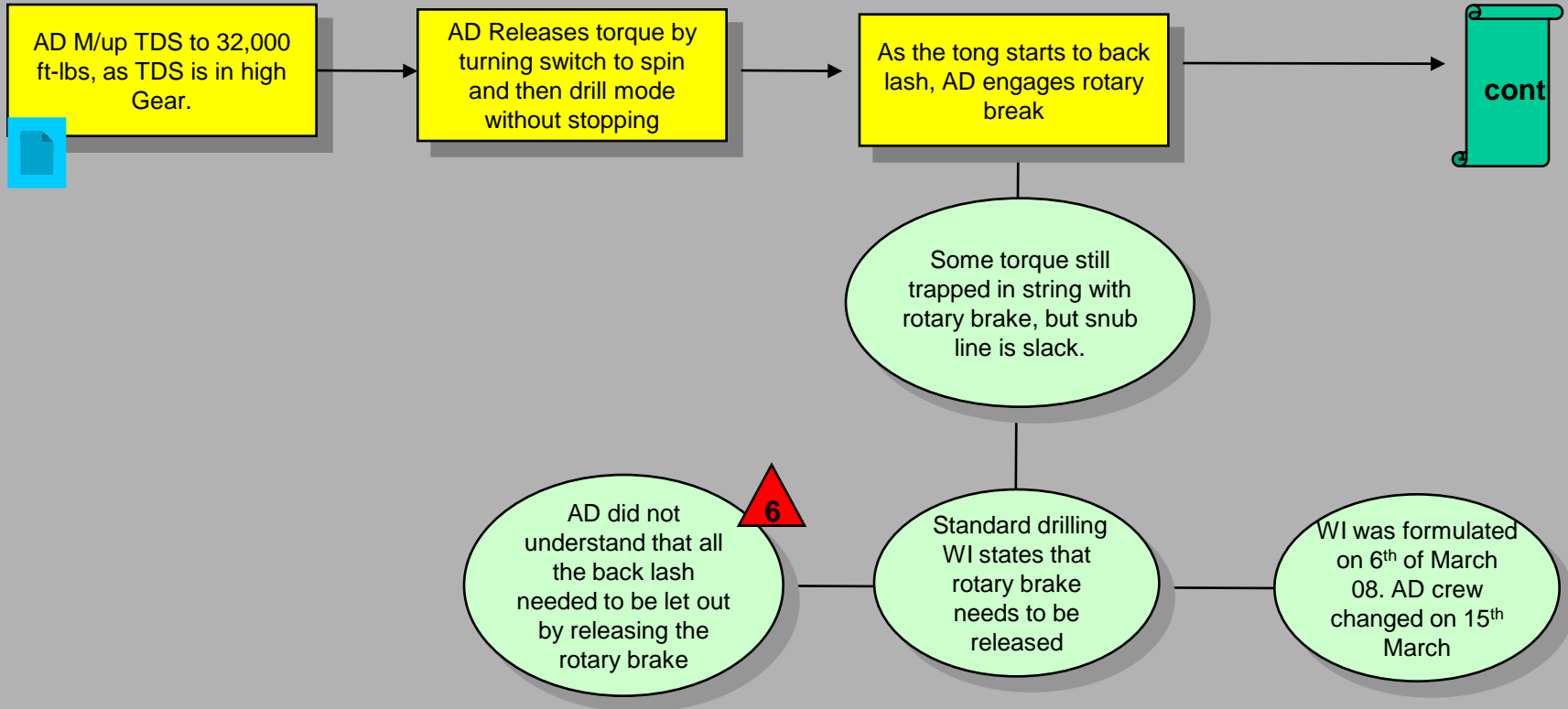



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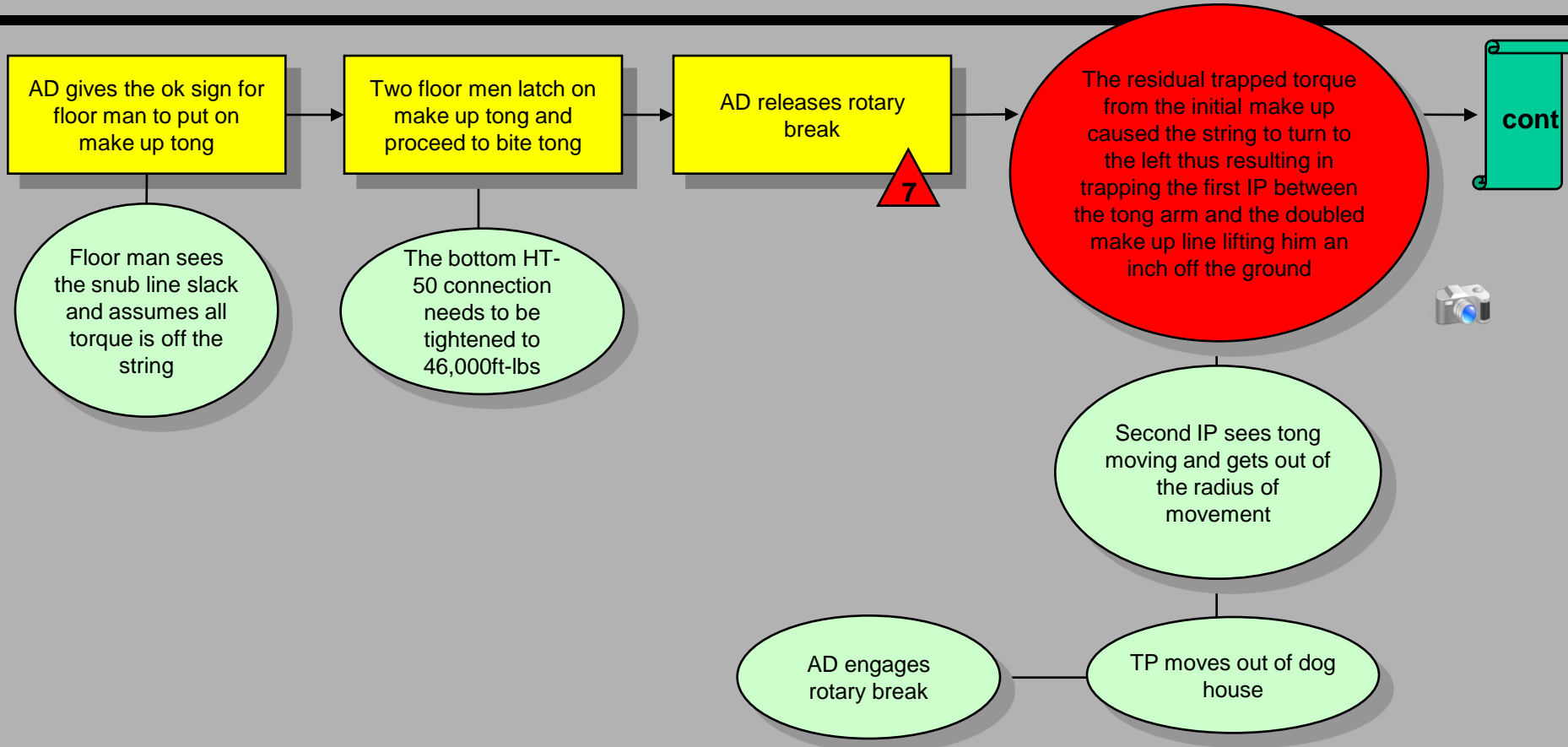


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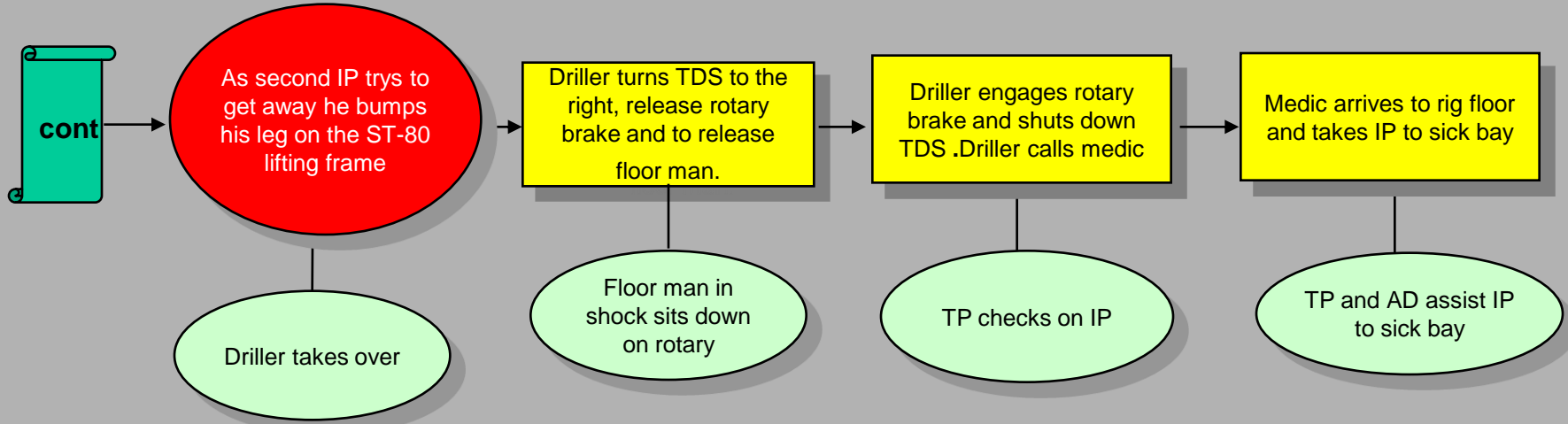


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# ENSCO 84 Incident Investigation Report

## TapRoot SNAP Chart





# ENSCO 84 Incident Investigation Report

## Root Cause Analysis



### Causal Factor

### Unsafe Act / condition

### Root Causes

1  
Jaw hinge pins threads were seized. ST-80 was removed from rig floor to main deck

Rollers last changed the end of DEC 07. Hinge pin threads were not coated with never-seize prior to installation resulting in hinge pin damage.

Procedure  
Not Used  
No Procedure

2  
Hinge pins not in warehouse stock

No spare hinge pins offshore, thus unable to effect full repair and return to service of ST-80

Other  
Spare parts inventory NI\*

\* NI: Needs Improvement



# ENSCO 84 Incident Investigation Report

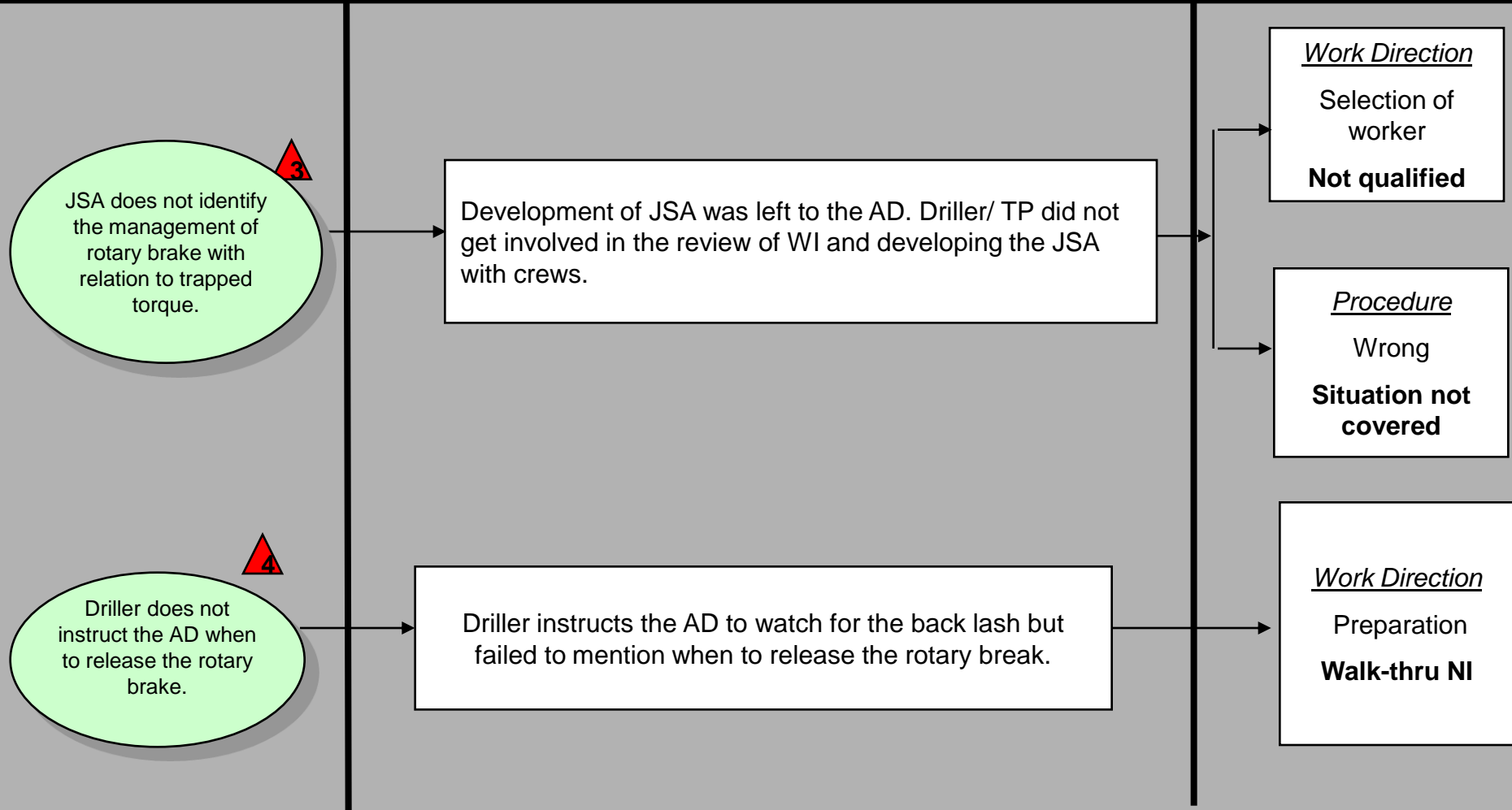
## Root Cause Analysis



### Causal Factor

### Unsafe Act / condition

### Root Causes





# ENSCO 84 Incident Investigation Report

## Root Cause Analysis



### Causal Factor

### Unsafe Act / condition

### Root Causes

5

No supervision of AD performing connection

TP and driller were distracted and failed to supervise AD in making the connection.

Work Direction  
Supervision During Work  
**No supervision**

6

AD did not understand that all the torque needed to be let out by releasing the rotary brake

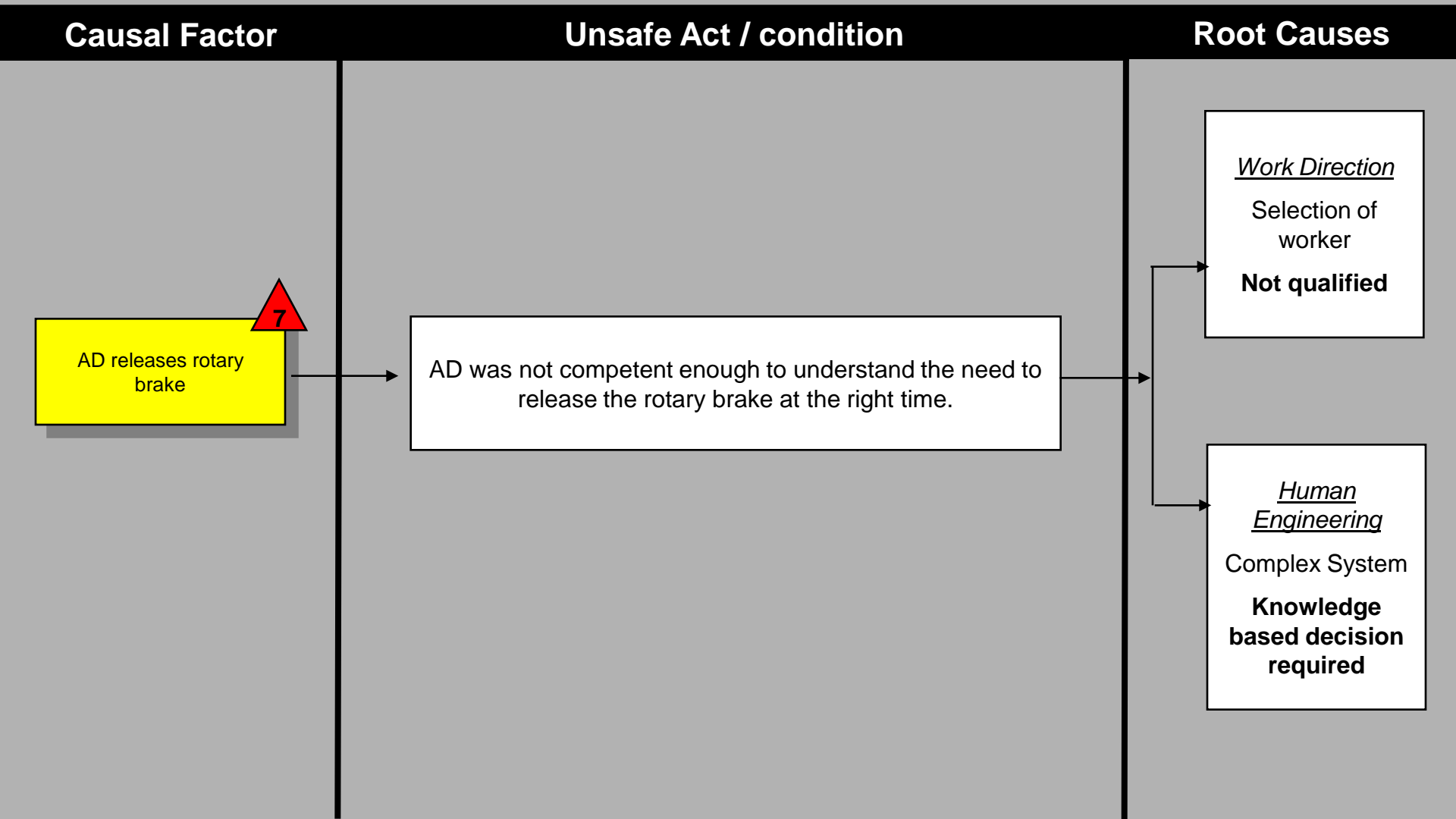
AD was not competent enough to understand the need to release the rotary break at the right time.

Work Direction  
Selection of worker  
**Not qualified**



# ENSCO 84 Incident Investigation Report

## Root Cause Analysis





# ENSCO 84 Incident Investigation Report

## Actions to prevent recurrence



Root Cause	Corrective Action	Due Date	Responsibility
<p><u>Procedure</u> Not Used <b>No Procedure</b></p>	<p>Remind crew, that time should be taken to apply never-seize to hinge pins so as to keep threads from seizing, in next 4 WSM.</p>	<p>Immediate</p>	<p><b>OIM</b></p>
<p><u>Other</u> Spare parts inventory NI*</p>	<p>Develop WI for roller change out on ST 80 and highlight the need to lubricate threads with never-seize. Mechanic will supervise during roller change out.</p>	<p>15<sup>th</sup> April 08</p>	<p><b>Mech/BE</b></p>
	<p>Order Hinge pin and maintain minimum stock level of two.</p>	<p>1<sup>st</sup> May 08</p>	<p><b>OIM</b></p>



# ENSCO 84 Incident Investigation Report

## Actions to prevent recurrence



Root Cause	Corrective Action	Due Date	Responsibility
<p><u>Work Direction</u> Selection of worker <b>Not qualified</b></p>	<p>All AD's to complete ENSCO Competence Assurance Programme</p>	<p>1<sup>st</sup> July 2008</p>	<p>OIM</p>
	<p>Review of all new WI and developed JSA is to be done by the on tour Toolpusher</p>	<p>Immediate</p>	<p>OIM</p>
	<p>Supervisors shall be held accountable for ensuring that the worker selected to perform a given task is qualified and competent to carry out the work safely. Memo to this effect will be issued by Rig Manager.</p>	<p>2<sup>nd</sup> April 2008</p>	<p>RM</p>



# ENSCO 84 Incident Investigation Report

## Actions to prevent recurrence



Root Cause	Corrective Action	Due Date	Responsibility
<p><u>Procedure</u> Wrong Situation not covered</p>	<p>Driller and TP will formulate WI for making connections with TDS in Hi-gear and rig tongs.</p>	<p>28<sup>th</sup> April</p>	<p>OIM</p>
<p><u>Work Direction</u> Preparation Walk-thru NI</p>	<p>All step by step instructions should be explained to a person in training and demonstrated until the supervisor is confident that the trainee fully understands.</p>	<p>Immediate</p>	<p>All Supervisors</p>



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## Actions to prevent recurrence



Root Cause	Corrective Action	Due Date	Responsibility
<p><u>Work Direction</u></p> <p>Supervision During Work</p> <p><b>No supervision</b></p>	<p><b>Assistant Drillers/trainees will not operate the drawworks/cranes without being supervised unless written permission is granted by the Rig Manager and MOQ Drilling Supervisor</b></p>	<p>Immediate</p>	<p><b>All Supervisors</b></p>
<p><u>Human Engineering</u></p> <p>Complex System</p> <p><b>Knowledge based decision required</b></p>	<p><b>Supervisors shall be held accountable for ensuring that the worker selected to perform a given task is qualified and competent to carry out the work safely.</b></p>	<p>Immediate</p>	<p><b>All Supervisors</b></p>