

Improving Mobilization Efficiency: Addressing Equipment Oversight Through a Standardized Tracking System

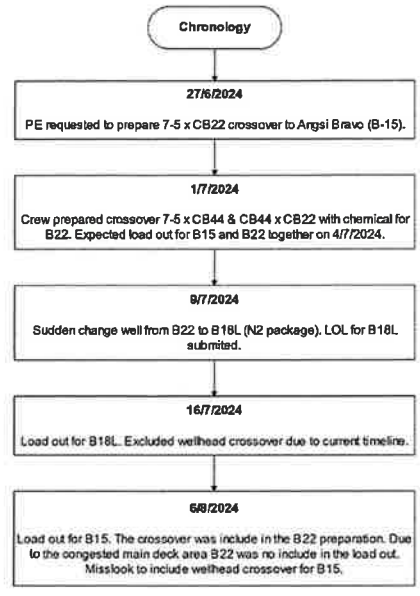
18 AUGUST 2024

Table of contents

- 01** DEFINE PROBLEM
- 02** DATA COLLECTION
- 03** ROOT CAUSE ANALYSIS
- 04** RECOMMENDATION & SOLUTION

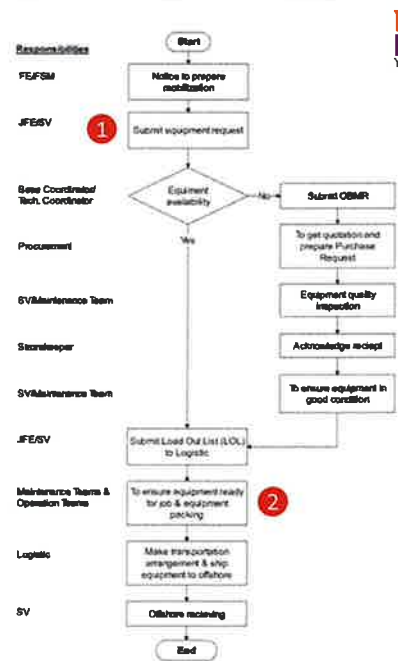
01 DEFINE PROBLEM

- Critical equipment being overlooked during the packing process, leading to instances where baskets are mobilized without all necessary items



02 DATA COLLECTION

- Critical equipment being overlooked during the packing process, leading to instances where baskets are mobilized without all necessary items
- Based on discussions between management regarding the load-out system, the identified gaps in the process are as follows:
 1. **Currently, equipment requests are limited to Bottom Hole Assembly (BHA) and chemicals, with no formal process in place for requesting critical equipment.** This omission results in incomplete information transfer, increasing the likelihood of errors.
 2. **There is no package preparation report to confirm that the equipment is ready for mobilization.** The absence of this report can lead to human error and oversight during the packing and mobilization process."



02 DATA COLLECTION

DIMENSION BID

WELL INTERVENTION | PERFORATION SERVICES

EQUIPMENT LOAD OUT LIST

CLIENT	PTSD
LOCATION	JANOU BARJUD
JOB TYPE	BP WEL
JOB NUMBER	

NO	ITEM	QTY	UNIT	WEIGHT	HEIGHT	LENGTH	WIDTH	DEPTH	DATE	STATUS	REMARKS					
1	Schlagen Unit - 1204	1	PCMH370405	4200	2438	2390	9.00	8.30	33.39	N/A	Jan 25	Dec 24	CT147460	Apr 25	19.50	
2	Schlagen Tank #2	1	CTF 242	2992	2438	2192	5.37	12.00	7.29	N/A	Dec 24	Feb 28	214700-0	Nov 24	12.0	2000 gallon (Full N2)
3	Schlagen Tank #2	1	CTF 232	2981	2438	2192	5.37	12.00	7.29	N/A	Nov 24	Feb 28	214275-0	Nov 24	14.0	2000 gallon (Full N2)
4	Large Zettamer	1	MM-A-2001	1823	1829	2418	3.00	6.70	3.34	Mar 25	N/A	Mar 25	N/A	1340	18.3	Consumables, Tools and Training Log

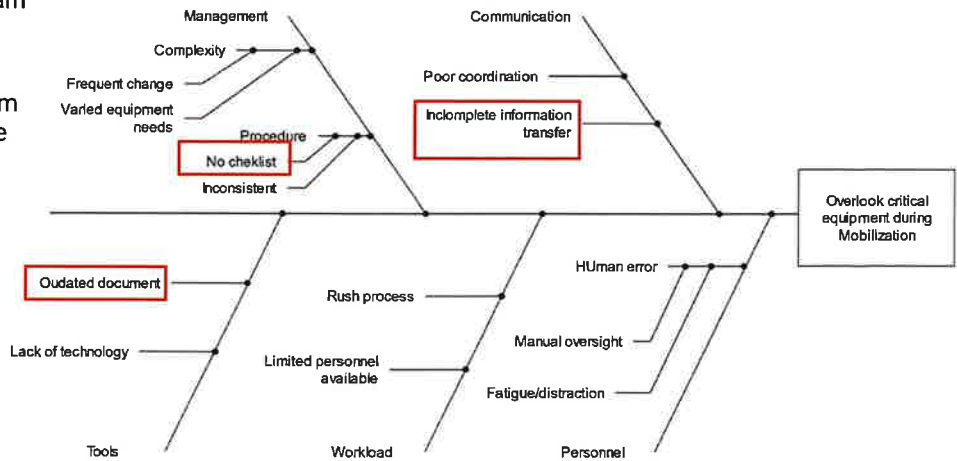
Name:	
Position:	
Date:	


18.31
0

- This is the main page of Load Out List (LOL). Includes the dimensions, expires date of lifting equipment and remark on items but not specific on the items for consumable and the tools/equipment being load out. This LOL is attached with chemical request, Bottom Hole Assembly (BHA) request and Treating Iron Movement Activity (TIMA). However, this process only at the beginning of packing (pre-mob).

03 ROOT CAUSE ANALYSIS

- Possible causal factors by Fish Bone/Ishikawa Diagram
- The possible causes were jot down and through out the system mobilization, there are 3 main cause for the problem






03

ROOT CAUSE ANALYSIS

- 1. **Communication**
 - **Poor Coordination:** Lack of clear communication between departments or team members about what equipment needs to be included in each mobilization.
 - **Incomplete Information Transfer:** Critical information about required equipment may not be passed along properly from planning to execution stages.
- 2. **Personnel (Human error)**
 - **Manual Oversight:** Relying on memory or manual tracking increases the likelihood of human error, leading to missed items.
 - **Fatigue or Distraction:** Workers might miss items due to fatigue, distraction, or being rushed during the packing process.
- 3. **Inadequate Documentation Tools**
 - **Lack of Technology:** The absence of digital tools or software to track and manage equipment lists can lead to items being overlooked.
 - **Outdated Document:** Existing documentation might be outdated or incomplete, leading to items not being included in the packing process.
- 4. **Workload**
 - **Rushed Processes:** Tight deadlines or heavy workloads may force teams to rush through the packing process, increasing the risk of missing equipment.
 - **Insufficient personnel available:** Limited personnel available for packing and checking equipment can lead to oversights.
- 5. **Management**
 - **Varied Equipment Needs:** Projects that require different sets of equipment can make it difficult to track what is needed for each mobilization, especially without a clear system.
 - **Frequent Changes:** Changes to equipment requirements that are not promptly updated in tracking documents can result in missing items.
 - **Inconsistent Processes:** Different teams or individuals may follow varied procedures for packing, leading to inconsistencies in what is considered "complete."
 - **No Checklist:** Absence of a standardized checklist or protocol for ensuring all equipment is accounted for before mobilization.

7


7



03

ROOT CAUSE ANALYSIS

➤ Root cause of the problem after using elimination method using 5 WHY



➤ The three primary causal factors for this problem were analyzed using the 5 WHY method, which led to the identification of the root cause. The root cause was determined to be the lack of documentation to track the packing of critical equipment prior to load-out.

8

8

04

RECOMMENDATIONS & SOLUTIONS

To address the identified issues and prevent future occurrences, the following steps will be implemented:

1. Enhancement of Equipment Request and Tracking Processes for Critical Mobilization:

To improve operational efficiency, the Treating Iron Movement Activity will be upgraded to include requests for critical equipment such as iron, crossovers, and other essential components. The new 'Crossover Request' form will clearly specify the equipment required for each well, ensuring comprehensive accountability and minimizing the risk of oversight.

2. Enhancement of the Load-Out List (LOL):

The existing Load-Out List will be improved by adding a new column to specify the well number associated with each basket and container. This enhancement will allow for more precise tracking and segregation of equipment, ensuring that items are correctly allocated to their intended destinations.

3. Implementation of 7-14 Day Operational Lookahead for Enhanced Resource Planning:

To address the crossover issue and ensure all necessary resources are properly allocated, the Project Engineer will develop a 7-14 day operational lookahead for campaign mode. This lookahead will serve as a proactive planning tool, capturing and scheduling all required elements, including personnel, equipment, chemicals, and boat schedules. By systematically identifying and planning for these needs well in advance, the lookahead will help to ensure that critical items, such as crossovers and other equipment, are not overlooked, thereby improving overall operational readiness and efficiency.