



**SAFETY FOCUS – LIFTING OPERATIONS DURING A
TURNAROUND**

PRESENTED TO:



SAFETY MOMENT

- What is a Safety Moment?
- Why do we do a Safety Moment?
- How do we bring this into our lives and at work?
- The Mammoet Minute:
 - Stop before you start your work.
 - Think about the risks.
 - Look around you; what are the risks?
 - Evaluate the risks.
 - Control the risks, take action.
 - Start your work safely.





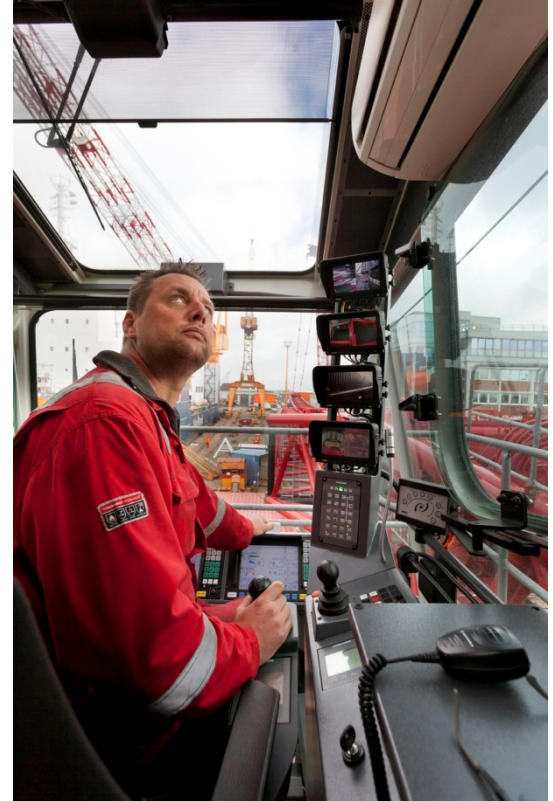
TURNAROUNDS ARE ABOUT TIME

Safe delivery that meets deadlines and avoids delays:

- Best in class operational standards
- best safety practices
- reliable equipment
- on-time delivery

Move deadlines forward:

- innovative engineering
- careful planning



PRODUCTIVITY FROM BEST PRACTICES

Early involvement and collaboration means contractors can drive productivity and optimize your project schedule

- Minimize downtime / standby time
- Minimize amount of equipment required
- Maximize utilization of equipment site-wide
- Centralized point of contact



FIELD CREWS – RISK ASSESSMENTS





FLRA

(Field Level Risk Assessment)

OBJECTIVES OF FLRA

To provide a tool to enable the worker to perform tasks safely

To encourage workers to take greater responsibility in not only their own safety, but also in the well being of their fellow workers

To familiarize all workers with the process of planning the work and recognition of potential dangers that may affect them

FLRA FORM (HEADER)

- Time
- Date
- Customer
- Work Area/Plant
- Crane Size
- Crane Unit #
- Work Order

TIME	DATE	CUSTOMER
WORK AREA/PLANT	CRANE SIZE:	
CRANE UNIT #	WORK ORDER #	

TIME	Enter time	DATE	Enter Date	CUSTOMER	Enter Customer Name
WORK AREA/PLANT	Enter work area where work is being performed			CRANE SIZE: Enter Crane Size	
CRANE UNIT #	Enter Crane Number	WORK ORDER #	??????????????		

TIME	07:30	DATE	SEPTEMBER 15, 2016	CUSTOMER	Edmonton Exchanger
WORK AREA/PLANT	REFINERY - CCR - BLUE BLOCK			CRANE SIZE: 160 TON TADANO	
CRANE UNIT #	2643	WORK ORDER #	On File		

FLRA FORM (BODY)

Blank Example

1. Describe work tasks												
2. What is the lift classification? Circle appropriate class.	STANDARD			SERIOUS			CRITICAL					
3. Have all lift evaluation forms been completed?				YES	NO	ACTION						
4. Have all applicable permits been obtained and reviewed?	YES	NO	AREA SAFE PERMIT #									
5. Is the crane adequate for the lift?				YES	NO	ACTION						
6. Are there any overhead obstructions?				YES	NO	ACTION						
7. Are there any swing radius obstructions?				YES	NO	ACTION						
8. Is the ground condition stable and verified by client to meet ground bearing pressures?				YES	NO	ACTION						
9. Are stabilizing mats required?				YES	NO	ACTION						
10. Does the area/roadway need to be flagged or blocked off due to traffic?				YES	NO	ACTION						
11. Are the taglines of sufficient length to control the load?				YES	NO	ACTION						
12. Have the tagline personnel been identified? NAMES:				YES	NO	ACTION						
13. Does emergency response need to be notified?				YES	NO	ACTION						
14. Is the entire crew familiar/comfortable with the lift and scope of job?				YES	NO	ACTION						

Field Example

1. DESCRIBE WORK TASK	HOISTING: BUNDLE PILES/EXHAUSTERS/CHIMNEY HEAD/PIPE SPIGOTS/RINGS/BONNET											
2. WHAT IS THE LIFT CLASSIFICATION? As per STEELS S.W.P.'s	STANDARD			NONSTANDARD			CRITICAL					
3. HAVE ALL THE LIFT EVALUATION FORMS BEEN COMPLETED? No LIFT OVER 75% CAPACITY				YES	NO	ACTION						
4. HAVE ALL THE APPLICABLE PERMITS BEEN OBTAINED & REVIEWED?	YES	NO	AREA SAFE PERMIT # 40444									
5. IS THE CRANE ADEQUATE FOR THE JOB? FOR PROPOSED SCOPE (KNOWN WEIGHTS)				YES	NO	ACTION						
6. ARE THERE ANY OVERHEAD OBSTRUCTIONS? NONE IN HOISTING AREAS				YES	NO	ACTION						
7. ARE THERE ANY SWING RADIUS OBSTRUCTIONS? FULL 360° COUNTERWEIGHT SWING				YES	NO	ACTION						
8. IS THE GROUND CONDITION STABLE? CONCRETE BASE (NO KNOWN UTILITIES)				YES	NO	ACTION						
9. ARE STABILIZING MATS REQUIRED? STANDARD 6'x8' STEEL MATS				YES	NO	ACTION						
10. DOES THE AREA/ ROAD WAY NEED TO BE FLAGGED / BLOCKED OFF? FLAGGED & TAGGED				YES	NO	ACTION						
11. ARE THE TAGLINES OF SUFFICIENT LENGTH TO CONTROL THE LOAD? NO KNOTS IN ROPE				YES	NO	ACTION						
12. HAVE THE TAGLINE PERSONNEL BEEN IDENTIFIED? NAMES: KOB FOSTER / CROFT				YES	NO	ACTION						
13. DOES EMERGENCY RESPONSE NEED TO BE NOTIFIED?				YES	NO	ACTION						
14. IS THE ENTIRE CREW FAMILIAR/ COMFORTABLE WITH THE JOB SCOPE? PLANNED HOISTING				YES	NO	ACTION						

FLRA FORM (BODY CONT.)

Blank Example

15. Are ground conditions slippery? (IF ICE AND SNOW ARE PRESENT, USE TRACTION AIDS AND ALSO CONSIDER USING SAND/GRAVEL TO REDUCE SLIP HAZARDS AT BASE OF CRANE LADDERS AND AROUND YOUR WORK AREAS)	YES	NO	ACTION	
16. Has rigging been inspected / Is rigging available?	YES	NO	ACTION	
17. Have rigging points been identified?	YES	NO	ACTION	
18. Have the lifting points been inspected and are they adequate for the load to be lifted?	YES	NO	ACTION	
19. Are workers aware of appropriate access/egress points? (DON'T USE OUTRIGGERS OR CLIMB UP/DOWN CRAWLER TRACKS – USE MANUFACTURER'S LADDERS/STEPS ONLY!!)	YES	NO	ACTION	
20. Are there any sharp edges that the rigging can come in contact with and cause damage?	YES	NO	ACTION	
21. Have any pinch points been identified?	YES	NO	ACTION	
22. Has a designated signal person been identified?	YES	NO	ACTION	
23. Is the operator familiar with the signal person's work?	YES	NO	ACTION	
24. Are radios required and have they been function tested?	YES	NO	ACTION	
25. Are spare radio batteries readily available?	YES	NO	ACTION	
26. Does the crane supervisor need to be involved?	YES	NO	ACTION	
27. Has the work crew connecting boom / dolly (trailer) to crane been identified and has the work practice been discussed with them?	YES	NO	ACTION	
List the names involved with number 27 on the reversed page before proceeding.				
28. Is there another crane within your working range? (Can be more than one crane)	YES	NO		

Field Example

15. ARE THE GROUND CONDITIONS SLIPPERY? (IF ICE AND SNOW ARE PRESENT, USE TRACTION AIDS / NO ALSO CONSIDER USING SAND/GRAVEL TO REDUCE SLIP HAZARDS AT BASE OF CRANE LADDERS AND AROUND YOUR WORK AREAS)	YES	NO	ACTION	
16. HAS THE RIGGING BEEN INSPECTED/ IS THE RIGGING AVAILABLE? BY ED EX RIGGERS	YES	NO	ACTION	
17. HAVE THE RIGGING POINTS BEEN IDENTIFIED? BY ED EX RIGGERS	YES	NO	ACTION	
18. HAVE THE LIFTING POINTS BEEN INSPECTED? BY ED EX RIGGERS	YES	NO	ACTION	
19. WORKERS AWARE OF APPROPRIATE ACCESS/EGRESS POINTS? (DON'T USE OUTRIGGERS OR CLIMB UP/DOWN CRAWLER TRACKS – USE MANUFACTURER'S LADDERS/STEPS ONLY!!) POINT CONTACT AT ALL TIMES	YES	NO	ACTION	
20. ARE THERE ANY SHARP EDGES THAT THE RIGGING CAN COME INTO CONTACT WITH? SOFTENED	YES	NO	ACTION	
21. HAVE ANY PINCH POINTS BEEN IDENTIFIED? AT PREVIOUS MEETINGS / FLRA'S	YES	NO	ACTION	
22. HAS A DESIGNATED SIGNAL PERSON BEEN IDENTIFIED? NAMES: NICK V2013GON/INCA	YES	NO	ACTION	
23. IS THE OPERATOR FAMILIAR WITH THE SIGNAL PERSONS WORK? COMPETENT	YES	NO	ACTION	
24. ARE RADIOS REQUIRED? SOME BLIND HOISTING REQUIRED	YES	NO	ACTION	
25. ARE SPARE BATTERIES AVAILABLE? IN CAB OF CRANE	YES	NO	ACTION	
26. DOES THE CRANE SUPERVISOR NEED TO BE INVOLVED? NO NONSTANDARD HOISTING	YES	NO	ACTION	
27. WORK CREW CONNECTING BOOM / DOLLY (TRAILER) TO CRANE HAS BEEN IDENTIFIED & WORK PRACTICE HAS BEEN DISCUSSED? ROUGH TERRAIN CRANE	YES	NO	ACTION	
List the names involved with number 27 on the reversed page before proceeding.				
28. IS THERE ANOTHER CRANE WITHIN YOUR WORKING RANGE? (CAN BE MORE THAN ONE CRANE) AT 2725	YES	NO		

TASK / HAZARD / RECOMMENDED CONTROLS

➤ **Task:** Step by step procedure identified to conduct the work scope. Covers specific turning points related in completing the task successfully.

➤ **Hazards:** Identifiable hazards related to the coordinating task. Should be specific to each identified task in Task Section.

➤ **Recommended Controls:** Established controls identified by the crew which will be used to mitigate the identified hazards.

Task	Hazards/ Potential Hazards	Recommended Controls
PRE OPERATION INSPECTION →	LEAKS & FUEL/OILS/ANTI-FREEZE	Do A THOROUGH WALK AROUND CRANE
* CHECK ALL FLUID LEVELS PRIOR TO STARTS	USE PROVIDERS CONTAINMENT SPILL PANS	LOOKING FOR ANY SIGNS OF SPILLS
* NEVER PLACE ANY MATERIALS ON CRANES OUTRIGGER BEAMS (PINNACLES)	FOUNDATION: GROUND INTEGRITY	* ENSURE NO NEW CRACKS HAVE DEVELOPED IN CONCRETE UNDER PADS
CRANE HOISTINGS →	CHECK THROUGHOUT THE DAY ALSO	NEVER STAND OR WALK UNDER NEARBY ANY LOADS IN THE AIR
* NEVER CLIMB UP ONTO CRANES DECK WITHOUT OPERATORS PERMISSION FIRST	SUSPENDED LOAD: LIFTING/PINCH/CRUSH	DONT ALLOW YOURSELF TO GET COUNTER BY SUSPENDED LOADS
* AVOID PARKING ANY MACHINERY WITHIN 10' OF CRANE PILE	SITUATIONAL AWARENESS	AVOID TURNING AWAY FROM ANY LOAD BEING HOISTED OR LAMDED
STOP THE DROP	TRY TO ALWAYS FACE THE SAME DIRECTION OF LOADS TRAVEL	CONTROL LOADS DIRECTION AT ALL TIMES
USE KINKY BAGS TO HOIST MATERIALS	WIND: LOADS SHIFT/SPIN/CONTROL/CRUSH	ENSURE PROPER INSPECTED RIGGING IS BEING USED FOR EVERY LIFT
KNOW YOUR TOOL PLACEMENT AT ALL TIMES	* PRE HADE DAMAGE FOR LANDINGS	
USE TOOL LANYARDS AT HEIGHTS	* NO HANDS ON LIVE LOADS PLEASE	
	FACILITY RIGGING: LOAD DROP/PINCH/CRUSH	
	* CAPACITY EXCEEDS LOADS WEIGHT	
Does everyone on the crew know the site emergency call number? 1-780-992-3666	Emergency Meeting Point C/S	Mustar Area
END OF TASK REVIEW:		
Has Anyone Been Injured?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Has Anyone Witnessed a NEAR MISS? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IF YES, HAS IT BEEN REPORTED TO A SUPERVISOR OR HSE?		CRANE WACKAROUND
COMMENTS: BE ACCOUNTABLE FOR YOUR ACTIONS AT ALL TIMES	START	08:04
COMMUNICATION IS THE KEY TO BEING INCIDENT FREE	COFFEE	11:11
BE PROMOTIVE WITH SAFETY - NOT REACTIVE TO INCIDENT	COFFEE	14:38

TEAM LIST (PRINT/SIGN)

- Work Team: Can be Signal-persons, Rig-persons, Spotters, general labor.
- Crane Operator: Employees assigned to operate the crane specific to the task.
- Task/Team Leader: Employee assigned to direct the team in the work activity.
- Mammoet Supervisor: Mammoet Supervisor assigned to the work activity.
- Mammoet HSE: Mammoet HSE Employee assigned to cover crew and review task.

WORK TEAM:	Print:	Sign:
Rigger/Signal	PRINT NICK DOBSON	SIGN [Signature]
TRAILER	KEVIN FOSTER	[Signature]
Signal/Rigger/Trailer	CASEY DUTCHER	[Signature]
	Print:	Sign:
	Print:	Sign:
	Print:	Sign:
	Print:	Sign:
	Print:	Sign:
	Print:	Sign:
CRANE OPERATOR:	PETER SCHMID	[Signature]
2158	Stacy-bing Pusic haw	[Signature]
2725	Matt Moran	[Signature]
TASK/TEAM LEADER:	Shane Wade	[Signature]
	Print:	Sign:
MAMMOET SUPERVISOR	Print:	Sign: [Signature]
MAMMOET HSE	Print:	Sign:

HOW DO YOU DO AN FLRA?

Stop and Think

Look Around and Find Hazards

Assess Risk

Control Risk

Resume Work



“No job is so urgent that we cannot take the time to do it safely”

SUPERVISION – SPOTTERS / SPATIAL AWARENESS





SPOTTING / RELOCATING EQUIPMENT

- Site-specific requirements & best practices
- Perform a risk assessment prior to moving a crane (FLRA / Mammoet Minimum)
 - Route clearances
 - Crane preparation
 - Spotters assigned
 - Traffic / contractor coordination
- Approval from client contact
- Supervision for the move



CRANE RELOCATION CHECKLIST

Hydraulics

ESCORTED: TO BE PREPARED BY LEAD SPOTTER		UNESCORTED*: TO BE PREPARED BY CRANE OPERATOR	
<small>*ONLY APPLIES TO HYDRAULIC CRANES ON MAIN ACCESS ROADS WITH ADEQUATE CLEARANCES</small>			
DATE:		CRANE WIDTH (IN TRAVEL MODE):	
CRANE SIZE:		CRANE HEIGHT (IN TRAVEL MODE):	
CRANE UNIT #:		PRESFNT. WORK AREA OR PLANT:	
DESCRIBE TASK:		DESTINATION WORK AREA OR PLANT:	
IF ROUTE HAS BEEN CHECKED AND IS FREE OF OBSTRUCTIONS (COMPLETE #1 - 4)			
1. IS THIS A HYDRAULIC CRANE MOVING DOWN A MAIN ACCESS ROAD WITH ADEQUATE CLEARANCE UNESCORTED?	Y	N	N/A
2. DOES THE CRANE FIT BASED ON POSTED MAXIMUM HEIGHT AND MEASURED ALLOWABLE WIDTHS AT ALL OBSTRUCTIONS?	Y	N	N/A
3. HAS THE CRANE BEEN PREPARED FOR THE MOVE?	Y	N	N/A
HAVE LOOSE MATERIALS REMOVED FROM THE DECK/CARBODY/TRACKS?	Y	N	N/A
HAVE OUTRIGGERS CLEARED OF OBSTRUCTION?	Y	N	N/A
HAVE PADS BEEN STORED PROPERLY?	Y	N	N/A
4. HAS DISPATCH BEEN CALLED PRIOR TO LEAVING LOCATION AND WHEN DRIVING IF WEATHER CONDITIONS CHANGE	Y	N	N/A
DOES THE TASK REQUIRE SPOTTERS? (IF YES, COMPLETE #5 - 20)	Y	N	
5. HAS A PRE-MOVE MEETING BEEN HELD TO DISCUSS MOVEMENT IF THIS IS AN ESCORTED MOVE?	Y	N	N/A
6. HAS THE DESTINATION AND TRAVEL ROUTE BEEN IDENTIFIED?	Y	N	N/A
7. HAVE COMPETENT SPOTTERS BEEN ASSIGNED? NAMES:	Y	N	N/A
8. HAS A LEAD SPOTTER BEEN DESIGNATED? NAME:	Y	N	N/A
9. ARE THERE A MINIMUM OF FOUR SPOTTERS ASSIGNED TO MOVE HYDRAULIC CRANES THAT ARE IN TIGHT AREAS?	Y	N	N/A
10. HAVE THE CRANE OPERATOR AND LEAD SPOTTER WALKED THE ROUTE?	Y	N	N/A

11. HAVE OVERHEAD AND GRADE LEVEL OBSTRUCTIONS BEEN IDENTIFIED?	Y	N	N/A
12. HAS THE PROXIMITY TO AN OPEN EXCAVATION BEEN IDENTIFIED?	Y	N	N/A
13. HAS THE ROUTE GROUND CONDITIONS AND ROAD STABILITY (SOFT SPOTS OR SHOULDERS) BEEN IDENTIFIED?	Y	N	N/A
14. HAVE NEARBY ACTIVITIES AFFECTED OR INTERFERE WITH THE MOVE BEEN ASSESSED AND DOCUMENTED?	Y	N	N/A
15. HAVE CLEARANCE TO OBSTRUCTIONS VS. THE CRANE WIDTH AND HEIGHT, BOOM & TAIL SWING RADIUS VERIFIED?	Y	N	N/A
16. WILL ANY COMPONENT OF THE CRANE COME WITHIN 60CM (2') OF ANY OBSTRUCTION?	Y	N	N/A
17. DO THE LEAD SPOTTER AND SECOND SPOTTER HAVE THE APPROPRIATE GEAR? (GAUNTLETS, VISIBILITY VESTS, TRAFFIC CONTROL SIGNS AND RADIOS, AS REQUIRED)	Y	N	N/A
18. ARE SEPARATE TRAFFIC CONTROL PEOPLE REQUIRED?	Y	N	N/A
19. BLOCK TIED BACK WHERE APPLICABLE?	Y	N	N/A
20a. ARE YOU MOVING AN ALL-TERRAIN CRANE WITH EQUIPMENT/ATTACHMENTS INSTALLED?	Y	N	
20b. IF YES # 20a, HAS THE TRAVEL MANUAL BEEN REVIEWED FOR THIS MOVE?	Y	N	
TASK LEAD / SUPERVISOR	Print:	Sign:	
CRANE OPERATOR	Print:	Sign:	
TRAFFIC CONTROL	Print:	Sign:	
LEAD SPOTTER	Print:	Sign:	
SECOND SPOTTER	Print:	Sign:	
CLIENT REP	Print:	Sign:	
COMMENTS:			

MANAGEMENT – SAFETY TRACKING & KPIS



KEY PERFORMANCE INDICATORS – BEST PRACTICES

Contractor and customer develop customer-specific KPIs



RECENT TURNAROUND KPI TRACKING

A	B	C	D	E	F	G	H
	Area	Name	Score (1-10)	Weighting (Points)	Points Earned	Comments	
16	HSE	Reportable Injuries (OSHA Recordables)	10.0	5	5.0	No injuries.	
17		Environmental Incidents Reportable	10.0	5	5.0	No Incidents.	
18		First Aids	0			No First Aids.	
19		Near misses	1			S.I.F. incident with a loss of load (crane mats) offsite near the Naval Air Base.	
20		Housekeeping	9.5	5	4.8	Crew is clearing out our laydown areas and shipping off all unnecessary equipment.	
21		Leadership / Management	9.5	5	4.8	Communication has become better. Working better with coordinators to keep our service in front of the crew work.	
22		Adherence to Site Specific HSE Standards & Policies (including PPE, Permitting, LoTo, reporting etc)	9.5	5	4.8	New Policy adding additional sign off for movements and reconfigurations has been working well. Crews are wearing PPE as directed and are staying diligent on paperwork.	
23		Subtotal	Area Score	25	24.3	9.7	
24	Quality	QA/QC Incidents (# of Non-Conformances Reports)	10.0	5	5.0	All critical lifts, V-11, and V-26 scopes have been completed as planned.	
25		Workmanship / Craft Knowledge	9.5	5	4.8	Crew is knowledgeable of their equipment and required tasks. Shifting some key personnel to nights has been effective.	
26		Subtotal (REMOVED WELD REJECT % & QA/QC)	Area Score	10	9.8	9.8	
27	Scheduling (Plan & prep etc)	Milestone Compliance / Schedule Attainment	9.8	5	4.9	All cranes onsite with critical lifts complete, V-11 complete, and V-26 complete.	
28		Quality of Deliverables	9.8	5	4.9	Equipment has been delivered serviceable and ready to work. Mechanics on both shifts are ensuring that the equipment stays in good operating condition for the duration of the project.	
29		Subtotal	Area Score	10	9.8	9.8	
30	Cost	Cost	9.5	5	4.8	We are meeting equipment and personnel schedules and getting cost in on a timely manner. AT cranes will be coming off consistently this week.	
31		Daily Allocations and Exceptions submitted by 10:00 a.m.daily	9.8	5	4.9	All labor allocated by 10:00 am every day. Equipment allocations entered weekly.	
32		Plan Attainment/Performance	9.8	5	4.9	V-26 completed, and cost came in just below budgeted amount	
33		Cost Tracking & forecasting (i.e. CCM)	9.5	5	4.8	Cost to date at the KPI through the 2/22/20.	
34		Subtotal	Area Score	20	19.3	9.7	

SIF SPOTTING

- SIF = Serious Incidents & Fatalities
 - i.e. a potentially serious incident
 - Integrated into all safety training – CEO to field hands
 - Fosters a safety-first work culture
 - Tracked and shared globally



MANAGEMENT FIELD OBSERVATION

- Why do we do it?
- What do we expect to find?
- How is it tracked?
- How do we follow up?



COMPANY – SAFETY THROUGH INNOVATION

INNOVATION THROUGH COLLABORATION



GYROSCOPIC RIGGING



FOCUS 30 CRANE

SMART
INNOVATIONS





QUESTIONS?

 **MAMMOET**

THANK YOU FOR YOUR TIME

