Liebherr LTM1060-3.1
60T ALL TERRAIN

Plant Risk Assessment

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CRANE SERVICES

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Plant Risk Assessment

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INFORMATION

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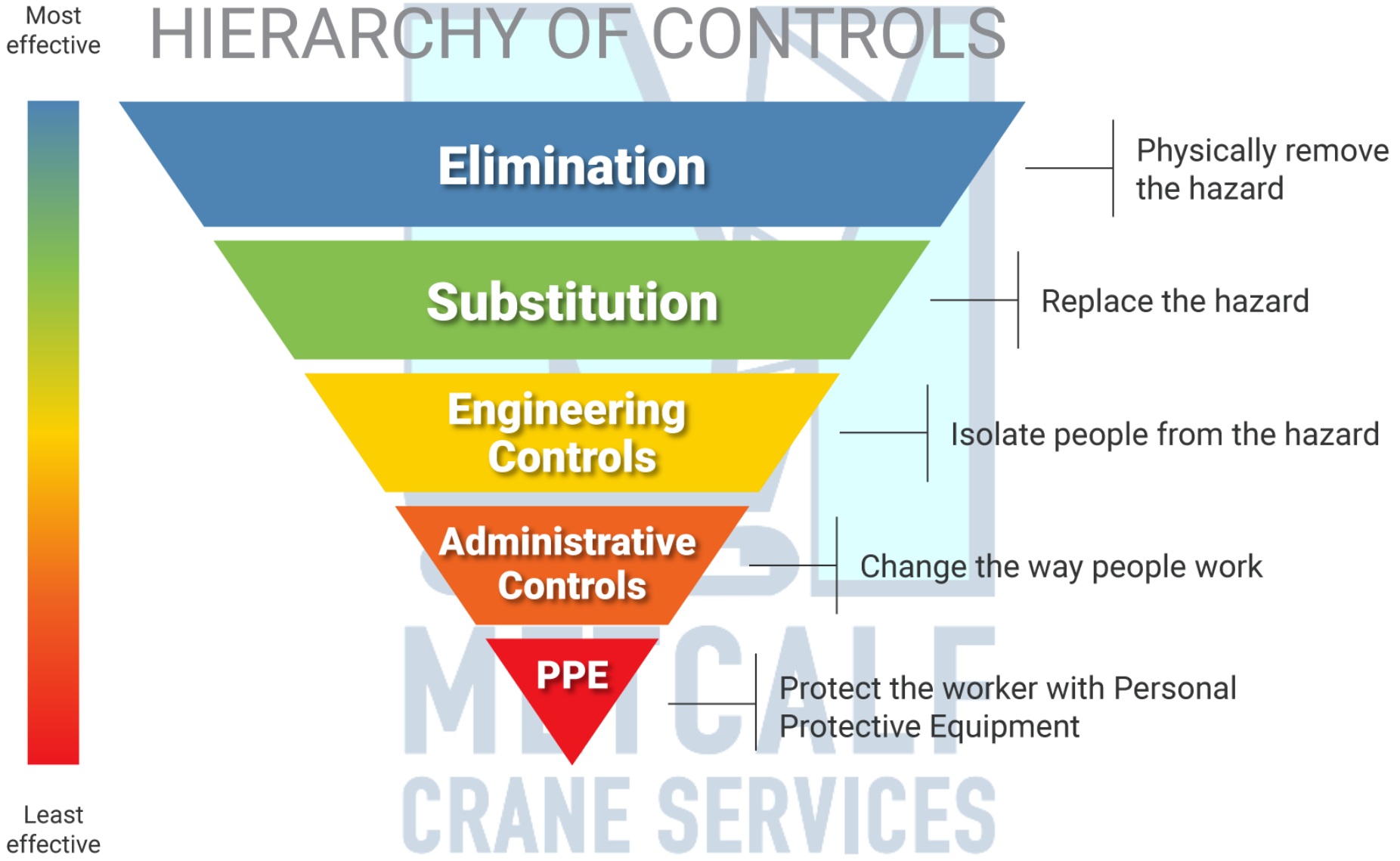
HIERARCHY OF CONTROLS



Risk Matrix							
Consequence	Probability (Likelihood)						
	Severity		A	B	C	D	E
			<1% probability of occurring Never Heard of in Industry	>1% probability of occurring Heard of in Industry	>10% probability of occurring Happened in Company or More than Once per Year in Industry	>50% probability of occurring Happened at the Location Multiple Times	99% probability of occurring Occurs Frequently
			Remote	**Highly Unlikely**	**Unlikely**	**Likely**	**Almost Certain**
	1	Zero	Low	Low	Low	Low	Low
	2	Insignificant	Low	Low	Low	Low	Medium
	3	Minor	Low	Low	Low	Medium	Medium
	4	Serious	Low	Low	Medium	Medium	High
	5	Critical	Medium	Medium	Medium	High	High
	6	Catastrophic	Medium	Medium	High	High	High

	Consequence Categories						
		Health and Safety of People	Damage to Assets (financial impact)	Damage to Environment	Damage to Metcalf Reputation	Law (Compliance with regulations)	Community and Social Damage and Impact
1	Zero	No injury or health effect	Zero	Zero effect	Zero impact	Zero Legal impact	Zero community/social impact Nil damage to
2	Insignificant	Slight injury (First Aid) or health effect or the potential for either	Slight damage or potential to cause slight damage up to $5000	Slight effect or potential to have a slight effect Contained by Engineered means	Slight impact or potential to have a slight impact Public concern restricted to local complaints	Local investigation, minor breach of regulation or technical non-compliance – Prosecution not likely	Inconsequential short-term impact. Public concern restricted to local complaints Negative local media reports
3	Minor	Minor injury (recordable) or health effect or the potential for either	Minor damage or potential to cause minor damage $5,000 up to $50,000	Minor effect or potential to have a minor effect Short term effect on location	Limited impact or potential to have a limited impact Negative local media	Breach of law/regulation or non-compliance. Minor legal issues, minor litigation possible	Repairable damage to objects of cultural/heritage
4	Serious	Severe Injury (lost time) or multiple minor injuries or potential for either	Local damage or potential to cause local damage From $50,000 up to $500,000	Local effect off location or potential to have a local off location effect Moderate-term effect off location	Considerable impact or potential to have a considerable impact Negative state media	Major breach of regulation and significant prosecution Performance Infringement Notice (PIN)	Permanent damage to objects of cultural/heritage significance Major disruption to community wellbeing and social networks for a period of months
5	Critical	Permanent Disability, Fatality or Severe Injury or potential for any	Major damage or potential to cause major damage From $500,000 up to $5m	Major effect or potential to have a major effect Widespread impacts to sensitive public or private areas ground water or water bodies	Major national impact or potential to have a major national impact Negative National Media	Very significant fines and prosecutions, Multiple prosecution and fines	Reduced quality of life within community Significant loss or damage to objects of cultural/heritage significance Severe disruption to community wellbeing and social networks for up to two years
6	Catastrophic	Multiple Fatalities or Multiple Permanent Disabilities or potential for either	Extensive damage or potential to cause extensive damage More than $5m	Massive effect or potential to have a massive effect Widespread impact to sensitive public or private areas, ground water or water bodies	Major international impact or potential to have a major national impact Negative International Media	Potential jail terms and/or very high fines for company and individuals. Prolonged multiple litigations	Community ability to support itself severely impaired Widespread loss of objects of cultural/heritage significance Severe disruption to community wellbeing and social networks for a period of many years

Generic Hazards that Apply to Multiple Sections

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
1	Plant not fit for purpose - Damage to plant/personnel	E	6	H	Plant has been designed and measures incorporated to minimise risks to the health and safety associated with the use of the plant User must ensure that the crane is used per the operating instructions	B	3	L	Prior to use
2	Persons using plant unaware of hazards associated with plant - Damage to plant/personnel and environment	D	5	H	Signs/decals noting hazards and/or required control are placed in locations on crane where hazardous control exists. Signs must be kept complete and legible. Damaged signs to be replaced immediately. Machine shall only be operated by a licenced operator Operator must hold appropriate high risk work license	B	2	L	Prior to use
3	Persons using plant without sufficient instruction, training, and information. - Damage to plant/personnel and environment	E	6	H	Machine shall only be operated by a licensed operator Operator must read, understand and comply with the manufacturers Operating Instructions as detailed in the Operations Manual Operator must familiarise themselves with the machine and the Liccon Computer system, load weights and required configurations of crane components	B	3	L	Prior to use
4	Failure to plan for crane operation relative to job/task - Damage to plant or Collapse of plant	D	5	H	Licensed Crane operator to complete an appropriate lift study before starting lift and engage a qualified Dogger/Rigger to control the load.	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
					Obtain necessary information relating to task and required auxiliary equipment required for task before commencement of activities				
5	Access and egress from operator's cabin - Fall from height	D	4	M	All persons accessing operator's cabin should use cab retractable/extendable step for the purpose of access and egress Maintain 3 points of contact at all times Additional working at heights equipment may be needed to reach specific areas on the machine tasks	B	2	L	Prior to use
6	Pre-operational safety check not performed prior to start up operations - Plant malfunction	E	6	H	Operator to complete a prestart check before commencing crane operations. Prestart to be performed by competent person as per Liebherr instructions Operator must be familiar with requirements for starting up the crane	C	3	L	Prior to use
7	Burns from contact with hot fluids/parts during inspections or maintenance - Burns injuries to personnel	D	5	H	Engine must be cold whilst undertaking pre-start checklist Operator must be familiar with requirements for starting up the crane Persons should be familiar with relevant Safety Data Sheet (SDS) for working with Hazardous Substances for relevant controls for use and handling Allow components to cool off before touching them Proceed with caution when near heated crane components	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
8	Acid splash of fumes from batteries during inspections or maintenance - Fumes inhalation or burns to personnel	D	5	H	Batteries are enclosed under cover Persons should be familiar with relevant Safety Data Sheet (SDS) for working with Hazardous Substances for relevant controls for use and handling battery acid	B	2	L	Prior to use
9	Machine is stated in an unventilated area - Asphyxiation from fume inhalation by personnel	D	4	M	This machine should only be operated in a well-ventilated area Instruct the operator to start the machine in a well-ventilated area	B	2	L	Prior to use
10	Crane driven incorrectly on private or public roads - Damage to plant/personnel and environment from Striking or Crushing	D	6	H	Only a licensed driver with the appropriate national heavy vehicle driver's license shall operate this machine on any roadway Operators should be familiarised with the road driving controls before operation	B	2	L	Prior to use
11	Suspension/axle locking system not set for travel mode - Damage to plant/personnel and environment	D	4	M	Only a licensed driver with the appropriate national heavy vehicle driver's license shall operate this machine on any roadway Operator must read, understand and comply with the Manufacturers Operating Instructions as detailed in the operations manual Operators should be familiarised with the road driving controls before operation	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
12	Exceeding axle load limit resulting in reduced braking performance - Damage to plant Striking/Crushing Injury	D	6	H	Do not exceed specified axle load	B	3	L	Prior to use
13	Field of vision blocked by hook block while in road driving - Traffic accident	D	4	M	Hook block to be secured so as to not impair field of vision Hook block may only be transported at front of machine if permitted by local road regulations and if appropriately lashed	B	2	L	Prior to use
14	Crane moving in area of restricted space, turning, or being driven in reverse - Damage to plant/personnel and environment from Striking or Crushing	D	5	H	Crane is fitted with acoustic and visual warning devices All warning devices are operable when in travel mode Dogman to instruct crane operator on how and when to move and act as spotter for operator Spotter is to remain in positive communication with the operator at all times Crane Operator must hold a National High risk work license for the class of crane Reversing shall be undertaken at slow driving (manoeuvring speed) Operational reversing camera may be fitted	B	3	L	Prior to use
15	Attachments from crane and auxiliary components may be loosened during transport and from prior use of crane	E	3	M	Locks, spring pins and retaining pins must be attached in such a way that they cannot loosen by themselves during travel Integrity of components should be checked prior to and post travel	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
	- Damage to plant/personnel and environment from Striking or Crushing								
16	Crane positioned on ground with insufficient load bearing capacity - Crushing injury/unexpected movement of crane resulting in topple of crane	E	6	H	Support or drive crane only on ground with required load-bearing capacity Monitor Liccon to measure load rating on outriggers before and during lift Use of appropriate outrigger ground support pads to reduce the point loading and increases stability	B	2	L	Prior to use
17	Crane positioned in close proximity to slopes/excavations - Damage to plant/personnel and environment from crushing injury, unexpected movement of crane resulting in topple of crane	E	5	H	An assessment of the ground stability should be made ff any ground surface or conditions indicate a lack of support for the proposed lift Monitor Liccon to measure load rating on outriggers before and during lift Use of appropriate outrigger ground support pads to reduce the point loading and increases stability Crane to be positioned in accordance with permissible ground pressures and safety distances *Note - Pressure must be evenly distributed over the base surface using strong materials to support bad bases*	B	2	L	Prior to use
18	Persons stepping on or placing equipment on crane surfaces not designed for load bearing	D	2	L	All persons to observe crane decals as placed on crane Damaged signs to be replaced immediately	B	1	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
	- Damage to crane				Use walkways where designated				
19	Failure to set up operators' seat to suit user dynamics prior to commencing works - Muscle strain or repetitive strain injury - Ergonomic Injury/ Failure to operate crane in safe manner	D	4	M	Adjustable operator se.at fitted. Seat to be adjusted to suit operator Controls must be able to be handheld within easy reach of' operator The alignment of the door opening, the seat edge and the steering column allows for ease of movement In and out of the seat	B	1	L	Prior to use
20	Loss of traction on steps and walkways - Slips/trips falls	D	5	H	Ensure all walkable· surfaces are clean and slip free Maintain three point of contact and use handrails if fitted when manoeuvring on crane Additional working at heights equipment may be L3 needed for specific tasks	B	2	L	Prior to use
21	Insufficient horizontal alignment (crane positioned on incline) - Crushing injury/ unexpected movement of crane	D	5	H	Crane shall be horizontally aligned (Level) before starting crane operation Crane must not be adjusted whilst holding any load	B	2	L	Prior to use
22	Instability / lack of load support from sliding beams/outriggers - Crushing injury / unexpected movement of crane	C	5	M	Crane to be supported in accordance with load charts Sliding beams and support cylinders must be matched and fully secured by pins (where applicable per OEM) prior to crane operating with load	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
23	Persons standing in crush zone (counterweight land point) - Crushing injury / impact	E	6	H	Persons landing counterweight shall remain clear of drop/placement zone Ensure slewing platform does not collide with	B	2	L	Prior to use
24	Incorrect placement sequence of counterweight/ additional counterweights added to plant - Crushing injury / unexpected movement of crane	D	5	H	Counterweights shall be installed in accordance with the load chart Ensure locking pins are secured	B	3	L	Prior to use
25	Crane located where overhead wires and/or conductors are in slewing range - Electric Shock	D	4	M	Operator to maintain distances and all other requirements as per relevant Statutory Legislation and regulations relating to Overhead power lines Load Moment limiter to be utilised	B	2	L	Prior to use
26	Crane located where aircraft may strike extended boom - Impact Damage	C	4	M	Air space warning provided. Light should be assembled on boom head and turned on when working near air traffic movements contact relevant Aviation Authority to ensure working Within a safe distance and complete required permits	B	2	L	Prior to use
27	Work carried out on crane superstructure or boom during assembly/disassembly or maintenance - Fall from height	E	5	H	Manage the risk of falls with the use of relevant fall restraint devices including appropriate harness and lanyard, working platforms, EWP and machine handrails if fitted during assembly/disassembly, inspection and maintenance work	C	3	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
					If machine components are fitted with restraint handrails, ensure railings are position and secured as prescribed				
28	Reeving/unreeving hook block - Fall from height (slip/trip/fall)/ Cable lash	D	4	M	Competent person to use suitable aids when connecting rope socket to hoist rope (i.e. fly fitted). Ensure the took block fs safely positioned so as to ensure the hook block does not tip over during unreeving. Do not over spool hoist cable Note: reeving process must be in accordance with Operating instructions Manage the risk of falls with the use of relevant faff restraint devices including appropriate harness and lanyard, working platforms and EWP. If machine is components are fitted with restraint handrails, ensure railings are position and secured as prescribed	B	2	L	Prior to use
29	Failure to start up and operate crane in a safe manner - Damage to crane - /Crane overturn, injury to personnel	D	4	M	Crane operator to ensure safety devices (Warning detection systems) are functional and operational Crane shall be aligned horizontally with sufficient load bearing capacity on level surface. A n inclination meter has been provided Hook block or load hook shall be correctly reeved. Hook block to be attached vertically over centre of gravity of load to be lifted. Ensure hoist limit switch weight installed	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
30	Incorrect installation of Section components - Crane Collapse/Falling Load	D	5	H	Combinations of Sections and rods must be as per operations manual or assembly drawings. Operator must consider site layout and conditions when configuring requirements for installation	B	3	L	Prior to use
31	Installing components (Jib Sections) - Fall from heights	D	5	H	Manage the risk of falls with the use of relevant fall restraint devices including appropriate harness and lanyard, working platforms, EWP and machine handrails if fitted Operator must consider site layout and conditions when configuring requirements for installation	B	2	L	Prior to use
32	Falling crane Sections - Falling objects / crushing injury	D	4	M	Installation of components (jib) must be completed in accordance with Manufacturers Instruction manual All Sects must be appropriately pinned and unpinned where appropriate Guy rods must be removed or hung as required Nonadherence will result in Sects folding over or rolling on ground Operator must consider site layout and conditions when configuring requirements for installation	B	2	L	Prior to use
33	Erection or dismantling of Boom - Overload/Toppling crane/Crushing injury	D	4	M	Refer crane operating instructions Boom must only be erected or dismantled in accordance with manufacturers instruction manual and charts provided within.	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
					No person shall stand under Sect components (a suspended load) or within potential fall zone during the erection and dismantling procedure. Liccon overload protection must be set.				
34	Cable damage during Crushing injury installation of hoist cables (Rope) - Crushing injury	D	4	M	Competent person must ensure no slack forms on hoist rope throughout installation The cable must run on the inside of the frame formed by the guying.	B	2	L	Prior to use
35	Uncontrolled movement of loads or machine - Crushing injury	D	5	H	Dogman to instruct crane operator, how and when to move and act as spotter for operator. Spotter is to remain in positive visual contact with the operator at all times Operator to sound warning signal three times before starting a slewing movement Dogman to conduct visual check for people or objects in danger area prior to operation. Lift zone to be demarcated with barricades, caution tape or cones to ensure all movements bystanders are aware of a lift zone and the potential danger of suspended loads. *NOTE: Maximum slewing speeds must not be exceeded* Loads to be set according to load charts, dependent on boom and outrigger configuration.	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
36	Incorrect selection of lifting gear for task. - Falling Object / Crushing Injury	D	5	H	Dogman to assess load and obtain necessary information relating to: - Weight of load to be lifted - Slinging technique required to restrain load through lift - Load's centre of gravity and load weight distribution - Direction of load travel Crane operator to assess setup configuration according to: - Weight of load - Required radius of lift - Distance to reach the pickup of the load and the proposed landing point - Any auxiliary equipment required for the lift before commencement of crane setup	B	3	L	Prior to use
37	Arms and legs may be crushed or severed between rope pulley and rope as rope pulley rotates - Crushing Injury	E	5	H	Ropes or rope pulleys must not be touched during operation Safe distances must be maintained at all times from all moving components during operation	B	3	L	Prior to use
38	Failure of crane hoist rope through breakage of wire, deformation or wear and tear of rope - Falling objects	D	4	M	Hoist Ropes must be checked: - Before or during assembly - At specified regular intervals by a competent person Rope pulleys must be checked: - Before installing hoist rope Ensure all worn or damaged rope pulleys are replaced when identified	B	1	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
39	Failure of Lifting gear Falling objects (chains or synthetic slings) through breakage, twisting or distortion, general wear and tear - Falling objects	D	5	H	Lifting gear must be checked before use by Dog man/Rigger Lifting gear must be checked at regular intervals by a competent person as per Australian Standards for lifting gear. Maintain a lifting inspection register Lifting gear must be stored in a manner to maintain it in good operational condition Rope pulleys must be checked before reeving the hoist rope Worn or damaged rope pulleys must be replaced	B	2	L	Prior to use
40	Falling objects resulting from defective hoist winches (manual) - Crushing injury	D	5	H	Inspect hoist winches for external and functional damage Ensure at least three rope coils remain on drum. L6 of cranes Personnel to keep clear of suspended loads	B	2	L	Prior to use
41	Falling load due to worn hoist rope. - Falling object	D	4	M	Competent person to inspect the hoist rope daily. Refer to Operators Manual for guidance on rope wear Follow all Liebherr maintenance and inspection instructions	B	1	L	Prior to use
42	Persons in load/placement zone - Crushing injury	E	5	H	Operator to visually confirm no persons are in danger zone Operator to exercise extreme caution when lifting load Dogman to instruct crane operator, how and when to move and act as spotter for operator. Spotter to maintain positive communication with the operator at all times.	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
					Dogman to conduct visual check for people or objects in danger area prior to operation Lift zone to be demarcated with barricades, caution tape or cones to ensure all bystanders are aware of a lift zone and the potential danger of suspended loads				
43	Uncontrolled or swaying load - Crushing /striking injury	D	4	M	All crane movements to be executed slowly and delicately. Tag lines to be used to manage the load to prevent swing and spin Competent Dog man, Riggers and Crane Operators (High risk work licence) Follow safety instructions for wind conditions	B	2	L	Prior to use
44	Overloading hoisting Falling object gear or hoisting cable whilst using two hooks - Falling object	D	3	M	Overload protection to be set to the smaller of the two hooks Load Moment Limitation installed to prevent overload whilst using two hooks. Competent operator (high risk work license}	B	1	L	Prior to use
45	Exceeding shut off limits function - Crushing injury/Crane collapse	D	5	H	Crane operation with activated function "Exceed shut off limits of LICCON overload protection" is prohibited	B	1	L	Prior to use
46	Load exceeding the rated load at a specific working radius. - Crushing Injury / Crane Overturn	C	4	M	A load moment limiter is installed with an alarm system attached Operators must not exceed load chart specified working radius	B	1	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
47	Persons stepping into the path of the moving machine. - Crushing /striking injury	D	5	H	Audible Warning Devices installed Visible warning device installed Rotating flashing lights must be operational at all times Air horn to be blasted on start-up of machine Implement traffic management procedure at workplace to minimize pedestrian/mobile plant interaction.	B	2	L	Prior to use
48	Crane hoist rope is overloaded - Falling Object	C	5	M	Rated load moment limiter provided to indicate to operator limit is reached	B	1	L	Prior to use
49	Wire rope running through the pulley may dislodge - Falling Objects	C	5	M	Rope retainers are installed on all sheaves to prevent dislodgement of rope	B	1	L	Prior to use
50	Hook block may collide with boom head - Crushing injury/falling load	D	5	H	Crane fitted with hoist limit switch Function of switch to be checked before every crane application	B	2	L	Prior to use
51	Separation of wedge type rope fittings - Crushing injury/ falling object	C	5	M	Wire clips to be fitted on all ropes above wedge type fittings	B	1	L	Prior to use
52	Dog man/Rigger unable to be clearly seen by operator during operation/slewing of crane	E	6	H	Crane operator only moves crane under instructions of Dogman/Rigger	C	3	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
	- Crushing/Striking Injury				Dogman to instruct ora.ne operator, how and when to move and act as spotter for operator. Spotter to maintain positive communication with the operator at all times by direct visual line of sight, whistle commands or two-way radio Dogman to conduct visual check for people for objects in danger area, prior to operation Hi visibility garments to be worn whilst working around crane Flashing light must be operational to alert bystanders of crane in operations Access to working area (inclusive of slewing range) to be restricted to Dogger/Rigger only by means of soft or hard controls (barricades/work instruction)				
53	Lightning strike - Electric shock	D	4	M	Work to be ceased when the threat of lighting is near Load to be placed down and boom retracted where possible	A	1	L	Prior to use
54	Loads falling on operators' cabin - Falling objects	D	4	M	Operators' cabin enclosed. Steel construction, fully galvanized and powder-coated with safety glass	B	2	L	Prior to use
55	Cuts/burns to hands whilst carrying out rigging activities - Hand Injuries	C	4	M	Hand protection - Rigging gloves to be worn when handling ropes and winches	B	3	L	Prior to use
56	Use of damaged/unsecured ladder for rigging activities	C	5	M	Ladders to be installed as per Operators Manual. Visual inspection of ladders required before use/transport	C	2	M	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
	- Fall from height				Damaged ladders to be replaced immediately. Safety decals to be adhered to				
57	Overload of crane - Crushing injury/ Crane Overturn	D	5	H	Overload protection (Load Moment Limitation) fitted. Operator to determine approximate weight, before determining lift using load chart and considering crane set up (Weight of the load, including hook and rigging equipment attached) If load moment limiter fails, adhere to correct load chart to ensure safe operation of crane if crane in motion Do not lift load off the ground with the aid of the luffing cylinder Do not exceed load limits of crane	C	3	L	Prior to use
58	Overload during dual lift by multiple cranes - Crane overload/crushing injury	C	5	M	Individual cranes shall be loaded in accordance with the permissible load capacities Angular pull or dragging of loads is prohibited	B	2	L	Prior to use
59	Uncontrolled movement of loads due to wind factor - Crushing/Striking injury	C	5	M	Wind Velocity Meter fitted Crane shall only be operated in accordance with maximum permissible wind speeds according to load chart Boom to be retracted where weather conditions are unclear	B	2	L	Prior to use
60	Uncontrolled movement of boom during erection/dismantling activities	D	5	H	Wind speed to be checked before erection or dismantle or crane	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
	- Crushing/Striking injury				Wind Velocity Meter fitted. Load chart provided to show limits of operation Erection / dismantling of boom shall not take place where wind speed does not exceed maximum permissible wind speed according to load chart.				
61	Machine exceeds working radius - Crushing/Striking injury	D	5	H	All works to be carried out within the range of the load chart as supplied, regardless of length of boom installed Load Moment Limitation not to be bypassed. Do not lift load off the ground with the aid of the luffing cylinder.	B	2	L	Prior to use
62	Fall from height during use of emergency exit - Fall from height	D	4	M	Maintain three points of contact when exiting the machine Entry aid (ladder) should be deployed prior to operator exiting cabin Machine should be stationery before cabin is departed	B	2	L	Prior to use
63	Unexpected movement (closure) of open cab door whilst door in inclined position - Crushing Injury	D	4	M	Door to be restrained when staying open during operation Operator to ensure all body parts remain clear of crush zone Operator to use caution when opening/closing cabin door	B	2	L	Prior to use
64	Unexpected movement of crane parked in stationery position during unscheduled maintenance activities - Crushing Injury	D	4	M	Crane shall not be parked on any incline greater than 18% Parking brake must be applied Chocks should be used where vehicle is defective or where parked on an incline	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
65	Maintenance or service activities being undertaken whilst engine running - Contact with moving parts/hydraulic systems	C	3	L	Crane to be isolated from unauthorized access (qualified/competent maintenance personnel only) Isolation system in place must ensure equipment is identified as being out of service and presenting no risk of danger Service technician to apply out of service tag or personal danger tag before starting works Only qualified personnel to undertake mechanical services on plant	B	1	L	Prior to use
66	Falling objects (machine parts or tools of trade) during maintenance activities - Falling object	D	5	H	All personnel to keep clear of any fall zone below work completed at height. Ensure all equipment and machine Sects are mechanically secure and safe from falling before exiting machine post maintenance activities. Barricade work area during maintenance activities	B	1	L	Prior to use
67	Change in operating conditions following interruption to crane operations - Damage to crane/plant or personnel	D	5	H	Operating mode settings to be checked and reset if necessary following any interruption to crane operations	B	2	L	Prior to use
68	Unauthorised access and operation of unsupervised mobile crane - Damage to crane/plant or personnel	E	6	H	Crane to be under full control of operator at all times whilst crane rigged Where full control unable to be provided, load to be removed from hook and crane made into safe condition	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
					Operators cabin to be locked when not in operation to keep out unauthorised persons				
69	Maintenance work involving welding - Electrical shock	C	4	M	Remove battery cables before welding on this machine. Ensure welder earth clamp is attached to the item being attached to machine to avoid current loss or flow via hoist rope, crane superstructure or crane chassis. All electrical equipment shall be inspected before use.	B	1	L	Prior to use
70	Tyre blow out - Damage to plant	C	4	M	Condition of tyres to be checked during per-start operations and at regular service intervals If tyres found to be faulty place machine out of service until repaired	B	3	L	Prior to use
71	Failure to inspect/replace anchor points - Fall from height	C	5	M	Anchor points to be inspected as per maintenance manual	B	3	L	Prior to use
72	Crane collapsed due to the failure of its slew ring bolts - Damage to plant/personnel	D	5	H	Slew ring bolts shall be inspected per the Operators manual by a competent person	B	3	L	Prior to use
73	Instrument readings in the cabin are not correct - Damage to plant/personnel	D	6	H	All load limitation devices must have frequent inspection and testing in accordance with the operator's manual Records must be kept in the crane	B	2	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
					Instruct the operator to immediately request confirmation of accuracy should any doubt arise				
74	Persons operating in an unlit or poorly lit area - Crushing/striking injury	D	5	H	Lighting provided on boom, platform and sliding beams (outriggers) Ensure adequate lighting provided in poorly lit/unlit areas	B	2	L	Prior to use
75	Operator breathing exhaust fumes during normal operation - Atmospheric contaminants	C	4	M	A totally enclosed cabin is provided for the operator Exhaust is directed away from the cabin. Operate with cabin doors closed Ensure crane is maintained, inspected and serviced and is in good operating condition Crane is fitted with cabin air filters and emission control system	C	2	L	Prior to use
76	Clothing, gloves, jewellery or hair are drawn in/entangled in Sheaves/ropes - Entanglement	D	4	M	Engine Bay closed Warning signage displayed on entanglement hazard locations on crane User to communicate hazards to personnel	B	3	L	Prior to use
77	Working upon or being close to moving mechanical parts while wearing loose fitting clothing. - Entanglement	D	4	M	Open drives are adequately guarded within the machinery house The machinery house has lockable doors Machinery house doors must be closed and locked before starting engine	B	3	L	Prior to use

Item#	Hazard	Risk Rating			Control Measures	Residual Risk Rating			Time of Implementation
		P	C	R		P	C	R	
					Hazards to be communicated to personnel Warning signage displayed on entanglement hazard locations on crane				
78	Fire event on board crane - Burns/Smoke Inhalation	D	5	H	A fire extinguisher has been provided Fire extinguisher to be maintained in operable and serviceable condition in accordance with the Australian Standards for Firefighting equipment	B	3	L	Prior to use
79	Injury to personnel being carried in a workbox - Fall from height	D	5	H	Personal shall' only be carried in workboxes suspended by cranes designed to lift and carry personnel. All work boxes to be designed, constructed and maintained and certified by qualified personnel. Each work box shall be fitted with a specified rigging bridge that is designed for that box and shall not be used for any other purpose	B	2	L	Prior to use

Sign Off

We the undersigned, confirm that the PRA nominated above has been explained and its contents are clearly understood and accepted. We also confirm that our required qualifications to undertake this activity are current. We also clearly understand the controls in this PRA must be applied as documented; otherwise, work is to cease immediately.

Name	Qualification Required for this Activity	Signature	Date

Name	Qualification Required for this Activity	Signature	Date