

#### **Plant information**

Plant item:	Maeda MC285C Crawler Crane	Plant identification details (asset/plant no.):	Serial No – P3257		
Project:					
Competency requ	ired to operate the plant:	Slewing mobile Crane (C2) or less Certificate of Compe	with a capacity of 20Tonnes etency.		
	, codes of practice and ards applicable to this	requirement. AS 1418.5 Cranes Hoists a AS 2550.1. 2004 Cranes He Safe Use – General require	Practice May 2018 tice 2006 nd Winches Part 1 – General nd Winches – Mobile Cranes. oists and Winches Part 1 – ments. oists and Winches – Safe use Use operation and		
plant reviewed du	entation relevant to this Iring this assessment? ie nufacturer's Handbook.	SWMS Crawler Crane Operation Maeda MC285C Crawler Crano manual.			
Assessment conc Names and positi	•	Greg Muller	>	Date:	23 September 2020



#### The following risk ranking criteria are used to assess the level of risk for the various aspects involved in a design. Higher risks require increased levels of control.

Cor	nsequence	Safety			Pro	bability					
Substantial	Cannot achieve key team or major	Class 1 (Fatal		Almost Certain	Threat c 75%-99	an be expected to occur. %		10	18	23	25
	program milestone, > x days	Incident)	. 0		Threat will quite commonly occur. 50%-75%			9	17	20	24
Major	Major slip in key milestone or critical path impacted; X-X	Class 1 (Permanent Injury)	Risk	Possible		hreat may occur occasionally. 5%-50%		8	13	19	22
	Days Slip	• •		Unlikely		ould infrequently occur.			12	15	21
Moderate	Major slip in key	Class 2			10%-25	%					
	milestone; not able to meet needed date, X-X Days Slip	(Lost Injury Time)		Rare		nay occur in exceptional ance. 0%-10%	1		11	14	16
Minor	Additional resources/re- planning required to meet need/key date, X-X Days Slip	Class 3 (Minor injury, medical treatment required)		Very Hig High Th	te Threat	Do not proceed Do not proceed Proceed with strict controls Proceed with strict controls Proceed	Negligible	Minor	Moderate	Major	Substantial
Negligible	Minimal or no key impact on dates, X-X Days Slip	Class 3 (Slight injury First Aid)									

Note: Existing SH&EWMS etc are to be reviewed along with other control measures relating to the plant. If the assessment identifies that a SH&EWMS is not fit for the purpose, note this as a corrective action required in the Additional Controls section.



Maintenance and repair assessment (Complete this section for assessment of Major Maintenance and repair activities only – Minor maintenance, inspection and casual access by the operator to included in operational assessment)

Maintenance/repair being assessed:	Yes, records available.		
No. of employees working on (or likely to be working on) plant:	Depending on type of work – mi	nimum 1	Estimate of duration of activity:
Type of activity:	Scheduled frequency.	By whom	Location of maintenance:
Scheduled. Inspections to be carried out per Maeda	Daily	Operator	🛛 On site - 🗌 Off site.
Manufacturer's Operational and Maintenance Manual	• 50hrs	Service Technician	🖾 On site - 🗌 Off site.
Crane Safe certificates to be attached	• 100hrs	Operator	🖾 On site - 🗌 Off site.
	• 250hrs	Service Technician	🖾 On site - 🗌 Off site.
	• 500hrs	Service Technician	🛛 On site - 🗌 Off site.
	• 1000hrs	Service Technician	🛛 On site - 🗌 Off site.
	• 1500hrs	Service Technician	🛛 On site - 🗌 Off site.
	• 2000hrs	Service Technician	🛛 On site - 🗌 Off site.
	10 Yearly	Service Technician	🗌 On site - 🔀 Off site.
🛛 Unscheduled.	When and if it malfunctions	Service Technician	🛛 On site - 🗌 Off site.



Competency requirements for maintenance: (eg electrical, welding, etc)	<ul> <li>(a) A compension of welds</li> <li>(b) A compension of the inspective of the inspecti</li></ul>	etent person inspecting, including knowledge etent person inspecting ection and testing of etent person inspecting ds. This person <b>must</b>	e of non-destructive testing m ng hydraulic systems and circ hydraulic systems. ng electrical systems, includir	competent person. have suitable knowledge and experience in the inspection and testing nethods, and AS/NZS 1554: Structural steel welding. cuitry on the crane should have suitable knowledge and experience in ng the ability to read circuit diagrams and understand relevant technical <b>I electrician</b> where the voltage of the electrical system is greater than						
References (Australian Standards, maintenance manuals etc):	Cranes Hoists and Winches Pa	nd Winches Part 1 – Irt 1 – Safe Use – Ge	General requirements, AS 14 eneral requirements, AS 2759	2018, Risk Management Code of Practice May 2018, AS 1418.1 18.2.1997 Serial Hoists and Winches, AS 2550.1. 2011 Cranes Hoists Steel wire rope – Use operation and maintenance, AS 4024 Safety of c, AS 2550.5. 2002 Cranes Hoists and Winches – Safe use – Mobile						
Identified energy sources:	Diesel State method of isolation: Isolation Tag Procedure									
Other permit to work required?	🗌 Yes 🛛 No	] Yes ⊠ No If Yes, which permits:								



Hazard ic	Hazard identification and risk assessment during operations and/or maintenance activities										
Section 1	Put an <b>X</b> if the hazard does apply to the plant. Leave blank if the hazard does not apply to the plant.	Section 4	Then indicate the Consequence, Likelihood and Risk Rating.								
Section 2	Write where on the plant the hazard exists.	Section 5	Write the existing Controls and relevant Comments relating to additional controls required								
Section 3	Indicate when the exposure is likely to occur? During Operations <b>(O)</b> , Maintenance <b>(M)</b> or Both <b>(B)</b> .	Section 6	Indicate the residual risk taking into account controls being implemented after considering applicable legislation, Codes, Standards, etc.								

SECTION 1 Hazard category and examples	SECTION 2 Where on this plant does this	SECTION 3 Exposure during		Section 4		SECTION 5 Controls and comments	SECTION 6 Residual Risk		
Hazaru category and examples	hazard exist?	O M or B?	Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating
Entanglement ⊠ Arms, hands, fingers, or upper body □ Legs, feet, or lower body ⊠ Hair, clothing, or jewellery □ Cleaning brushes, rags etc	Engine	В	Major	Unlikely	High Threat 15	Ensure hands, fingers, loose clothing, jewellery and other limbs are not exposed to crush/pinch points when conducting maintenance works or pre- start checks.	Major	Rare	High Threat 14
<ul> <li>☑ Isolation of energy sources</li> <li>☑ Other (please specify)</li> </ul>						Ensure lockout at main oscillation before maintenance works commence	Major	Rare	High Threat 14
<ul> <li>Inadequate Access</li> <li>➢ Falling</li> <li>☐ Hitting crane objects with part of body</li> <li>☐ Tools falling causing injury</li> </ul>	Cab access and egress	В	Negligible	Possible	Low Threat 3	Ensure Boots are cleaned of all loose materials and maintain 3 points of contact during access and egress	Negligible	Unlikely	Low Threat 2



SECTION 1	SECTION 2 Where on this plant does this	SECTION 3 Exposure during	Section 4			SECTION 5		SECTION 6 Residual Risk	
Hazard category and examples	hazard exist?	O M or B?	Consequence	Likelihood	Risk Rating	Controls and comments	Consequence	Likelihood	Risk Rating
Crushing/ Draw in/ Nip points ☐ Material falling or being ejected from working area ☑ Uncontrolled or unexpected movement	Complete Crane	В	Major	Possible	Very High Threat 19	Only certified Operator (C2 or Higher) to operate machine in accordance with operators manual. Operator and Service Technician to read manual before operating or working on crane	Major	Rare	High Threat 14
<ul> <li>Nip points</li> <li>Inability to slow, stop, or immobilise plant</li> <li>Isolation of energy sources</li> <li>In-running rollers/gear sets</li> </ul>	Complete Machine	В	Major	Possible	Very High Threat 19	Unsure machine safety labels are correctly positioned as per operators manual Keep fingers, hands and other body parts away from nip points Barricade and sign work area – no unauthorised personnel entry	Major	Rare	High Threat 14
<ul> <li>Plant tipping or rolling over</li> <li>Parts of plant closing or collapsing</li> <li>Trapping between plant and materials or fixed structures</li> </ul>	Track Mounted	0	Major	Possible	Very High Threat 19	Ensure machine stability by operating in accordance with the operator's manual. Ensure ground conditions suitable for machine operations. – firm ground conditions. DO NOT set machine near soft ground, roadside or drilled holes etc	Major	Rare	High Threat 14
Failure resulting in loss of	Complete Crane	В	Substantial	Unlikely	Very High Threat 21	Barricade off and sign work area – No unauthorised personnel entry Before moving machine operator to physically check around crane to ensure a clear zone to manoeuvre	Substantia I	Rare	High Threat 16



SECTION 1	SECTION 2 Where on this plant does this	SECTION 3 Exposure during		Section 4		SECTION 5		SECTION 6 Residual Risk	
Hazard category and examples	hazard exist?	O M or B?	Consequence	Likelihood	Risk Rating	Controls and comments	Consequence	Likelihood	Risk Rating
contents or load ⊠ Falling objects ⊠ Load falling/moving due to power loss or plant failure ☐ Other (please specify)	Jib and Hook	0	Major	Unlikely	Very High Threat 21	Machine maintained in accordance with operators manual. Only certified dogman to sling and direct loads All lifting equipment to be inspected and maintained in accordance with AS All materials to be inspected and secure prior to lifting	Major	Rare	High Threat 14
Cutting/ Stabbing/ Puncturing Contact with sharp parts Contact with flying parts or work pieces	Lift Chains	В	Major	Unlikely	High Threat 15	All lifting equipment to be inspected prior to use by competent person and have current test tag in place and be on site register	Major	Rare	High Threat 14
<ul> <li>Parts or work pieces</li> <li>breaking (disintegrating)</li> <li>Work pieces ejected</li> </ul>	Hook and load	0	Moderate	Unlikely	High Threat 12	Only nominated dogman to direct crane operator.	Moderate	Rare	Moderate Threat 11
<ul> <li>Movement of plant or components</li> <li>Isolation of energy sources</li> <li>Body or body parts caught between moving components</li> </ul>	Complete crane	В	Moderate	Possible	High Threat 13	Access to crane area restricted to operator and authorised maintenance personnel.	Moderate	Rare	Moderate Threat 11
Other (please specify)	Engine	М	Major	Unlikely	High Threat 15	Ensure lockout of main isolation switch before works commence.	Major	Rare	High Threat 14
	Complete crane	В	Major	Unlikely	High Threat 15	All nip points are to be highlighted by stickers or signage Personnel not to place hands, fingers or other body parts in nip zones	Major	Rare	High Threat 14



SECTION 1	SECTION 2 Where on this plant does this	SECTION 3 Exposure during		Section 4		SECTION 5		SECTION 6 Residual Risk	
Hazard category and examples	hazard exist?	O M or B?	Consequence	Likelihood	Risk Rating	Controls and comments	Consequence	Likelihood	Risk Rating
<ul> <li>Shearing</li> <li>⊠ Body or body parts caught between moving components</li> </ul>	Between chains/slings and load	0	Major	Unlikely	High Threat 15	Ensure positive communication between operator and dogman via line of sight and/or radio communication. Ensure lockout of main oscillation switch before works commence.	Major	Rare	High Threat 14
<ul> <li>Isolation of energy sources</li> <li>Body or body parts shear when passing structure.</li> </ul>	Engine	М	Major	Unlikely	High Threat 15	Ensure lockout of main isolation switch before works commence.	Major	Rare	High Threat 14
Friction         ☑ Contact with moving parts or surfaces         ☑ Contact with moving material         □ Isolation of energy sources         □ Other (please specify)	Contact with lift chains	0	Moderate	Possible	High Threat 13	Dogman only to control crane load and also ensure no personnel encroaches the operating area.	Moderate	Unlikely	High Threat 12
<ul> <li>Striking / Impact</li> <li>☑ Uncontrolled or unexpected movement of plant (warning sirens req'd?)</li> <li>☑ Uncontrolled or unexpected movement of components or material (warning sirens req'd?)</li> <li>☑ Moving objects due to parts or work pieces breaking (disintegrating)</li> <li>☑ Work materials protruding into travel path of Crane</li> <li>☑ Normal movement of plant</li> <li>☑ Isolation of energy sources</li> <li>☑ Other (please specify)</li> </ul>	Hook with suspended load.	0	Major	Likely	Very High Threat 20	Audible alarm to indicate all crane movements.	Major	Rare	High Threat 14



SECTION 1	SECTION 2 Where on this plant does this	SECTION 3 Exposure during		Section 4		SECTION 5 Controls and comments	SECTION 6 Residual Risk			
Hazard category and examples	hazard exist?	O M or B?	Consequence	Likelihood	Risk Rating	Controis and comments	Consequence	Likelihood	Risk Rating	
						Ensure a clear path of travel before any crane movements are undertaken.			High Threat 14	
Pressure         □ Contact with fluids or gas under pressure as part of normal operation         ⊠ Contact with fluids or gas under pressure due to failure         □ Contact with fluids or gas under pressure due to misuse         □ Striking due to severed high pressure hoses/couplings         □ Stored energy in machine systems/accumulators counterweights         □ Isolation and bleeding of pressure energy sources         □ Other (please specify)	Hydraulic hoses	В	Moderate	Possible	High Threat 13	Qualified service personnel to maintain as per Maeda service manual	Moderate	Rare	Moderate 11	



SECTION 1	SECTION 2 Where on this plant does this	SECTION 3 Exposure during		Section 4		SECTION 5 Controls and comments	SECTION 6 Residual Risk		
Hazard category and examples	hazard exist?	O M or B?	Consequence	Likelihood	Risk Rating	Controis and comments	Consequence	Likelihood	Risk Rating
Slips/ Trips/ Falls						Ensure access to crane is free of any	Moderate	Rare	Moderate
Uneven or slippery work or access surfaces entering or exiting the plant	Crane work area	В	Moderate	Unlikely	Moderate 12	debris, grease, oil etc before entering.			11
Housekeeping hazards produced by the plant									
Material ejected or falling from the plant									
Inadequate work platforms (size, location, fall protection)									
Access (ladders, stairs, walkways) to and from the plant									
Lack of guardrails or fall protection									
Collapse of the supporting structure									
Other (please specify)									



SECTION 1	SECTION 2 Where on this plant does this	SECTION 3 Exposure during		Section 4		SECTION 5	SECTION 6 Residual Risk		
Hazard category and examples	hazard exist?	O M or B?	Consequence	Likelihood	Risk Rating	Controls and comments	Consequence	Likelihood	Risk Rating
Loss of Stability □ Uneven or slippery work or access surfaces on the plant □ Housekeeping hazards produced by the plant □ Material ejected or falling from the plant □ Inadequate work platforms (size, location, fall protection) □ Access ladders from the plant □ Lack of guardrails or fall protection □ Collapse of the supporting structure □ Other (please specify) □	Access to Crane	В	Major	Possible	Very High Threat 19	Ensure access is clean of oil and debris Maintain 3 points of contact when climbing onto crane	Major	Unlikely	High Threat
Uncontrolled movement ➢ Potential for unknown workers to operate plant whilst being serviced causing safety concerns ☐ Plant fails to respond to controls when needed ➢ Plant operated when "Out of Service" ☐ Other (please specify) 	Main isolation switch	В	Substantial	Possible	Very high Threat 22	Isolate controls to machine before doing any works. Place "Out of Service" tag at main isolation switch	Substantial	Rare	High Threat 16



SECTION 1	SECTION 2 Where on this plant does this	SECTION 3 Exposure during	Section 4			SECTION 5		SECTION 6 Residual Risk	
Hazard category and examples	hazard exist?	O M or B?	Consequence	Likelihood	Risk Rating	Controls and comments	Consequence	Likelihood	Risk Rating
<ul> <li>Plant rolling over/ through limits</li> <li>☐ Tip over hazard.</li> <li>☐ Correct qualifications of operator.</li> </ul>	NA								
Ejection of Parts ☐ Contact with sharp parts ⊠ Contact with flying parts or work pieces ⊠ Parts or work pieces breaking (disintegrating) ☐ Work pieces ejected ☐ Movement of plant or components ☐ Isolation of energy sources ☐ Body or body parts caught between moving components ☐ Other (please specify)	Lift chains	0	Major	Possible	Very High threat 19	Dogman or Rigger to ensure chains are in good condition and within current test period.	Major	Rare	High Threat 14

**Electrical Hazards** 



SECTION 1	SECTION 2 Where on this plant does this	SECTION 3 Exposure during		Section 4		SECTION 5 Controls and comments	SECTION 6 Residual Risk			
Hazard category and examp	hazard exist?	O M or B?	Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	
Electricity (Shock or burns) Contact										
Fire Hazards										
Explosion / Fire Ignition of flammable atmosphere initiated by the plant Ignition of flammable atmosphere initiated by material Ignition of flammable material by the plant Ignition of flammable material by the process Other (please specify) Explosion of battery	Battery	В	Major	Possible	Very High Threat 19	Battery produces flammable gas – no smoking or ignition sources to be placed near battery. When changing battery ensure tools do not contact positive battery post as sparks may ignite flammable gases. When disconnecting battery always disconnect negative cable first.	Major	Rare	High Thre at 14	



SECTION 1 Hazard category and examples	SECTION 2 Where on this plant does this	SECTION 3 Exposure during		Section 4		SECTION 5 Controls and comments	-	ECTION 6 sidual Risk	
Hazard category and examples	hazard exist?	O M or B?	Consequence	Likelihood	Risk Rating	Controis and comments	Consequence	Likelihood	Risk Rating
Working environment and ergonomics ☐ Inadequate lighting levels ☐ Glare from artificial light ☐ Glare from natural light ☐ Placement and identification of controls ☐ Seating design or seating location ☐ Human error or behaviour	Complete Crane	В	Major	Possible	Very high Threat 19	Ensure adequate lighting provided.	Major	Unlik ely	High Threat 15
<ul> <li>aspects (Human factors)</li> <li>Manual handling tasks associated with the plant</li> <li>Cramped or restricted work spaces (particularly for maintenance</li> <li>Noise levels</li> <li>Vibration</li> </ul>						Hearing protection to be worn	Major	Unlik ely	High Threat 15
Atmospheric contamination          Atmospheric contamination         Exhaust fumes         Lack of oxygen         Dust, fibres, vapours         Thermally generated fumes         Restricted spaces         associated with the plant         Other (please specify)	Engine	В	Major	Likely	Very High Threat 20	Air monitoring to be conducted and results recorded. Industrial exhaust extraction fans to be installed.	Major	Unlik ely	High Threat 15



SECTION 1	SECTION 2 Where on this plant does this	SECTION 3 Exposure during		Section 4		SECTION 5		SECTION 6 Residual Risk	
Hazard category and examples	hazard exist?	O M or B?	Consequence	Likelihood	Risk Rating	Controls and comments	Consequence	Likelihood	Risk Rating
Temperature extremes         Open flame, steam or heated air         Exposure to high or low temperature extremes (thermal comfort)         Contact with hot or cold plant components         Contact with hot or cold material         Other (please specify)	N/A								
Condition and suitability of plant Age and condition Service and maintenance history Frequency of use (high or low use or inappropriate duty cycle) Not fit for purpose Unsuitable accessories/fittings Inability to apply	All crane	В	Major	Possible	Very High Threat 19	Crane not serviced and maintained as per scheduled frequency. Ensure maintenance timeframes are adhered to as per manufacturer's requirements.	Major	Unlik ely	High Threat 15
<ul> <li>☐ Inability to apply</li> <li>isolation/lock out devices</li> <li>☐ Accessories in unsafe</li> <li>condition</li> <li>☐ Use in arduous</li> <li>environment</li> <li>☑ Modification from original</li> <li>design</li> <li>☐ Other (please specify) n</li> </ul>						Possible modifications to original design could cause further hazards or reduce structural integrity. Any modifications must be approved by crane manufacturer.	Major	Unlik ely	High Threat 15



SECTION 1 Hazard category and examples	SECTION 2 Where on this plant does this	SECTION 3 Exposure during	SECTION 5			SECTION 6 Residual Risk			
nazaru category anu examples	hazard exist?	O M or B?	Consequence	Likelihood	Risk Rating	Controls and comments	Consequence	Likelihood	Risk Rating
System of work relating to the plant         Emergency procedures relating to the plant         Communication systems associated with plant operation         Communication methods with plant operation         Use of Permit to Work system         Start up and shut down procedures         Secure against unauthorised use/access         Storage or restoration to service requirements         Other (please specify)	Crane start up Limit Switches Wire Ropes Control Switches Chains Crane shut down Control unit Energy supply	В	Major	Possible	Very High Threat 19	Ensure start up procedures are in accordance with manufacturers instructions. Ensure crane has movement alarm and visual light when in operation	Major	Unlik ely	High Threat 15



#### Misc Hazards

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Missing or incorrectly positioned safety related systems Guards missing Lack of signage Lack of communication systems Failure of emergency systems Other (please specify)	Crane area of works	В	Moderate	Possible	High Threat 13	Ensure area of works is clearly defined with signage or delineation as required. Ensure communications between operator and dogman are established	Moderate	Rare	Moderate Threat 11
Failure to ensure competent personnel operate plant            \[         \] Lack of training         \[         \] lack of maintenance         \[         \] No signage on floors indicating location         \[         \] No communication systems functioning         \[         \] Out of Service requirements         \[         \] Shutdown         \[         \] Overloading         \[         \] Other (please specify)         \]	Crane Operation	0	Major	Possible	Very High Threat 19	Ensure ticketed competent operators only operate crane. Ensure operators manual is communicated before works commence. Ensure only certified dogman slings and controls loads.	Major	Unlikely	High Threat 15
Environmental Concerns									
Environmental issues causes failure Inclement weather causes issues Wind fowls cables and snags or breaks cable Water impairs operation	N/A								



$\boxtimes$	Wind speed	exceeds	recommended limit
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Other (please specify)

Wind speed exceeds recommended limit	Other (please specify)	Contact details:	
☐ Wind speed exceeds recommended limit	Other (please specify)	Contact details:	

I have reviewed the Maeda MC285C Crawler Crane Risk Assessment and have had the opportunity to comment and make changes as I thought necessary.

Name:	Position description:	Signature:	Date:	Company:



#### Additional controls:

For each additional control, identify appropriate corrective actions, including priority, timeframes and responsibilities, communicate the requirements to the person responsible and then input the information into the Corrective Action Register.