



## RISK ASSESSMENT OF PLANT

<b>DATE OF ASSESSMENT:</b> January 2015 (Revised April 2016) Preliminary Assessment for Review	<b>PLANT DESCRIPTION:</b> ECOLIFT	<b>ORGANISATION:</b> POWER TOWERS LIMITED. <b>ADDRESS:</b> West House, West Avenue, Wigston, Leicester, LE18 2FB, UK.
--	-----------------------------------	--

This Hazard Identification and Risk Assessment has been prepared based on information available at the date of publication.

The assessment must be reviewed by all stakeholders and revised:

- (a) Having regard to the options and general arrangement of miscellaneous equipment/facilities that may be provided on the plant according to the end users requirements or specification;
- (b) According to the particular circumstances under which the plant is used and maintained;
- (c) As new hazards are identified or as risks are reassessed;
- (d) As new or revised control measures are implemented;
- (e) As and when work procedures are altered.

Although every attempt has been made to identify reasonably foreseeable circumstances no guarantee as to the completeness of this assessment is implied or provided.

This document is not to be interpreted as a compliance assessment; a separate verification should be undertaken on items of plant to determine if they comply with all relevant Australian Standards.

Please consult the relevant Work Health Safety Regulations for information regarding obligations of parties to conduct their own risk assessment. This risk assessment has been prepared on behalf of the organisation listed above and cannot be used by other parties to discharge any duties they may have under relevant law.

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description -  (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
<b>0</b>	<b>General – Device selection and use</b>							
0.1	Persons could be injured when following a poor system of work in relation to the operation of this device.	Operating manual [ECO-Operating and Maintenance Manual – Australia and New Zealand] provided by Power Towers detailing specifications, limitations and residual hazards associated with the operation of the MEWP.	M	Prepare a documented system of work having regard to the operating specification and limitations as detailed in the owners operating manual; AND Verify that the procedure (including maintenance) covers all modes of operation of the MEWP and is a practicable solution; AND Instruct and train the operator in its use; AND Ensure operator's manual is with the MEWP at all times.	Yes  Yes  Yes  Yes	MGMT  MGMT  MGMT  MGMT		
0.2	Persons could be injured if the device is not suitable for the required task.	Standard machine specifications including range charts are included in the manual [page 3].	M	Ensure that the unit is adequately rated in terms of capacity, height and reach, rated inclination and mass; having regard to the required task, the site conditions and the environment; AND Source another MEWP if the specifications do not match the requirements for the task.	Yes  Yes	MGMT  MGMT		
0.3	Persons could be injured or injure others when operating the unit without sufficient information, instruction, training and supervision.	Precaution in manual [page 6] that operators must have adequate training for this type of platform.  Warning decal fitted to MEWP which states, "only trained and authorised operators to use this machine".	M	Ensure that all Standard Work Procedures (SWP's) are effectively implemented; AND Ensure that the operator(s) have read and understand the training and instructions (which must include Manufacturer's and local information).	Yes  Yes	MGMT  MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
0.4	Injury as a result of site specific hazards.	Notes in manual regarding only operating MEWP on hard level surfaces and checking for overhead obstructions [page 7].  AS2550.10 section 4 includes site checks.  Safety decal fitted to MEWP which details checks to be performed when positioning MEWP prior to use; which include: checks for overhead obstructions and that the ground is hard and level.	M	Implement appropriate training to enable operators to identify particular hazards that may be encountered at the site and implement actions to ensure that they are addressed by appropriate means; AND Ensure operators conduct a site hazard assessment before use on each site; AND Ensure operators implement appropriate systems to eliminate the hazards or adequately control the risks associated with the hazards identified; AND Ensure operators feedback information relating to new hazards they have identified so they may be reviewed and implemented in a training package; AND Ensure that if operators are uncertain how to address a particular site hazard that they seek advice from a competent person.	Yes   Yes   Yes   Yes	MGMT   MGMT/OP   MGMT/OP   MGMT/OP		
0.5	Injuries exacerbated as a result of working solo.	Instructions provided in AS2550.10 – 2006 clause 5.14 regarding the assistance that shall be available from ground support personnel prior to operation.  Warning in manual [page 7] that a person should be available at ground level in case of emergency.	M	Ensure that workers do not work solo; Or If not practicable ensure that all operators working solo are equipped with portable communications equipment; AND Establish protocols and procedures to ensure a timely and appropriate response in emergencies in accordance with AS2550.10 requirements;	Yes   Yes	MGMT   MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
				AND Ensure all operators report in when attending site and on a routine basis thereafter.	Yes	MGMT		
0.6	Due to failure to observe or rectify safety upgrades from manufacturer.		M	Ensure that the MEWP is registered with the manufacturer; AND Periodically check the status in respect of safety bulletins or upgrades applying to the MEWP; AND Ensure that safety upgrades provided by the manufacturer are implemented; AND Ensure the manufacturer is advised when the MEWP is disposed of or sold.	Yes  Yes  Yes  Yes	MGMT  MGMT  MGMT  MGMT		
0.7	Persons injured due to unrecognised hazard.	Preliminary Hazard ID prepared and provided for review.	M	Update hazard ID as necessary (see notes on page 1); AND Implement Risk control measures having regard to the hierarchy of control measures available.	Yes  Yes	PTL/MGN T  PTL/MGM T		
<b>1</b>	<b>Mechanical hazards (due to events that may arise during normal operation)</b>							
1.1	Crushing hazard							
1.1.1	Operator is crushed as a result of operation.	Manually propelled MEWP.  Warning provided in manual [Page 7] to check for overhead obstructions when positioning MEWP.  Warning decal fitted which suggests checks for overhead obstruction when positioning MEWP.	M	Ensure that operators, observe the surroundings and move at appropriate speeds; AND Ensure that ground personnel are available to observe and take corrective action if necessary; AND Ensure they are familiar with emergency operation procedures detailed in the operators manual.	Yes  Yes  Yes	MGMT  MGMT  MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		The platform is narrower than the base, so it is not possible to have the guard rail close to a wall.  See also hazard number 1.6.1.						
1.1.2	Ground personnel crushed whilst MEWP is operating.	Platform only moves vertically.  Brakes automatically apply when the platform is raised preventing travel.  Finger trap clearances are maintained between the mast and the base.  MEWP is Group A, Type 1.	L	Ensure that ground personnel keep clear of the MEWP while it is in operation.	Yes	MGMT/OP		
1.1.3	Ground personnel crushed between platform and chassis while platform is lowering.	Warning decal fitted which states: "Hand trap point" (Fig 6A).  Warning sign in accordance with AS1418.10-2011 clause 4.2.13 stating; "Do not enter the area under a raised platform unless it is supported" (Fig 5B).  MEWP is manually operated and platform descent is relatively low speed.  Also see hazard number 17.1.	M	Ensure that personnel do not enter the area underneath the platform.	Yes	MGMT/OP		
1.1.4	Operator crushed due to inadvertent operation.	MEWP raised and lowered via turning handle on flywheel which automatically returns to the locked position when released.	L	Ensure that operators, observe the surroundings; AND	Yes  Yes	MGMT/OP  OP		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
				Ensure that operators check to see if the area beneath the platform is clear before lowering.				
1.1.5	Persons crushed whilst performing maintenance or handling heavy or unsupported items.	Total mass of MEWP is 305kg. Warning in the manual regarding the correct use of lifting equipment when handling heavy components of the MEWP.  Fork lift pockets fitted for lifting the MEWP (3B)  See also hazard number 11.9.4.	M	Train operators to be aware of these hazards; AND Provide necessary equipment to handle items; AND Ensure that only trained personnel are permitted to perform maintenance on the MEWP.	Yes  Yes  Yes	MGMT  MGMT  MGMT		
1.1.6	Repair personnel crushed by falling platform during maintenance.	See hazard number 11.9.1.						
1.1.7	Crush injury as a result of uncontrolled motion while moving MEWP on slope.	Brakes fitted to two wheels on the same axle as per AS1418.10 – 2011 clause 2.2.12.  Note in operations manual [page 7] to check the MEWP is level prior to operation.  Safety decal on MEWP includes a check of the level bubble to ensure the MEWP is positioned on a level surface prior to operation.	M	Ensure that the MEWP is not operated on slopes which exceed the limits listed in the manual; AND Ensure that the MEWP is not moved on slopes.	Yes  Yes	MGMT/OP  MGMT/OP		
1.1.8	Operator crushed while loading or unloading from ute or trailer.	Fork lift pockets fitted for lifting MEWP with forklift.  Transport and lifting instructions in manual as per AS1418.10-2011 clause 4.1.3(a). [P13].	M	Ensure that operators are trained with respect to this residual hazard; AND Ensure that the MEWP is only loaded by using a forklift.	Yes  Yes	MGMT  MGMT/OP		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
1.1.9	Personnel crushed while lifting the MEWP.	Fork pockets fitted to chassis which are identified. (Fig 3B)  Lifting points are identified (Fig 6B).	L	Ensure that only trained personnel are permitted to lift the MEWP; AND Ensure that the proper lifting points are used.	Yes  Yes	MGMT  MGMT/OP		
1.2	Shearing hazard							
1.2.1	Shearing hazard at elevating mechanism (booms, mast, articulating arms etc.).	Mast fitted with interlock to prevent sudden collapse of mast outer/platform.  Cut outs in back of hand wheel are covered.  Warning decal fitted to mast: "HAND TRAP POINT". (Fig 6A)	M	Ensure personnel are trained and aware of this hazard; AND Ensure that the guard is in place before operation.	Yes  Yes	MGMT  MGMT/OP		
1.2.2	Persons injured due to exposure to pinch points/shear points during maintenance.		L	Ensure that only trained personnel perform maintenance activities on MEWP; AND Instruct personnel in respect of proper maintenance procedures.	Yes  Yes	MGMT  MGMT		
1.3	Cutting or severing hazard		NS					
1.4	Entanglement hazard							
1.4.1	Operator becomes entangled in flywheel drive system.	Mechanism fitted with covers.  Warning sign on flywheel cover regarding entanglement hazard.  See also hazard number 11.1.1.	M	Ensure that covers are always in place prior to operation.	Yes	MGMT		
1.5	Drawing-in or trapping hazard		NS					
1.6	Impact hazard							
1.6.1	Operator impacts with overhead obstructions.	See also hazard number 1.1.1.	L	Ensure that a spotter is available to look out for overhead obstructions.	Yes	MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
1.6.2	Impact injury to operator while travelling.	MEWP is manually powered and not permitted to travel in the raised position.  Brake automatically applied when platform is raised.	NA					
1.6.3	Emergency tool slips off hand wheel and strikes incapacitated operator during emergency lowering.	Emergency lowering tool has catch fitted to prevent it slipping off handwheel.	M	Ensure ground personnel are trained in all aspects of emergency lowering procedures.	Yes	MGMT/OP		
1.7	Stabbing or puncture hazard		NS					
1.8	Friction or abrasion hazard		NS					
1.9	High pressure fluid injection hazard							
1.9.1	Injury as a result of a high pressure hydraulic leak while operating the unit.	A very small amount of hydraulic oil is contained within the gas strut. If a sudden failure were to occur, then all exhaust gasses and liquid would remain within the mast inner and outer columns.	L	Ensure that faulty gas struts are disposed of and no attempt at repair or disassembly is performed.	Yes	MGMT		
1.10	Ejection of parts		NS					
1.11	Loss of stability (of machinery and machine parts)	Also see hazard number 23.						
1.12	Slip, trip and fall hazards							
1.12.1	Fall whilst accessing the platform.	Platform is just under 700mm from ground so 1 <sup>st</sup> step is fitted 400mm from ground and projects in front of platform more than 150mm, in accordance with AS1418.10-2011 clause 2.5.8  Warning in manual [page 4] that operators are never to enter or	M	Ensure operators maintain 3 points of contact when accessing the platform; AND Ensure that operators only enter or exit the platform when it is fully lowered.	Yes  Yes	MGMT/OP  OP		



A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		exit the platform unless it is fully lowered.  See also hazard number(s) 8.1.1 & 15.5.1.						
1.12.2	Falling whilst performing maintenance checks.	Pre-operational checks able to be performed at ground level.	M	Ensure that appropriate equipment is used during maintenance where access at height is required.	Yes	MGMT		
1.12.3	Fall from platform while in elevated position.	Platform guard rails conform to AS1418.10-2011 clause 2.5.4.  Gate is inward opening and self closes in accordance with AS1418.10-2011 clause 2.5.6. (however it does not self-lock but has a strong return spring)  The saloon gates comprise of two small gates and only one opening does not open the full entrance width so the operator cannot easily fall from the platform.  The unit cannot travel when elevated and does not have a jib, reducing the risk of ejection.  Warning in operators manual [P4] not to enter or exit the platform unless it is in the fully lowered position.  Note to check that the gates are closed before elevation [P4] and		Maintain platform handrails and gates AND Ensure that the gates are closed before elevation	Yes  Yes	MGMT  MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		also that they open and close correctly [P7]  See also hazard number 22.1.1						
<b>2</b>	<b>Electrical hazards</b>							
2.1	Electrical contact (direct or indirect)							
2.1.1	Persons could be injured due to contact or approach to live overhead electrical apparatus.	Warnings in operators manual [Page 4]  Warning sign at platform.  Legislative requirements to maintain clearances.  Maximum working height limited to 4.2m.  MEWP designed for indoor use only.	M	Ensure that No-go zones and/or clearances and conditions permitted according to local regulation are observed.	Yes	MGMT		
2.1.2	Persons could be injured if the unit is operated while in a confined space forcing reduced clearances.		M	Establish operating procedures to minimize risk when using machine in confined space; AND Review procedures routinely to ensure they can be maintained and followed; AND Instruct personnel in respect to the revisions made. Review operating procedures to ensure that compliance with procedures can be maintained; AND	Yes  Yes  Yes	MGMT  MGMT  MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom  MGMT	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
				Revise procedures if necessary; AND Instruct personnel in respect of revisions.	Yes  Yes	MGMT  MGMT		
2.1.3	Persons could be injured if struck by lightning.	MEWP is designed for indoor use only.  Warning decal on MEWP not to use outdoors.  See also hazard number 18.1.	L	Ensure that the unit is not operated outdoors.	Yes	MGMT		
2.2	Electrostatic phenomena		NS					
2.3	Thermal radiation		NS					
2.4	External influences on electrical equipment							
2.4.1	Control malfunction as a result of external influences.	MEWP is manually powered and not susceptible to external influences.  See also hazard number 6.4.1.	NS					
<b>3</b>	<b>Thermal hazards</b>							
3.1	Burns and scalds by possible contact of persons with flames or explosions and also with radiation from heat sources							
3.1.1	While working in an explosive atmosphere.	Note in the manual that the machine is not to be used in an explosive environment.	M	Ensure unit is not used in a hazardous environment.	Yes	MGMT		
3.1.2	Carrying fuel in platform.	See also hazard number 7.2.1.	M	Ensure no explosive materials or fuel is stored on platform during operation; AND Ensure that hot work is not performed in the platform.	Yes  Yes	MGMT  MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
3.1.3	Smoking in platform or around flammable liquids at worksite.		M	Prohibit smoking on the jobsite; AND Identify potential sources of fuel during site specific hazard ID.	Yes  Yes	MGMT  MGMT/OP		
3.1.4	As a result of MEWP fire.	There are no heat or fuel sources on MEWP.  Few components on the MEWP are combustible.	L	Implement a fire safety plan; AND Maintain fire extinguisher at the job site; AND Train personnel in its use.	Yes  Yes  Yes	MGMT  MGMT  MGMT		
3.2	Health-damaging effects from hot or cold work environment							
3.2.1	Operator injured due to extreme cold or hot temperatures.		L	Ensure operators are provided the appropriate PPE for the working environment; AND Ensure that the period of exposure is kept within acceptable levels.	Yes  Yes	MGMT  MGMT		
<b>4</b>	<b>Hazards generated by noise</b>							
4.1	Hearing loss (deafness), other physiological disorders (e.g. loss of balance, loss of awareness, etc.)							
4.1.1	Noise generated by MEWP.	MEWP is manually powered with no noise sources.	NA					
4.2	Interference with speech communication, acoustic signals, etc.							
4.2.1	Due to poor or absent communication equipment.	MEWP height is less than 4.2m even in the elevated position.	L	Ensure that effective communication can be maintained in all instances where the unit is used.	Yes	MGMT/OP		
4.2.2	Injuries exacerbated as a result of insufficient communication procedures or equipment.		M	Establish and audit routine emergency procedures; AND	Yes	MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
				Ensure that all operators are equipped with portable communications equipment where necessary; AND Establish protocols and procedures to ensure a timely and appropriate response in emergencies; AND Ensure all operators report in when attending site and on a routine basis thereafter.	Yes  Yes  Yes	MGMT  MGMT  MGMT		
<b>5</b>	<b>Hazards generated by vibration</b>							
5.1	Vibration caused by machinery	There are no high speed parts which cause excessive vibration for the operator.	NS					
<b>6</b>	<b>Hazards generated by radiation</b>							
6.1	Electrical arcs							
6.1.1	Caused by welding from the platform.		L	Ensure that SWP's are developed and followed when using the MEWP for welding operations.	Yes	MGMT/OP		
6.2	Lasers		NS					
6.3	Ionizing radiation sources		NS					
6.4	High-frequency electromagnetic fields							
6.4.1	Uncontrolled motions in high-frequency electromagnetic fields.	See hazard number 2.4.1.	NA					
<b>7</b>	<b>Hazards generated by materials and substances processed, used or exhausted by machinery</b>							
7.1	Hazards resulting from contact with or inhalation of harmful fluids, gases, mists, dusts and fumes							
7.1.1	Persons could be injured if the unit is operated indoors without adequate ventilation.	Manually powered.	NA	Ensure that the area where the platform is used has adequate ventilation and free of harmful gases	Yes	MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		There are no sources of harmful gases etc. from the MEWP.						
7.1.2	Burns caused by contact with battery acid.	No batteries fitted on MEWP.	NA					
7.2	Fire or explosion hazard							
7.2.1	Persons injured using toxic chemicals or flammable materials in platform.	See hazard number 3.1.2.						
7.3	Biological and microbiological (viral or bacterial) hazards		NS					
<b>8</b>	<b>Hazards generated by neglecting ergonomic principles in MEWP design (mismatch of machinery with human characteristics and abilities)</b>							
8.1	Unhealthy postures or excessive efforts							
8.1.1	Climbing into the platform.	See also hazard number(s) 1.12.1 & 15.5.1.	NS	Ensure that operators always use 3 points of contact when entering and egress of the work platform; AND Ensure that operators only access and egress from the platform when it is in the stowed position.	Yes  Yes	MGMT/OP  MGMT/OP		
8.1.2	Excessive effort required to turn the flywheel.	Considerable evaluation has been conducted to determine the optimum position for the hand wheel.  Gas strut is fitted to assist in lifting the platform from the lowered position.  Testing of the lifting mechanism (turning the flywheel) reveals that it is easy to raise and lower the platform using this system.	L	Ensure that the lifting mechanism is maintained as per the manufacturer's instructions.	Yes	MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description -  (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
8.1.3	Operator injured if attempts to turn the flywheel while standing outside the work platform.	Warning in operators manual [page 9] not to operate the handle while standing outside the platform.	L	Ensure that the operators are trained in the proper use of the lifting mechanism.	Yes	MGMT		
8.2	Inadequate consideration of human hand-arm or foot-leg anatomy							
8.2.1	During prolonged standing in the platform.		L	Implement a system to ensure that operators do not work excessive or continuous shifts and manage peak demands.	Yes	MGMT		
8.3	Neglected use of personal protection equipment							
8.3.1	Persons could be injured due to exposure to UV.	MEWP designed to be used indoors.	L	Ensure that MEWP is not used outdoors.	Yes	MGMT		
8.3.2	Persons could be injured if equipment is operated while not wearing appropriate PPE.	Requirement specified in AS2550.10.  Note in operators manual [page 4] that correct safety equipment is to be worn by the operator.	L	Provide specification for appropriate PPE including gloves, safety glasses, hard hat and safety footwear as appropriate for the workplace. AND Instruct operators on the requirements for its use. AND Ensure PPE is inspected and certified on a routine basis.	Yes  Yes  Yes	MGMT  MGMT  MGMT		
8.3.3	Persons could be injured if not wearing correct harness and lanyard.	Harness connection points are fitted to the platform.  Safety Decal fitted indicating harness anchor points.  Requirement specified in AS2550.10.	L	Ensure that operators wear and connect the fall restraint harness and lanyard while in the platform.	Yes	MGMT/OP		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Note in operators manual [page 5] that if the operator wears a safety harness ensure that it is a fall restraint harness with a very short lanyard.  Also see hazard number 23.1.7.						
8.4	Inadequate area lighting	See hazard number 12.1.1.						
8.5	Mental overload or under load, stress, etc.							
8.5.1	Persons could be injured if the operator's performance was inhibited by excessive fatigue.	Warning in the manual regarding us of the MEWP if affected by fatigue [P4].	M	Implement a system to ensure that operators do not work excessive or continuous shifts and manage peak demands.	Yes	MGMT		
8.6	Human error							
8.6.1	Injury due to "horse play" or inappropriate use.	Manually powered platform with low working height.  Warning in manual that the MEWP shall not be used inappropriately or engaged in horseplay [P4].	H	Ensure operators do not engage in horse play or stunt driving; AND Ensure that only properly trained personnel use MEWP. AND Ensure that, when not in use, the platform is secured against unauthorised use.	Yes  Yes  Yes	MGMT/OP  MGMT/OP  MGMT/OP		
8.6.2	Persons could be injured if the unit is operated by persons under the influence of drugs and/or alcohol.	Warning in the manual prohibiting the use of the MEWP if under the influence of drugs and/or alcohol [P4].	H	Ensure that operators do not use the MEWP while under the influence of alcohol or drugs; AND Instruct the operator that operation while under the influence of alcohol or drugs are prohibited.	Yes  Yes	MGMT/OP  MGMT		
8.6.3	Persons could be injured if the operator's performance is inhibited by	Warning in the manual prohibiting the use of the MEWP if affected by poor health or if	H	Instruct the operator that he/she must report to the supervisor if suffering poor	Yes	MGMT		



A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
	poor health or medication with side effects.	using medications which impair the operator's ability to use the MEWP safely. [P4].		health and safe operating performance could be affected.				
8.6.4	Persons could be injured from incorrect control selection.	MEWP is manually powered.  Operation is logical for the intended operation.  Sign fitted to control which indicates the direction of rotation for elevation.	L	Ensure that decals are maintained.	Yes	MGMT		
<b>9</b>	<b>Hazard combinations</b>							
9.1	Injuries exacerbated as a result of insufficient procedures or equipment.	Manual lowering system provided.  Emergency lowering instructions provided on decal adjacent the lowering tool (Fig 5A).  Emergency control instructions provided in operators manual [page 8].	L	Establish and audit routine emergency procedures; AND Display emergency phone numbers and contact procedures at the site in ready display to the appropriate personnel; AND Periodically verify emergency equipment and supplies.	Yes  Yes  Yes	MGMT  MGMT  MGMT		
9.2	Operator(s) trapped in an elevated position due to missing emergency lowering tool.	Tool is located on chassis with suitable fixtures.  Pre-operation checks include a check to ensure the emergency lowering tool is attached on the chassis.	L	Ensure that the tool is available to effect emergency lowering if required.	Yes	MGMT/OP		
9.3	Injuries exacerbated due to inability to retrieve platform, e.g. operator slumps over hand wheel preventing emergency lowering.	It is relatively easy to lower platform using the manual retrieval tool when there is a load in the platform above 50kg.	L	Ensure operators are trained in the use of the emergency lowering systems. AND Ensure that persons are available at ground level and are familiar with the	Yes  Yes	MGMT  MGMT/OP		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Analysis and testing have proven that it is physically impossible to slump over drive wheel.		operation of the method to effect retrieval; AND Ensure that an alternative means for accessing the platform is available, e.g. a step ladder.	Yes	MGMT/OP		
<b>10</b>	<b>Hazards caused by failure of energy supply, breakdown of machinery parts, and other functional disorders</b>							
10.1	Failure of energy supply (of energy and/or control circuits)							
10.1.1	Operator trapped in an elevated position due to failure of energy supply.	Lowering system does not rely on stored energy.	NA					
10.1.2	Operator trapped in an elevated position due to failure of lifting belt.	Maximum platform height is limited to 2.2m.  6 monthly checks include examination of the drive belt for signs of wear.	L	Ensure that MEWP is maintained and inspected as per manufacturer's instructions by a competent person.	Yes	MGMT		
10.1.3	Uncontrolled motions due to control system failure (failure of drive belt connections).	Manually powered, raise/lower is achieved by turning flywheel.  Anchorage to inner mast is visible from top with cover removed.  Loss of a pulley or tension will cause safety device to be activated.  Maintenance procedure in manual [P22]	NA	Ensure that the belt and anchorages are inspected as detailed in the manual	Yes	MGMT		
10.1.4	Uncontrolled travel movement in case of failure of energy supply.	Brakes mechanically apply when platform is elevated.  Brakes do not rely on stored energy.	NA					

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Castor wheel is spring loaded so that when the platform is loaded the rubber "feet" are in contact with the ground and prevent travel.						
10.2	Unexpected ejection of MEWP parts or fluids							
10.2.1	Injury as a result of accumulated deterioration during long term storage.	Instructions in manual [Page 15].	M	Ensure that the instructions for storage outlined in the manual are observed and followed. AND Ensure that an annual inspection is comprehensively performed before returning the unit to service.	Yes  Yes	MGMT  MGMT		
10.3	Failure/malfunction of control system	Manually powered, raise/lower is achieved by turning flywheel.  See failure mode analysis for lift drive mechanism.	NA					
10.4	Errors of fitting							
10.4.1	Error due to incorrect fitting of components.	Internal checking procedure is used during the assembly of the critical components.  A further check is made on the final inspection and test.	L	Ensure that only qualified service personnel are charged with the maintenance of the MEWP; AND Ensure they follow the instructions provided in the repair manual.	Yes  Yes	MGMT  MGMT		
10.5	Overturn, unexpected loss of machine stability	See also hazard number 23.						
10.5.1	Overturn while manoeuvring around job site.	Mid rails serve as effective hand holds while pushing or pulling MEWP.	L	Ensure that there are no tools in the tool tray when manoeuvring the MEWP around the job site; AND	Yes  Yes	MGMT/OP  MGMT/OP		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Wheel track provides stable base.  Only to be used on hard level surfaces.		Ensure the platform is not occupied when manoeuvring the MEWP around the job site.				
<b>11</b>	<b>Hazards caused by (temporary) missing and/or incorrectly positioned safety- related measures/means</b>							
11.1	All kinds of guards							
11.1.1	Guard on fly wheel missing.	See also hazard number 1.4.1.  Guards fitted with security screws and locked into position to prevent unauthorised removal.	L	Ensure that only authorised personnel remove any guards.	Yes	MGMT		
11.2	All kinds of safety-related (protection) devices							
11.2.1	Due to safety switches being overridden or missing.	Mast interlock system is enclosed in mast assembly and requires tools to gain access.	L	Ensure that the interlock system is not tampered with or disabled in any way.	Yes	MGMT		
11.2.2	Injury due to unauthorised use.	AS2550.10 clause 5.1(g) provides instructions on locking the MEWP prior to leaving unattended.	L	Provide a lock which prevents unauthorised operation of the MEWP in accordance with AS1418.10 – 2011 clause 2.2.14.  Ensure that the unit is secured against unauthorised use when the platform is unattended. AND Ensure that the MEWP is not lent or sub-hired to any unauthorised person; AND Ensure that only authorised personnel use the MEWP.	No'  Yes  Yes  Yes	PTL  MGMT  MGMT  MGMT		
11.2.3	Failure due to unauthorised alteration or interference.	Note provided in operator's manual prohibiting unauthorised modification [Page 4].	M	Seek advice for all modifications/repairs considered during life of MEWP;	Yes	MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		See also hazard number 16.3.7.		AND Ensure that no additions or alterations are performed on the platform without written approval from the manufacturer or their authorised agent in Australia.	Yes	MGMT		
11.3	Starting and stopping devices							
11.3.1	Emergency stop switches malfunction or missing components.	Manually powered, emergency stops not fitted.	NA					
11.4	Safety signs and signals							
11.4.1	Personnel injured due to missing or illegible safety signs.	See also hazard number 24.1.  Full schedule of signs included in manual	M	Conduct pre-operational checks as described in manual; AND Maintain signs and replace as necessary.	Yes  Yes	MGMT  MGMT		
11.5	All kinds of information or warning devices							
11.5.1	Operations manual missing from MEWP.			Ensure that the MEWP is supplied with all of the relevant operating manuals; AND Ensure that the operator checks that the operations manual is present before operating the MEWP.	Yes  Yes	MGMT  MGMT/OP		
11.6	Energy supply disconnecting devices		NS					
11.7	Emergency devices							
11.7.1	Emergency stops.		NA					
11.7.2	Emergency pump.		NA					
11.8	Feeding/removal means of work pieces		NA					
11.9	Essential equipment and accessories for safe adjusting and/or maintaining	Operator's manual details maintenance requirements and intervals.	L	Ensure that the instructions included in the maintenance manual are followed; AND	Yes  Yes	MGMT  MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
				Ensure that only genuine spare parts are used for replacement.				
11.9.1	Repair personnel crushed by falling platform during maintenance.	See also hazard number 1.1.6.	M	Ensure personnel are trained in correct repair procedures; AND Provide equipment to prevent platform falling such as overhead crane.	Yes  Yes	MGMT  MGMT		
11.9.2	Strains/sprains when removing or performing certain maintenance aspects of the MEWP.		L	Establish appropriate work procedures for all anticipated maintenance issues arising; AND Periodically review these safe work procedures (SWP's).	Yes  Yes	MGMT  MGMT		
11.9.3	Persons may be injured as the result of poor maintenance and/or adjustment procedures.		M	Ensure that the MEWP is tested by a competent person prior to being returned to normal service after repairs and/or adjustment of critical components or systems.	Yes	MGMT		
11.9.4	Persons injured handling heavy or unsupported items.	See also hazard number 1.1.5.	M	Instruct personnel in respect of proper maintenance procedures including the necessity to support items during maintenance.	Yes	MGMT		
11.10	Equipment evacuating gases, etc.	Manually powered.	NA					
<b>12</b>	<b>Inadequate lighting of moving/working area</b>							
12.1	Collision with structures or objects due to inadequate lighting of work site							
12.1.1	Collision due to inadequate lighting at work site.	See also hazard number 8.4.	M	Ensure that sufficient lighting is provided; AND Ensure that operators do not use the MEWP if the lighting is insufficient or becomes insufficient during the performance of the job.	Yes  Yes	MGMT  MGMT/OP		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description -  (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
12.1.2	Persons could be injured if sunlight or bright lights in close proximity impair the operator's vision.	MEWP is for indoor use only.	M	Instruct the operator in relation to the sighting of lights; AND Ensure that operators wear appropriate personal protective equipment (PPE) depending on the site conditions.	Yes  Yes	MGMT  MGMT		
<b>13</b>	<b>Hazards due to sudden movement/instability during handling</b>							
13.1	While personnel are operating MEWP	See hazard number 23.						
13.2	While personnel are moving MEWP around job site	Instruction in the manual that the MEWP is not to be pushed on sloping surfaces such as loading ramps or driveways without a safe method of doing so. [P13]  See also hazard number 14.7.	M	Ensure that MEWP is not pushed on sloping surfaces such as loading ramps or driveways.	Yes	MGMT/OP		
<b>14</b>	<b>Inadequate/non-ergonomic design of driving/operating position</b>							
14.1	Hazards due to dangerous environments (contact with moving parts exhaust gases, etc.)	Manually powered.	NA					
14.2	Inadequate visibility from driver's/operator's position	Operator's position in platform offers a good position to see all parts of the MEWP structure.	L	Ensure a spotter is used if required.	Yes	MGMT/OP		
14.3	Inadequate seat/seating (seat index point)	The operators are standing during operation, no seats provided.	NS					
14.4	Inadequate/non-ergonomic design/positioning of controls	No controls fitted, MEWP is manually powered.	NA					
14.5	Starting/moving of self-propelled machinery	MEWP not self-propelled.	NA					
14.6	Road traffic of self-propelled machinery	MEWP not self-propelled.	NA					

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
14.7	Movement of pedestrian-controlled machinery	<p>Easy to push/pull MEWP on level surface.</p> <p>Guard rail mid-rail provides effective handles for pushing or pulling MEWP.</p> <p>Brake fitted on castor wheel.</p> <p>Instruction in manual stating that the castor brake must be engaged when the machine is parked and left unattended.</p> <p>See also hazard number 13.2.</p>	L	<p>Ensure that MEWP is not manoeuvred on slopes.</p> <p>AND</p> <p>Engage the brake of the castor wheel when leaving the machine unattended.</p>	<p>Yes</p> <p>Yes</p>	<p>MGMT/OP</p> <p>MGMT</p>		
<b>15</b>	<b>Mechanical hazards (due to failure of systems or devices)</b>							
15.1	Hazards to exposed persons due to uncontrolled movement							
15.1.1	Platform lowers due to lifting mechanism failure.	<p>The mast is designed so that it cannot suddenly fall into base.</p> <p>The gas strut is constantly forcing the mast upward and the drive belt is fitted with an interlock so that if it were to fail, the mast would automatically lock.</p> <p>A locking mechanism is fitted which automatically arrests the uncontrolled movement of the mast if the belt brakes (see drive belt interlock.pdf).</p> <p>Maintenance instructions detailed in manual [P10]</p>	L	<p>Ensure that the unit is registered with manufacturer;</p> <p>AND</p> <p>Periodically check for the existence of routine Safety Alerts that may be issued by the manufacturer or the representative;</p> <p>AND</p> <p>Routinely inspect the MEWP in accordance with the manual, by a competent organisation external to operator;</p> <p>AND</p> <p>Monitor local Hazard Alerts and Incident Safety Notices and examine these to determine if they are or could be relevant to the EWP.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>MGMT</p> <p>MGMT</p> <p>MGMT</p> <p>MGMT</p>		



A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		See also hazard number 19.1.						
15.2	Hazards due to break-up and/or ejection of parts							
15.2.1	MEWP could collapse or break up as a result of poor design or manufacture.	Designed & manufactured by Power Towers to comply with the requirements of the European design standards and directives.	L	Ensure that the unit is registered with manufacturer; AND Periodically check for the existence of routine Safety Alerts that may be issued by the manufacturer or the representative; AND Routinely inspect the MEWP by a competent organisation external to operator; AND Monitor local Hazard Alerts and Incident Safety Notices and examine these to determine if they are or could be relevant to the EWP.	Yes  Yes  Yes  Yes	MGMT  MGMT  MGMT  MGMT		
15.2.2	Persons may be injured due to condition of MEWP.	Maintenance instructions provided in operators manual to cover all normal maintenance requirements of MEWP.  See also hazard number(s) 16.3.1 & 16.3.2.	M	Modify maintenance program according to use; AND Undertake inspections per the schedule recommended in the manual; AND Ensure all inspections, servicing, replacement of parts and modifications are entered into logbook.	Yes  Yes  Yes	MGMT  MGMT  MGMT		
15.3	Hazards due to rolling over (roll over protection – ROP)		NS					
15.4	Hazard due to falling objects (falling object protection – FOP)							

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
15.4.1	Ground crew or passer-by being struck by falling tools or objects.	See AS2550.10  150mm high kick panel provided on platform.  Note in operators manual [P4] to ensure the work area around the MEWP is cordoned off from pedestrians and other traffic.	M	Barricade area from public access; AND Ensure that materials are not supported on the guardrails or exceed the confines of the platform.	Yes  Yes	MGMT  MGMT		ii
15.5	Inadequate means of access							
15.5.1	Accessing the platform due to height above ground in lowered position.	Platform can be easily accessed from ground level without the need for ladders etc.  See also hazard number(s) 1.12.1 & 8.1.1.	L	Ensure that operators do not attempt to enter or exit from the platform unless the platform is fully lowered.	Yes	MGMT/OP		
15.6	Hazards caused due to towing, coupling, connecting, and transmission							
15.6.1	Injury from unsecured vehicle whilst transporting.	Tie-down points fitted to MEWP and identified with decals (Fig 6B).  Instructions in manual which cover all aspects of transporting MEWP as required by AS1418.10-2011 clause 4.1.3 (a) [P14].  See also hazard number 16.3.6.	L	Ensure that transportation is performed by competent persons in accordance with established SWP's.	Yes	MGMT		
15.7	Hazards due to batteries, fire, emissions, etc.		NA					
<b>16</b>	<b>Hazards due to lifting operation</b>							

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
16.1	Lack of stability	See hazard number 23.						
16.2	Derailment of machinery	Hi-Rail gear not fitted.	NA					
16.3	Loss of mechanical strength of machinery and lifting accessories							
16.3.1	Injury from using the MEWP in an unsuitable condition.	Routine inspection procedures specified in manual.  See also hazard number(s) 15.2.2 & 16.3.2.	L	Instruct and train operator in inspection requirements having regard to the environment and manufacturer's instructions; AND Maintain and complete MEWP logbook noting all inspections and repairs; AND Ensure routine inspection procedures are formalised and adequately completed; AND Report any deficiencies or faults to management.	Yes  Yes  Yes  Yes	MGMT  MGMT  MGMT  MGMT		
16.3.2	MEWP could collapse as a result of poor structural/mechanical condition due to fatigue/wear.	MEWP is manually powered and is designed for infinite life if maintained in accordance with manufacturer's instructions.  Maintenance checks listed in operators manual [page 9, 10 & 11].  Manually powered machine (low intensity use).  See also hazard number(s) 15.2.2 & 16.3.1.	L	Conduct daily inspection in accordance with procedures outlined in operator's manual before use; AND Inspect the machine in accordance with the instructions outlined in the service manual. AND Observe the recommendations regarding replacement of critical parts.	Yes  Yes  Yes	MGMT  MGMT  MGMT		
16.3.3	Persons could be injured by the unit if operating in poor mechanical condition.	Inspection criteria included in operators manual [page 9, 10 & 11].	M	Ensure that the unit is checked, repaired and maintained by appropriately trained/qualified and	Yes	MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
				experienced personnel in accordance with the checklists contained in the operation manual; AND Modify maintenance program according to use; AND Instruct the operator/competent person to report all faults to management; AND Ensure all inspections, servicing, replacement of parts and modifications are entered into logbook; AND Use equivalent replacement parts; AND Log replacement.	Yes	MGMT		
16.3.4	Structural failure because of loose or missing fasteners.	Daily inspection includes checks for loose fasteners [page 7].	M	Ensure that the unit is checked, repaired and maintained in accordance with the checklist contained in the service manual, by a competent person; AND Ensure results are entered into the logbook.	Yes	MGMT		
16.3.5	Structural failure due to weld faults.	Manually powered MEWP implying high fatigue life.  Note in manual reference daily pre-operation checks.		Ensure that pre-operational inspections are performed and the results documented; AND Perform regular maintenance checks as listed in the operator's and maintenance manuals.	Yes	MGMT/OP		iii
16.3.6	Persons could be injured as a result of structural fatigue failure – Road Transport.	Tie down points provided and labelled on MEWP.	M	Ensure the operators are instructed to properly stow unit prior to transportation;	Yes	MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		See also hazard number 15.6.1.		AND Ensure the boom & platform is restrained during transportation.	Yes	MGMT/OP		
16.3.7	Failure due to unauthorised alteration or interference.	See hazard number 11.2.3.						
16.3.8	Failure due to ingress of moisture and debris into turret/ and masts resulting in corrosion.	All ferrous metals are primed and painted to prevent corrosion.  Drain holes fitted in base to prevent build-up of moisture.	L	Regularly inspect the interior of the MEWP elevating structure; AND Clean the unit of all debris; AND Reinstate all damaged covers.	Yes  Yes  Yes	MGMT  MGMT/OP  MGMT		
16.3.9	Injury as a result of excess water/debris in platform.	Open platform fitted which prevents an accumulation of water.	L	Ensure that the platform is cleaned regularly to prevent a build-up of debris.	Yes	MGMT/OP		
16.4	Uncontrolled movements							
16.4.1	Structural failure due to dynamic loading.	MEWP is manually powered	NA					
16.4.2	Structural failure due to operation on a slope greater than the design slope	Level bubble provided on chassis.  Note in operators manual [page 7] to operate on level ground and that bubble is centred.  Daily check of level specified in manual [P9]  Warning decal fitted which states that MEWP can only be operated on level support surfaces fitted (Fig 7B).  Additional notes in AS2550.10.	L	Ensure that the MEWP is operated within the rated slope limitations specified; AND Ensure that the spirit level is inspected as detailed in the operator's manual.	Yes  Yes	MGMT/OP  MGMT/OP		iv

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Also see hazard number <b>Error! Reference source not found..</b>						
16.4.3	Structural failure due to excessive wind.	ECOLIFT Specification plate includes warning that MEWP is for indoor use only.  ECOLIFT Guidelines for use decal include warning that MEWP is not to be used outdoors.  See also hazard number(s) 20.2.2 & <b>Error! Reference source not found..</b>	L					
<b>17</b>	<b>Inadequate view of trajectories of the moving parts</b>							
17.1	Ground personnel crushed by moving platform.	Control positions provide the operator with visual contact with the resulting platform movements.  Also see hazard number 1.1.3.	M	Ensure that personnel do not enter the area under the platform unless in emergencies.	Yes	MGMT		
<b>18</b>	<b>Hazards caused by lightning</b>							
18.1	Persons could be injured if the unit is operated during storms.	See hazard number 2.1.3.						
<b>19</b>	<b>Hazards due to loading/overloading</b>							
19.1	Maximum rated capacity is exceeded.	The maximum rated capacity is displayed on the platform.  The maximum rated capacity is listed in the operator's manual [page 3].	M	Verify expected loading and confirm it is less than Rated Capacity; AND Audit the rated capacity of the anticipated load on a regular basis.	Yes  Yes	MGMT/OP  MGMT/OP		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		<p>The maximum rated capacity is displayed on the manufacturers ID plate.</p> <p>Small platform fitted.</p> <p>The lift mechanism has been designed and load tested to 10 times the maximum payload to ensure it cannot be overstressed.</p> <p>The SWL is clearly marked on the platform and gross overload (e.g. 2 x SWL) will be very difficult for any operator to elevate with.</p> <p>See also hazard number(s) 15.1.1, 20.1.1, 20.2.1 &amp; 23.1.4.</p>						
19.2	Maximum manual force is exceeded.	<p>Maximum manual force specified in manual, on platform and on ID plate.</p> <p>See also hazard number 20.2.3.</p>	M	Ensure that the operators are trained with respect to this risk and do not exceed the limits.	Yes	MGMT		
<b>20</b>	<b>Hazards due to lifting persons</b>							
20.1	Mechanical strength							
20.1.1	Mechanical strength of lifting mechanism is insufficient to support platform loads.	<p>The lift mechanism has been designed and load tested to 10 times the maximum payload to ensure it cannot be overstressed.</p> <p>The SWL is clearly marked on the platform and gross overload (e.g. 2 x SWL) will be very difficult for any operator to elevate with.</p>	L	<p>Verify expected loading and confirm it is less than Rated Capacity;</p> <p>AND</p> <p>Audit the rated capacity of the anticipated load on a regular basis.</p>	<p>Yes</p> <p>Yes</p>	<p>MGMT/OP</p> <p>MGMT/OP</p>		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Platform meets requirements for enhanced overload criteria.  Also see hazard number 19.1.						
20.2	Loading control							
20.2.1	Structural failure due to platform overload.	See hazard number 19.1.						
20.2.2	Structural failure due to excessive wind.	See hazard number 16.4.3.						
20.2.3	Structural failure due to excessive manual force.	See hazard number 19.2.						
<b>21</b>	<b>Controls</b>							
21.1	Movement of work platform	MEWP is manually powered.	NA					
21.2	Safe travel control	MEWP is manually powered.	NA					
21.3	Safe speed control	MEWP is manually powered.	NA					
<b>22</b>	<b>Falling of persons</b>							
22.1	Personal protective equipment							
22.1.1	Operator falls from elevated platform.	Requirements per AS2550.10.  Safety Harness anchorages provided.  Platform guard rails comply with AS1418.10 – 2011 clause 2.5.4.  Warning in operators manual [page 4] not to enter or exit the platform unless it is in the fully lowered position.  See also hazard number 1.12.3.	M	Assess fall risk having regard to possible work procedures and wear a restraint system attached to the anchorage point if required. AND Ensure that personnel do not exit the platform except at ground level. Audit use.	Yes  Yes	MGMT/OP  MGMT		



A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
22.1.2	Stepping out of elevated platform onto structures.	Refer to requirements per AS2550.10, see clause 5.9 and figure 5.9(B).  Warning in operators manual [page 4] not to enter or exit the platform unless it is in the fully lowered position.	H	Ensure that operator egress at heights is prohibited unless in an emergency and there is a safe means to do so; AND Ensure that the operator does not egress from the platform at height unless secured via a twin lanyard assembly to a secure anchor point on a fixed structure; AND Refer to requirements per AS2550.10, see clause 5.9 and figure 5.9(B).	Yes  Yes  Yes	MGMT  MGMT/OP  MGMT/OP		
22.1.3	Use of step ladders or stools in platform.	Requirements per AS2550.10.  Warning in the operators manual [page 4] not to use ladders in the platform to gain additional height.	M	Ensure that operators do not use any means to gain additional height; AND Ensure the correct MEWP is used for the particular task at hand.	Yes  Yes	MGMT/OP  MGMT/OP		
22.2	Trapdoors	No trapdoors fitted.	NA					
22.3	Work platform tilt control	Platform level is fixed and cannot be altered.	NA					
<b>23</b>	<b>Work platform falling/overturning</b>							
23.1	Falling/overturning	See also hazard number(s) 1.11, 10.5, 13.1 & 16.1.						
23.1.1	Persons could be injured as a result of instability or overturning.	A level gauge is fitted to the chassis.  A specification plate is fitted indicating the maximum payload, and inclination of the chassis.  EN280 specifies the minimum requirements for stability which the machine comfortably exceeds and has been proven by practical testing.	M	Train operators in respect of proper siting and precautions necessary to ensure stability; AND Audit work practices accordingly.	Yes  Yes	MGMT  MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk?	Risk	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
		Describe the risk control measures ALREADY implemented	L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable					
23.1.2	Overtuning due to collapse of support surface.	Additional notes in AS2550.10.  Maximum wheel loads displayed on MEWP.	M	Ensure the unit is not set up on rough, soft or otherwise hazardous surfaces; AND Seek advice regarding ground/surface capacities as necessary; AND Document procedures.	Yes  Yes  Yes	MGMT/OP  MGMT/OP  MGMT		
23.1.3	Overtuning as a result of setting up on uneven surfaces.	Warning in the manual that the MEWP is not to be operated on uneven surfaces [P7].	M	Ensure that operators are trained relating to proper setup, including the necessity to set up on flat surfaces within the limits specified both fore and aft and sideways; AND Ensure operators follow these requirements; AND Ensure that operators follow the instructions given in the operators & service manuals regarding site checks, special limitations and service information.	Yes  Yes  Yes	MGMT  MGMT  MGMT		
23.1.4	Overtuning due to overloading the platform.	See hazard number 19.1.						
23.1.5	Pushing or Pulling objects with platform.	Warning in the manual that operators must not push or pull objects with the platform [P4].	M	Ensure that operators do not exert lateral force greater than that specified AND Ensure that operators do not push or pull objects with platform	Yes  Yes	MGMT  MGMT		
23.1.6	Due to tyre/wheel/castor failure.	Daily inspection includes checks of the wheels.  Routine checks and replacements included in manual [PP10,12]	L	Ensure operators perform checks of wheels/tyres before using MEWP; AND Ensure that wheels/castors are replaced as necessary with original specification.	Yes  Yes	MGMT  MGMT		

A	B	C	D	E	F	X	Y	Z
Hazard No.	Hazard Description - (the situation or parts of plant which could cause injury or illness)	Is there any risk? Describe the risk control measures ALREADY implemented	Risk L = Low M = Med. H = High E = Extreme NS = Not Significant NA = Not Applicable	Proposed SUPPLEMENTARY risk control measure	Are the control measures practicable?  Yes/No	For Action by whom	Confirmation that the necessary action has been completed	Notes
23.1.7	Overtuning due to operator falling out of platform while attached to the harness & lanyard.	See hazard number 8.3.3.	L					
23.2	Acceleration/braking		NA					
<b>24</b>	<b>Markings</b>							
24.1	Personnel injured due to missing or illegible safety signs.	6 monthly inspections include a check of the safety decals.  See also hazard number 11.4.1.	M	Train operators in relation to the meaning of the markers; AND Ensure that the operator carries out the pre-operational check of safety decals before use.	Yes  Yes	MGMT  MGMT/OP		

<sup>i</sup> AS1418.10 clause 2.2.14 requires a lock to prevent unauthorised use which is not practicable on a manually powered machine. Clause 2.2.8 exempts manually operated MEWPs from all safety requirements that cannot be met without a power supply.

<sup>ii</sup> Clause 2.5.7 stipulates a maximum gap of 15mm between toe guards and access gates and the floor and the gate.

<sup>iii</sup> Transport is a common source of fatigue so it is recommended that inspection of critical welds is performed as part of a preoperational inspection. It is also required under AS2550.10-2006.

<sup>iv</sup> The level bubble does display the permissible limit of inclination.

**NOTES:**

1. PTL: Refers to Power Towers Limited.
2. MGMT: Refers to the person legally responsible for the use of the unit; it generally means the employer, the company or the legal entity that has responsibility under the Health and Safety legislation in the State or Territory in which the unit is being used.
3. OP: Is the operator, authorized by management and responsible for the operation and preoperational inspection and use of the unit.
4. OWNER: Is the person or organisation that owns the unit and is responsible for its condition and state of repair.
5. MEWP: The term MEWP refers to the **M**obile **E**levating **W**ork **P**latform.

**GENERAL NOTES:**

1. *This Risk Assessment has been prepared for Power Towers Limited for the subject plant and is not transferable to other plant or parties.*
2. *Item Numbers refer to hazards, which can exist if the unit is not adequately maintained – e.g. Guards not fitted, gauges fail to correctly display readings etc. The measures listed to control risks arising from this type of hazard can include reference to operating procedures. Operating Procedures cannot make the operator responsible for inadequate maintenance/repairs etc but is only intended to ensure that the procedures include the need for the operator to report any faults detected.*
3. *This Hazard Identification and Risk Assessment document has been prepared based on information available at the date of publication. In order to ensure this Hazard Identification, Risk Assessment, Risk Control document is **both accurate and complete**; "Management of the Unit" must review it:*
  - (a) **According to the particular circumstances under which the plant and/or process is used and maintained,**
  - (b) **As new hazards are identified or as risks are re-assessed,**
  - (c) **As new or revised control measures are implemented,**
  - (d) **As and when work procedures are altered.**

*Although every attempt has been made to identify reasonably foreseeable circumstances, no guarantee as to the completeness of this assessment is implied or provided.*

4. *"Preliminary" is placed in this document to indicate that the Controls listed in **Columns C and E** are a practicable way of controlling the risks arising out of the Hazards listed in **Column B**. "Preliminary" status remains in place until the "Management of the Unit" agrees that the assessment is complete and that the controls proposed are practicable.*
5. ***Column Y** has been provided on the document to allow the "Management of the Unit" to record that their Hazard Identification, Risk Assessment, and Risk Control process has been completed and that all controls are in place and operating. When **Column Y** is completed, the document becomes a record of the completeness of the process and the documentation (subject to any changes which need to be further reviewed in accordance with Item 3 above).*
6. *The use of the word "AND" or "&" in the supplementary risk control measure column is intended to mean that the combination of risk control measures are to be implemented on the whole not in part.*
7. *The determination of risk, column D, is a subjective assessment based on the following factors: exposure – the number of times humans are exposed to the risk, the probability of the hazard arising, and the consequence of the hazard – death or serious injury.*

## **Risk Management**

*Risk management is a five-step process for controlling exposure to health and safety risks associated with hazards in the workplace. To properly manage exposure to risks, a person must:*

- (a) Identify hazards;*
- (b) Assess risks that may result because of the hazards;*
- (c) Decide on appropriate control measures to prevent or minimise the level of the risks;*
- (d) Implement control measures; and*
- (e) Monitor and review the effectiveness of the measures.*

*Hazards and risks are NOT the same thing.*

*A **hazard** is something with the potential to cause harm. This can include substances, plant, work processes or other aspects of the work environment.*

***Risk** is the likelihood that death, injury or illness might result because of the hazard.*

*As examples:*

- The hazard is electricity—the risk is the likelihood that a worker might be electrocuted because of exposure to electrical wires that are inadequately insulated.*
- The hazard is a 40 kg bag—the risk is the likelihood that a worker might suffer back strain from manually lifting 40 kg bags.*
- The hazard is carbon monoxide—the risk is the likelihood that a worker might suffer carbon monoxide poisoning because they are using a petrol-operated pump in a well.*

*When undertaking risk management:*

- (a) Involve workers in the process; (it is legal requirement that all stakeholders are consulted)*
- (b) Don't use it to justify a decision that has already been made;*
- (c) Consider good industry practice; and be aware of the current State of Knowledge in relation to the hazard*
- (d) Record any risk management activities undertaken.*

*Under the relevant Workplace Health and Safety Acts, to properly manage exposure to risks, a person should consider the appropriateness of control measures in the following order (sometimes referred to as the 'Hierarchy of Control'):*

- (a) Eliminating the hazard or preventing the risk; or*
- (b) If eliminating the hazard or preventing the risk is not possible, minimising the risk by measures that must be considered in the following order:*
  - (i) Substituting the hazard giving rise to the risk with a hazard giving rise to a lesser risk;*
  - (ii) Isolating the hazard giving rise to the risk from anyone who may be at risk;*
  - (iii) Minimising the risk by engineering means;*
  - (iv) Applying administrative measures; and*
  - (v) Using personal protective equipment.*

*Examples of subparagraph (iii)—redesigning work, plant, equipment, components or premises.*

*Examples of subparagraph (iv)—training, reasonable hours of work.*

*The higher in the hierarchy of control, the better and more reliable the control is. In practice, several control options are often used in combination. Personal protective equipment is usually used in conjunction with other control measures.*

*Control measures must be implemented before work commences.*

**Risk Ranking Matrix**

CONSEQUENCES TABLE

Level	Descriptor	Examples
1	Insignificant	No injuries, low financial loss
2	Minor	First aid treatment, on-site release immediately contained, medium financial loss
3	Moderate	Medical treatment required, on-site release contained without assistance, high financial loss
4	Major	Extensive injuries, loss of production capability, off-site release with no detrimental effects, major financial loss
5	Catastrophic	Death, toxic release off-site with detrimental effect, huge financial loss

NOTE: Measures used should reflect the needs and nature of the organisation & activity under study, e.g.in high risk industries multiple fatalities and fatalities may be separated into several levels.

LIKELIHOOD TABLE

Level	Descriptor	Examples
A	Very likely	Is expected to occur in most circumstances
B	Likely	Will probably occur in most circumstances
C	Moderate	Might occur at some time
D	Unlikely	Could occur at some time
E	Rare	May occur only in exceptional circumstances

NOTE: Measures used should reflect the needs and nature of the organisation and activity under study.

MATRIX TABLE

Likelihood	Consequence				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Almost certain (A)	H	H	E	E	E
Likely (B)	M	H	H	E	E
Moderate (C)	L	M	H	E	E
Unlikely (D)	L	L	M	H	E
Rare (E)	L	L	M	H	H

The risk level read from the matrix defines the priority for action or the importance for review. Again the actions required for a particular risk level should be customized to the particular circumstances.

Possible actions are:

E= Extreme risk—consider stopping work (who decides which boxes contain E?)

H= High risk—should be reduced as soon as possible.

M= Moderate risk—management responsibility and action dates must be specified

L= Low risk—manage by routine procedures

The matrix suggests four different action levels but could equally be divided into a larger number of priority levels. There is merit in assigning all events that have the potential for a fatality priority 1 unless they are so unlikely that they are not expected ever to occur. This ensures that controls for preventing fatalities receive priority attention even where they are believed to be good.

*Notes on using the matrix method*

The strengths of this method are:

- The analysis provides a ranking of risk.
- The method encourages the risk analyst or team to understand the hazard in order to rank the significance of the risk.

The major problems involved in applying such a method are:

- People guess levels of likelihood and consequence without sufficient analysis of the hazard or existing controls.

- The analysis methodology is applied to a risk where the circumstances of occurrence are rare. For example, suppose a person was exposed to a hazard for a short period of time, once every 10 years. Suppose also that that hazard was almost certain to cause fatality upon each exposure. It would be incorrect to use a simple methodology whereby the likelihood of the consequences was ranked relatively lowly at once in 10 years. In that particular example the likelihood of fatality is certain once exposure occurs. An amended methodology will be required to deal with those circumstances such as the fine risk score calculator.
- Since judgements of consequences and likelihood are highly subjective the matrix does not work well as a decision tool, particularly concerning the need for action on high consequence low probability risks.

### **WARNING**

The risk ratings used in this document are intended to stimulate discussion from the parties affected by the use of the subject MEWP; they shall not be adopted as the most appropriate risk rating without sufficient consideration by the designer, manufacturer, management or user of the plant.