

# Safe Use of Vehicle Loading Cranes

Points to Remember from the DVD

“Safe Use of Vehicle Loading Cranes”

An initiative of The Crane Industry Council of Australia

Funded by CraneSafe®

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2013

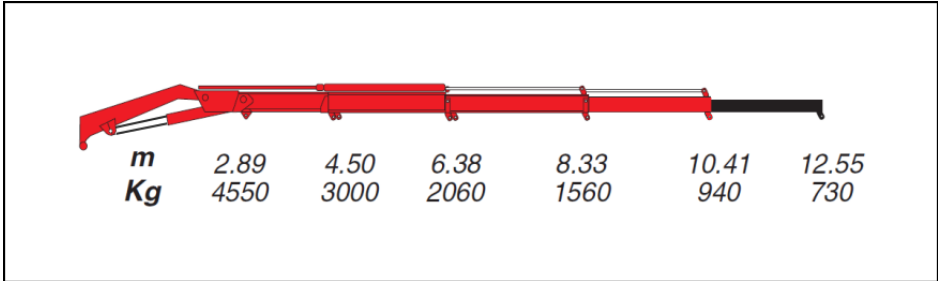
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For more information on CICA and CraneSafe visit

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1.	You are <i>never allowed to overload</i> a crane
2.	No operator, no load... <i>It's against regulations</i>
3.	No one is to be lifted on a load or on the hook... <i>It's against regulations</i>
4.	<b>Never</b> lift a load over anyone's head & don't stand beneath a loaded boom
5.	Before a lift is started you must <b>PLAN THE LIFT</b> – this means: <ul style="list-style-type: none"> <li>• Consider the <b>Job Requirements</b> – can the crane do the lift safely?</li> <li>• <b>Identify all hazards</b> – determine the risks</li> <li>• <b>Control all hazards</b> – eliminate or reduce the risks to an acceptable level</li> <li>• Consider <b>what needs to be in place before the lift starts</b> (eg. Traffic management etc.)</li> </ul>
6.	<p><b>Typical Hazards include:</b></p> <ul style="list-style-type: none"> <li>• Ground conditions</li> <li>• Underground services</li> <li>• Slopes</li> <li>• Obstructions</li> <li>• Trees</li> <li>• Lighting</li> <li>• Weather- wind, rain, lightning etc.</li> <li>• People – other workers, pedestrian</li> <li>• Traffic</li> <li>• Other machinery</li> <li>• The load itself</li> <li>• Power lines &amp; other overhead obstructions</li> </ul>
7.	<p>When working near <b>Power Lines:</b> (Reference Australian Standards)</p> <ul style="list-style-type: none"> <li>• Keep to specified clearances (<i>No Go Zones with spotter</i>) <b>3m</b> from Low Voltage / Wires on Poles - <b>8m</b> from High Voltage / Wires on Towers</li> <li>• <b>Bunt off</b> a safe area around the crane</li> <li>• Use a <b>spotter</b></li> <li>• Use a <b>Tag Line</b></li> <li>• Wear all appropriate <b>PPE</b></li> <li>• <b>Earth</b> the vehicle</li> <li>• Remember: <b>Tiger Tails</b> do not allow you to work closer than the above clearances; they are there as a visual reminder only!</li> </ul>
8.	If you need to work <i>closer to power lines</i> than the prescribed clearances, this can only be done with <b>WRITTEN PERMISSION</b> from the local power supply company.

9.	<p><b>Typical <u>Hazard Controls</u> include:</b></p> <ul style="list-style-type: none"> <li>• Fencing</li> <li>• Bunting, cones</li> <li>• Signage</li> <li>• Tag lines (should be minimum 16mm diameter, dry &amp; non conducting)</li> <li>• Communications between all involved</li> <li>• Stabilizer packing</li> <li>• Artificial lighting</li> <li>• PPE</li> <li>• Communications</li> <li>• JSA's (or similar documents)</li> <li>• Spotters</li> </ul>														
10.	<p><b>Always check with on-site personnel</b> <i>before</i> starting a lift to learn about:</p> <ul style="list-style-type: none"> <li>• On site Hazards (they might know about specific site hazards you don't)</li> <li>• On site policies &amp; procedures you must follow (site induction)</li> </ul>														
11.	Cranes <b>must be inspected before use</b> each day (Pre operation inspection)														
12.	Record results <b>in your CICA Crane Log Book</b> . Keep the log book with the crane.														
13.	<p>The <b>STANDARD PROCEDURE</b> to follow if a fault is found with the crane is to:</p> <ol style="list-style-type: none"> <li>1. <b>Stop</b> using the crane if it is in an unsafe condition – Tag it out</li> <li>2. <b>Note</b> the fault in the log book</li> <li>3. <b>Report</b> the fault to your supervisor</li> <li>4. <b>Do Not use the crane</b> until it has been repaired</li> </ol>														
<b>LOAD CHARTS</b>															
14.	All cranes <b>MUST have a load chart</b> – if it is not there or not readable, the crane must not be used until it has been replaced ( <i>Follow set procedures – note in log book, report to supervisor, do not use until repaired</i> )														
15.	<p>The <b>ratings</b> on the load chart <b>are only safe</b> if:</p> <ul style="list-style-type: none"> <li>• The crane is set up to <b>manufacturers specifications</b></li> <li>• All <b>stabilizers are fully extended</b> and firmly down on packing</li> <li>• All wheels must remain firmly on the ground</li> <li>• The ground must be <b>level and firm</b></li> <li>• <b>Good weather</b> conditions (no strong winds, heavy rain etc.)</li> </ul>														
16.	<p>If working at a radius or boom length not shown exactly on the load chart, always use the rating for the next longest radius or boom length.</p> <div style="text-align: center; border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;">  <table style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 0 10px;"><b>m</b></td> <td style="padding: 0 10px;">2.89</td> <td style="padding: 0 10px;">4.50</td> <td style="padding: 0 10px;">6.38</td> <td style="padding: 0 10px;">8.33</td> <td style="padding: 0 10px;">10.41</td> <td style="padding: 0 10px;">12.55</td> </tr> <tr> <td style="padding: 0 10px;"><b>Kg</b></td> <td style="padding: 0 10px;">4550</td> <td style="padding: 0 10px;">3000</td> <td style="padding: 0 10px;">2060</td> <td style="padding: 0 10px;">1560</td> <td style="padding: 0 10px;">940</td> <td style="padding: 0 10px;">730</td> </tr> </table> </div> <p><i>For example:</i> using the chart above - if working at a <b>7.5 metre radius</b>, use the rating for <b>8.33 metres</b> (1560kgs)</p>	<b>m</b>	2.89	4.50	6.38	8.33	10.41	12.55	<b>Kg</b>	4550	3000	2060	1560	940	730
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17.	<p><b>THE RATED LOAD</b> – or the total weight you are lifting with the crane - is made up from the weight of the:</p> <ul style="list-style-type: none"> <li>• Hook (this really only applies to cranes fitted with winch ropes)</li> <li>• Lifting tackle</li> <li>• The load itself</li> </ul>
<p><b>LIFTING THE LOAD</b></p>	
18.	<p><b>Set Up the Crane:</b> <i>Follow the standard set up procedure</i></p> <ul style="list-style-type: none"> <li>• Check all ground conditions are suitable</li> <li>• Note all identified hazards</li> <li>• Bunt off the area and put in place any other hazard controls identified in the job plan</li> <li>• Refer to written documents, such as SWMS or JSA's or HRA's etc</li> <li>• Ensure the truck's park brake is applied – engage PTO – set revs</li> <li>• Extend <b>ALL</b> stabilizers out &amp; down fully - <b>USE PACKING FOR ALL LIFTS!</b></li> <li>• <i>Note: Stabilizers can only be used in midway positions if allowed for by the manufacturer and load charts show this is allowed. Electronic overload protection must also be designed to allow for this.</i></li> <li>• <b>All truck wheels to remain firmly on the ground</b></li> <li>• Unfold the crane following manufacturer's specifications – <b>NOTE proper procedures</b> as to which controls to use to prevent being crushed by unfolding / folding booms on knuckle boom cranes. Always use the controls on the <b>opposite</b> side to which the crane unfolds.</li> </ul>
19.	<p><b>Determine the weight of the load.</b></p> <ul style="list-style-type: none"> <li>• Look on the load to see if it is marked</li> <li>• Checking freight documents</li> <li>• Use manufacturers information</li> <li>• Check drawings</li> <li>• Ask someone who may know</li> <li>• Weigh the object on a weigh bridge – or under some circumstances, if fitted use the crane's load gauge</li> <li>• Calculate the load weight</li> </ul>
20.	<p><b>Float the load</b> – Lift the load carefully &amp; slowly until it is just clear of the supporting surface – then check:</p> <ul style="list-style-type: none"> <li>• Is the slinging all OK and safe?</li> <li>• Is the load balanced evenly?</li> <li>• Did the crane lift the load OK and does it hold the load without creeping? – check any overload protection / warning devices</li> <li>• Is the crane stable? Stabilizer legs must not be sinking into the ground.</li> </ul>
21.	<p>If all is OK carefully continue the lift – If not <b>follow set procedures</b>: Lower the load, reassess the situation, make adjustments, consult with others if necessary, and do not proceed until the lift can be done safely.</p>

22.	<p>When lifting the load <b>do not drag or snig</b> the load. This can:</p> <ul style="list-style-type: none"> <li>• Damage the crane</li> <li>• Damage the load</li> <li>• Damage the lifting gear</li> </ul>
23.	<p>Ensure the hook is <b>directly above the load's centre</b> before lifting to prevent load swing.</p>
24.	<p>When slewing, especially at long boom lengths, <b>slew slowly and carefully</b> to prevent load swing and shock loading the crane.</p>
25.	<p>The <b>Standard Procedure</b> to follow if an <i>unsafe situation arises</i> during a lift is to:</p> <ul style="list-style-type: none"> <li>• Stop the lift (lower the load to the ground if safe)</li> <li>• Reassess the situation</li> <li>• Make adjustments as necessary (in consultation with others involved)</li> <li>• Only continue when safe to do</li> <li>• If necessary, report the situation to your supervisor</li> </ul>
26.	<p>When placing the load in the desired position, ensure:</p> <ul style="list-style-type: none"> <li>• the area is clear</li> <li>• the load is supported on dunnage if necessary (this may also help remove slinging)</li> <li>• the load is stable and cannot tip when the crane is released</li> </ul>
27.	<ul style="list-style-type: none"> <li>• Pack up the crane into the stored, travelling position. <b>NOTE: follow correct procedures. Be aware of crushing hazard of folding booms on knuckle boom cranes!</b></li> <li>• Leave the area clean and tidy.</li> <li>• Don't forget to pack away the stabilizers and stabilizer packing.</li> <li>• Pack away all lifting gear.</li> </ul>
28.	<p><b>On completion of the job:</b></p> <ul style="list-style-type: none"> <li>• Check the crane and slinging equipment has not been damaged (<b>follow standard reporting procedures</b> if there is damage – Note in the log book, report to supervisor etc.</li> </ul>
29.	<p><b>Remember</b> – the <b>crane operator is responsible</b> for the safe operation of the crane, its inspection and the checking of lifting gear before the lift starts – but make it a team effort!</p>
30.	<p><b>Crane Stability</b></p> <ul style="list-style-type: none"> <li>• We have already noted that <b>all stabilizers must be used for all lifts</b>. This is to help prevent the crane from becoming unstable.</li> <li>• <b>Do not lift over the cab of the vehicle</b> – unless the load chart indicates it is safe to do so. This rule is to ensure the crane remains stable.</li> <li>• <b>Always use packing</b> beneath stabilizer feet – it doesn't matter how good you think the ground is!</li> <li>• <b>Never operate on slopes</b> greater than the manufacturer allows for (normally limited to 2° to 5° cross slope)</li> <li>• <b>Ensure the tyres on the vehicle are inflated correctly and in good condition</b> – the tyres play an important part in supporting the crane.</li> <li>• <b>Strong winds</b> can adversely affect the stability of the crane or load.</li> </ul>

