



<b>Issued by: Global Operations Manager</b>	<b>Variations, which may have regional or locational significance, are contained in SOP Documents as specific appendices.</b>		
<b>HSEC</b>	Pages 1 of 28	Issue No. 003 Date March 2004	<b>Global SOP BHPB Exploration</b>



# Standard Operating Procedure for Helicopters

## Standard Operating Procedure for Helicopters - see Global Standard "Aviation"

<p><b>1. DEFINITION AND INTRODUCTION</b></p> <p>The use of helicopters in many aspects of Exploration work is a necessity.</p> <p>BHP Billiton Minerals Exploration requires the application of all aviation audit and assurance procedures as laid down for all operations within the group, but additional operating procedures are contained in this document to give specific guidance in the safe use of helicopters in exploration.</p> <p><b>All use of helicopters, as any other activity, should be prefaced by a risk assessment, and all means of removing or reducing hazards applied in the following priority:</b></p>	<p><b>Project:</b> <input style="width: 100%;" type="text"/></p> <p><b>Location:</b> <input style="width: 100%;" type="text"/></p> <p><b>Date:</b> <input style="width: 100%;" type="text"/></p> <p><b>Reviewer:</b> <input style="width: 100%;" type="text"/></p>		
	<b>Comments</b>		
<ul style="list-style-type: none"> <li>▪ Is the task necessary in the way intended? Is there another procedure, which removes the risk, or can the task be avoided altogether?</li> </ul>	<input type="checkbox"/>		
<ul style="list-style-type: none"> <li>▪ Can the risk be removed/reduced by an engineering option or mechanical option, or the process isolated (by a safety guard or barrier)?</li> </ul>	<input type="checkbox"/>		
<ul style="list-style-type: none"> <li>▪ Can the risk factors be replaced/reduced by using safer components or materials?</li> </ul>	<input type="checkbox"/>		
<ul style="list-style-type: none"> <li>▪ Can the exposure be reduced (i.e. number of people involved)?</li> </ul>	<input type="checkbox"/>		
<ul style="list-style-type: none"> <li>▪ Is protective equipment required as a defence, alone or in combination with the above?</li> </ul>	<input type="checkbox"/>		
<p>Contractors are responsible for the supply and provision of helicopter services. All such contracted services shall be subject to audit by the group aviation auditors (currently via Stan Medved –Hart Aviation). Safety equipment, including PPE, appropriate training and a safe method of use will be promoted and provided by the contractor. Additional support, particularly ground handling and fuel storage and supply, may be provided by BHPB.</p> <p>This Standard Operating Procedure (SOP) should be taken as part of further SOP's which may be applied alongside the requirements of this document (i.e. Contractors).</p> <p><b>Contractors should be responsible for:</b></p>	<input type="checkbox"/>		
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<ul style="list-style-type: none"> <li>▪ Complying with the terms and conditions of the contract and this SOP.</li> </ul>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>▪ Applying risk management principles and practices to contracted work whenever a contractor manages works and/or sites on behalf of BHP Billiton. This will minimise health, safety, environment and community relations (HSEC) risks for both BHP Billiton and contractors' employees;</li> <li>▪ Ensuring that employees have the right to refuse to work in unsafe situations or if they feel inadequately trained to safely perform a task; and,</li> <li>▪ Promptly undertaking any corrective action in line with their contractual requirements as directed by the BHP Billiton site representative.</li> </ul>	<input type="checkbox"/>	
<b>BHP Billiton Project Managers are responsible to:</b>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>▪ Ensure BHP Billiton employees conform to the standards set in this SOP.</li> </ul>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>▪ Assess and review the past and present HSEC performance of their contractors. It is the responsibility of BHP Billiton site management to communicate the assessments to contractors, and to work to improve procedures at the work site; and,</li> </ul> <p>Ensure that sub-standard HSEC performance, and repeated and/or serious violations, are recognised and addressed. Such violations may result in the employee and/or crew and/or contractor dismissal.</p>	<input type="checkbox"/>	
<p><b>2. SUPERVISION</b></p> <p>All work must be supervised by a person competent to give assurance that correct procedures are being followed, and that there is compliance with the requirements of this SOP. The on-site supervisor must be able to provide clear communication in the required language(s) with site personnel.</p> <p>Non-compliance with SOP requirements, or equivalent safeguards, shall be regarded as serious, and any such events reviewed to establish the reasons. Where no valid reason exists then the matter may be treated as a disciplinary matter.</p>	<input type="checkbox"/>	<b>Comments</b>



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3. TRAINING	Comments
<ul style="list-style-type: none"> <li>▪ Medical conditions, which may affect a person’s ability to perform work contemplated, shall be reported to the BHP Billiton representative prior to commencement of work.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ All contractors and employees shall receive induction to enable them to work safely and responsibly on BHP Billiton sites, and must be trained in safe and responsible behaviour in respect of helicopter procedures. There should be evidence of periodic refresher training.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Contractors must demonstrate employee competency to fulfill the assigned tasks. Contractors must supply records on employees’ work experience and training courses, as requested.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ The helicopter pilot in all instances has responsibility to assure that safety is maintained in association with the use of his machine.</li> </ul>	<input type="checkbox"/>

4. HELICOPTER GENERAL SAFETY	Comments
<p>Many rules and safety procedures apply equally to helicopters and fixed wing aircraft. Even so, helicopters by nature of their design and use present a number of unique hazards. The following safe operating procedures apply to helicopters specifically.</p> <p><b>The pilot is at all times responsible for safety in relation to the activities of the helicopter, and his/her instructions MUST be followed.</b></p>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ The pilot must be well rested. He or she must not exceed the permitted flight duty hours (Some legal requirements exceed BHPB requirements. It should be the most restrictive of Operator, Regulatory, or BHPB requirements). Everyone must watch for signs of <b>pilot fatigue</b>. These may include inattentiveness, slow reaction time, grouchiness and/or atypical behaviour by the pilot.</li> </ul> <p><b>There are major considerations associated with helicopter use:</b></p>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Noise</li> </ul>	<input type="checkbox"/>



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▪ Dust	<input type="checkbox"/>
▪ Rotor wash (wind)	<input type="checkbox"/>
▪ Rotor System, especially the highspeed (very difficult to see) tailrotor as well as the potential low height of the main rotor system.	<input type="checkbox"/>
<b>Safety briefings</b>  The pilot and /or ground handler will give a safety briefing before use of the helicopter.  <b>Points to be covered should include:</b>	<input type="checkbox"/>
▪ Safe movement around the helicopter.	<input type="checkbox"/>
▪ Seatbelt operation and requirement for use.	<input type="checkbox"/>
▪ Emergency exits	<input type="checkbox"/>
▪ Life jacket operation and use	<input type="checkbox"/>
▪ Fire extinguisher location, use and limitation	<input type="checkbox"/>
▪ Use of headsets and comms.	<input type="checkbox"/>
▪ What to do in emergency	<input type="checkbox"/>
▪ Location and use of the emergency locator transmitter (ELT), and portable beacons (PLB)	<input type="checkbox"/>
▪ Location of survival equipment.	<input type="checkbox"/>
▪ Non-Smoking Rules around or in the aircraft.	<input type="checkbox"/>
▪ Location of the First Aid Kit	<input type="checkbox"/>
▪ Location of Passenger Briefing Cards.	<input type="checkbox"/>

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5. SAFE OPERATING PROCEDURES FOR HELICOPTERS	Comments
<ul style="list-style-type: none"> <li>▪ <b>Do not use piston engine helicopters.</b></li> <li>▪ <b>Never approach or exit a helicopter without the pilot's direct permission.</b> Pilots frequently do stability testing and shift the helicopter slightly before final landing.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ <b>Normally approach a helicopter by moving 35-40 degrees left or right toward the FRONT of it and in full view of the pilot.</b> Try to keep eye contact with the pilot. Take care not to walk into the helicopter's radio antenna. <b>Exit by moving away at the 35-40 degrees FRONT of the craft.</b></li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ <b>You may</b> have to approach or exit the side of a helicopter if it lands facing high ground or if it has a low blade clearance at the front of the helicopter (e.g., Sikorsky S-76). Never enter or exit toward the rear of a helicopter, as the tail rotor is invisible when the machine is running. However, it must ALWAYS be within view of the pilot and only with his/her permission.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ <b>Always approach or exit a helicopter in a CROUCHING position</b> to give your head more clearance from the rotor blades. Hold on to your hat or hard hat if it is not secured with a chinstrap. Beware of the possibility of blade "sailing", which can cause the rotors to dip towards the ground in wind.</li> </ul>	<input type="checkbox"/>

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<ul style="list-style-type: none"> <li>▪ <b>NEVER WALK IN THE DIRECTION OF THE TAIL ROTOR.</b> If you walk into the tail rotor it will kill you! Inform the pilot before exiting. If you must remove gear from the cargo compartment, inform the pilot, and do this carefully. Make sure you close the cargo compartment door properly when finished. Then, return to the front in full view of the pilot and move away as above.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ <b>Always approach and exit a helicopter using the DOWNHILL side if the craft is on a slope.</b> The rotor blades will be much closer to the ground on the uphill side and can hit your head. Be alert to this risk when moving through hummocky ground within the range of the main rotor blade.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ <b>Do not approach or exit if the rotor blades are moving slowly.</b> Blades will dip as the motor slows, and they can also dip unpredictably if it is windy.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ <b>Do not approach a helicopter when visibility is reduced with blowing sand, dust or snow</b> from the downdraft of the rotors. Wait until visibility is clear or until the helicopter has shut down.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ <b>Do not distract the pilot or upset the balance of the machine with sudden or unpredictable movements during take-off, landing or other manoeuvres.</b> Nevertheless, if you notice a hazard while flying, be sure to point it out to the pilot. Do not assume the pilot has seen it.</li> </ul>	<input type="checkbox"/>



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<ul style="list-style-type: none"> <li>▪ When loading and unloading, carry all long items horizontally (e.g., poles, oars, tools). Never carry them vertically or over your shoulder as they may hit the main rotor blades.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ <b>Never throw anything out of a helicopter.</b> It may contact the rotor blades or be sucked into the jet engines.</li> </ul> <p><b>NOTE: You must stay alert and constantly remind yourself to keep your distance from the rotor blades.</b></p>	<input type="checkbox"/>

6. ADDITIONAL SAFETY PROCEDURES FOR HELICOPTERS	Comments
<ul style="list-style-type: none"> <li>▪ Recommended clothing include long trousers, long sleeve collared shirt, and avoidance of nylon/acrylic materials.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Ensure that critical safety instructions and briefings are held in the local language(s).</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ If you are exiting from a helicopter that will take off immediately, move at least 10 metres (30 feet) away with your gear and crouch down. Remain there while it lifts off. During liftoff, turn your head away from helicopter and protect your eyes.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ On rare occasions, pick-ups and drop-offs on steep slopes may require "toeing-in" with only partial support of the skids. Pilots should avoid toeing-in whenever possible. If this procedure is unavoidable, all passengers must be fully briefed before departure on specific aspects of approach, exit, emergency procedures and communication with the pilot. Board or exit only after you receive instruction and permission from the pilot. Be especially careful not to make any unexpected movements that suddenly redistribute weight during these landings.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ When exiting, refasten seat belts so they don't flap around inside the bubble or hang out the door.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ During some surveys, a helicopter door may be removed. Never unfasten your seat belt until the pilot gives permission.</li> </ul>	<input type="checkbox"/>





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<ul style="list-style-type: none"><li>Never touch a helicopter or its load before it has completely landed as it is usually charged with static electricity.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Protect your eyes from dust blown up when a helicopter is arriving or departing.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Stand back at least 15 metres (50 feet) from the landing pad when a helicopter is arriving or departing.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Locate all fires at least 100 metres (300 feet) from a helipad so that turbulence created by flying activity will not blow embers about and create a brush fire.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Weigh down or remove all lightweight materials, especially plywood, that might be blown about by helicopters. A heavily loaded helicopter has a powerful downdraft that can send sheets of plywood, styrofoam or plastic sailing into the air.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Always plan who will do what job when loading and unloading a helicopter. Who will communicate with the pilot? Who will hold the door? Who will carry which items? How will the items be carried? This helps prevent confusion and accidents, as it is very noisy and windy around a helicopter with its rotors turning.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Never toss items from person to person when loading or unloading a helicopter.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li><b>DO NOT RUSH while working around aircraft.</b> There is a tendency to hurry during loading and unloading procedures, which greatly increases the chances of personal injury.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Securely stow all items within the bubble. Unsecured, small heavy items can cause a lot of damage in turbulence or a hard landing.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Never place items against the bubble of the helicopter as they may damage the surface or obstruct the pilot's view.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Always take full emergency/survival gear with you, whether you are on a traverse or working at a site. Take it even if the helicopter is only going for fuel or to shift its landing site a short distance. Something may happen to prevent the helicopter from returning for you. Make sure your survival kit is suited to your specific needs.</li></ul>	<input type="checkbox"/>



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<ul style="list-style-type: none"><li>Consider obtaining hand-held FM radios for field parties. Supply the pilot with a frequency so field parties can communicate with the pilot from the ground.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Fly your traverse route prior to drop off to check for rivers that cannot be crossed, bears or hazardous terrain, etc.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Plan for the increased load at the end of the day due to the weight of samples.</li></ul>	<input type="checkbox"/>

<b>7. VEHICLES NEAR HELICOPTERS</b>	<b>Comments</b>
<ul style="list-style-type: none"><li>All vehicles must be at least 30 metres from the helicopter when running, taking off, or landing.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Permission of the pilot is essential when approaching in a vehicle.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Beware to avoid any protrusions from the helicopter or vehicle to avoid damage.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>If a vehicle is approaching a grounded helicopter, the blades should be hand-turned by the pilot to ensure clearances.</li></ul>	<input type="checkbox"/>

<b>8. LOADING</b>	<b>Comments</b>
The pilot must be in agreement with the loading activities, in particular:	
<ul style="list-style-type: none"><li>Type of cargo, not dangerous goods etc.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Placement of load and security</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Long objects to be transported in a safe manner.</li></ul>	<input type="checkbox"/>



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<p><b>9. SLINGING</b></p> <p>Helicopters are often used to move supplies, fuel, drill and camp equipment in an efficient way by slinging. Slinging is hazardous work and accidents may occur even with experienced pilots. To minimise the hazards and dangers, employees and drill contractors working for BHP Billiton must always adhere to safe slinging procedures.</p>	<p><b>Comments</b></p> <p style="text-align: center;"><input type="checkbox"/></p>
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<p><b>9.1 CAUSES OF SLINGING ACCIDENTS</b></p> <p>Employees should be aware of the potential hazards that cause accidents during slinging operations. Pilot fatigue causes many slinging accidents and BHP Billiton limits the number of duty hours that a pilot may fly while slinging. 60% of slinging accidents occur during pick-up.</p> <p><b>Some major hazards are:</b></p> <ul style="list-style-type: none"> <li>▪ Snagged sling gear</li> <li>▪ Obstacles in the operating area such as stumps, drill equipment, etc.</li> <li>▪ Untidy housekeeping around drill site and landing pad. (Debris or loose plywood sheets, etc., may be blown violently into the air by the downdraft from the helicopter's rotors.)</li> <li>▪ Poor surface conditions at the operating site such as snow, soft spots, mud, etc.</li> <li>▪ Incorrectly fastened or obstructed line hooks, incorrect use of release mechanisms.</li> <li>▪ Incorrectly rigged load</li> <li>▪ Overloading (especially by inaccurate weight calculation of the load)</li> <li>▪ Wind conditions not known beforehand, or variable wind conditions</li> </ul> <p><b>Here is how accidents happen:</b></p> <ul style="list-style-type: none"> <li>▪ Getting pressured into a risky operation</li> <li>▪ Accepting hazards</li> </ul>	<p><b>Comments</b></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p>
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▪ Flying when fatigued	<input type="checkbox"/>
▪ Lack of training for the task	<input type="checkbox"/>
▪ Unsure of what is required	<input type="checkbox"/>
▪ Operating in marginal weather	<input type="checkbox"/>
▪ Ignoring laid-down procedures	<input type="checkbox"/>
▪ Becoming distracted and not spotting a hazard	<input type="checkbox"/>

9.2 SAFE SLINGING PROCEDURES	Comments
Numerous factors contribute to safe slinging procedures. Plan all procedures carefully and use the correct equipment. Responsibility for safe slinging jobs lies with the pilot and the marshallers (ground people). Each has to fully communicate with all parties so that everyone understands the job requirements. <b>Take time to do the job safely and correctly.</b>	<input type="checkbox"/>
<b>Basic Planning Procedures</b>	<input type="checkbox"/>
▪ Make sure the helicopter has the lifting capacity to do the job.	<input type="checkbox"/>
▪ All personnel involved in slinging operations must be fully trained.	<input type="checkbox"/>
▪ Slinging jobs must be well planned.	<input type="checkbox"/>
▪ Hold briefings for each job so everyone involved fully understands their responsibilities for the task at hand.	<input type="checkbox"/>
▪ All slinging equipment must be the correct type for the job and in good working condition.	<input type="checkbox"/>
▪ All personnel not directly involved with the slinging procedures must stay well away from the flight paths during slinging operations.	<input type="checkbox"/>

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<p><b>Slinging Equipment</b></p> <p>The size, safe working load, length, etc., of slings, hooks, nets, shackles and "D" rings will vary with the capability of the helicopter and the type of load.</p>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Make sure the appropriate equipment is available to do the job efficiently (various slings, cable chokers, lifting pods, lanyards, nets, etc.). Every item must be in good working condition.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Clearly identify all slinging equipment for aircraft use only (colour code, if necessary) and store it separately from general purpose slinging equipment. Lifting equipment must be clearly marked with a unique identification number/symbol that indicates the maximum lifting capacity of the item.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Maintain a register of all slinging equipment to ensure all items are within the life or test date.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ All equipment used for slinging (lifting and lowering personnel, equipment and/or materials) must be inspected before initial use and then periodically for defects and damage. The inspector must be a designated, competent person. Keep a record of inspections.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ The aircraft hook assembly and operating system must adhere to the same planned maintenance requirements as other aircraft components.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Always insert a swivel between the fixed hook assembly of the helicopter and the external load.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ A shackle or hard eye must form the direct connection between the cargo hook and sling. Soft eyes and rope attachments may bind on the cargo hook and prevent release under normal release conditions or, more dangerously, in case of emergency.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ All items in the load chain must have a breaking strain of at least 4 times the weight of the largest load to be carried.</li> </ul>	<input type="checkbox"/>



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<ul style="list-style-type: none"> <li>▪ Use steel wire rope slings and/or fibre net slings in preference to nylon webbing slings. Nylon webbing may chafe very rapidly in flight if it is poorly rigged. Rough loads must be wrapped to prevent chafing of nylon webbing.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Inspect wire rope slings for 1) fatigue failure – small cracks in the wire rope, 2) abrasive wear – worn shiny spots and 3) abusive wear – kinking or bird caging.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Discard wire rope slings that show severe corrosion, more than 1/3 reduction in the diameter of the outer wire, and excessive abusive or abrasive wear. Abusive wear causes serious structural damage to wire rope and will cause the sling to become unsafe long before other factors.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Test electrical and emergency mechanical cargo hook release mechanisms daily. Keep all winches, shackles, line slings and hoists under one maintenance testing program.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ A number of incidents have occurred due to hook mechanisms failing or being released in error. Ensure correct operation of release mechanisms, utilising electrical release where this is installed in the correct manner. Check underbelly mechanism where snow, ice, debris or mud may interfere with the mechanism.</li> </ul>	<input type="checkbox"/>

<b>9.3 SLINGING RESPONSIBILITIES</b>  <b>Pilot,</b> It is the pilot's responsibility to:	<b>Comments</b>
<ul style="list-style-type: none"> <li>▪ Make certain that everyone is thoroughly briefed.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Check the release mechanism and sling gear serviceability.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Follow proper slinging procedures.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Coordinate the make up of loads with the ground staff.</li> </ul>	<input type="checkbox"/>
<p><b>Groundman (Marshaller)</b></p> <p>The groundman (marshaller) must be fully trained for the job and have a complete understanding of the task to be performed.</p>	<input type="checkbox"/>



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<ul style="list-style-type: none"> <li>▪ The pilot and groundman must confirm the signals they will use. <b>Always use radio communication</b>, whenever possible. Hand signals may be acceptable. <b>Only one person may send signals to the pilot.</b></li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ The groundman must wear a hard hat with a chinstrap, goggles or a plastic face shield for eye protection. He or she should wear high visibility clothing such as a fluorescent-coloured vest or armbands that clearly distinguishes him or her from the other employees working in the area of the helicopter landing pad.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Always wear lineman gloves for protection from static electric shock. You can be knocked to the ground or even become entangled in the cargo net from a charge of static electricity.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ The groundman must wear proper footgear and use extra caution when working on slippery surfaces. Take time to do the job safely and correctly.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Make sure the lanyard hook-keeper is secured in the closed position before you signal the helicopter to lift.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Never step directly in front of a sling load after you hook it onto the helicopter. Exit forward but to the side to avoid being struck by the load as the helicopter aligns for take-off. Stand or crouch in full view of the pilot. Then, keep well away from the flight paths while sling loads are transported.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Never turn your back on an incoming load.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Allow the load to settle before you remove chokers and slings.</li> </ul> <p>Use a second groundman (marshaller) when slinging a drill rig and equipment or when slinging a complicated load. This person must also be equipped with a radio. Only one person, however, may give signals to the pilot.</p>	<input type="checkbox"/>
<p><b>9.4 OTHER FACTORS</b></p>	<p><b>Comments</b></p>
<p><b>Load</b></p>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Make sure that the cargo weight does not exceed the lifting capacity of the helicopter.</li> </ul>	<input type="checkbox"/>



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<ul style="list-style-type: none"><li>▪ The net must hold the entire cargo securely so nothing comes loose during flight.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Before slinging bundles of long timbers such as 2x4s, nail each 2x4 to an adjacent one. Then, no individual 2x4 will slip out of the bundle if the load starts to spin during flight.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Weigh down light loads such as plywood with heavy camp gear to keep the sling from swaying backwards into the tail rotor during flight.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Wrap core boxes before slinging to prevent them from chafing the sling net.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Place all sling net loops on a lanyard hook, and then attach this lanyard hook to the helicopter hook. If you know the number of loops around the perimeter of your sling net, you can count the loops on the lanyard hook to confirm that they are all attached.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Never attach cloth straps or ropes directly to a helicopter hook. Attach these to a lanyard hook. Then, attach the lanyard hook to the helicopter hook. If straps or ropes are attached directly to the helicopter hook, they may come off if the load rotates during flight.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Never fly with unweighted lanyards or long lines as they may trail back into the tail rotor. They must be weighted down on any flight, or you must place them inside the helicopter for the return trip.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ When it is necessary to use a long line attached to a sling (jungle, mountainous sites with very tall trees, etc.), always have a pile of rocks or logs available to use to weigh down the sling for the return trip. Under these circumstances, it is impossible to detach the sling net or cables for the return trip.</li></ul>	<input type="checkbox"/>
<b>Site</b>	
<ul style="list-style-type: none"><li>▪ Clear the operating area of all stumps, brush, unnecessary equipment, loose materials, etc., that might catch on a moving sling load or be blown about by the downdraft of the helicopter's rotors.</li></ul>	<input type="checkbox"/>
<b>Weather</b>	
<ul style="list-style-type: none"><li>▪ Be prepared to stop if weather conditions are marginal. Check the wind direction frequently and be alert for changes. Don't push your luck.</li></ul>	<input type="checkbox"/>





# Standard Operating Procedure for Helicopters

<ul style="list-style-type: none"> <li>▪ When slinging in snow conditions, the helicopter can create blowing snow while it hovers. Therefore, it is difficult for the pilot to see signals from the ground person. This may also happen in deserts when sand or dust obscures visibility. Extra caution is needed. <b>Radio communication between the pilot and ground person is essential.</b></li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ In poor lighting conditions where the horizon is not easily distinguishable from the surrounding white snow, it can be difficult for the pilot to stabilize the aircraft at a hover. To assist the pilot, markers could be placed outside of the pickup area (large rocks, spray paint the snow with a bright colour, or other larger items that will not be affected by the rotor downwash).</li> </ul>	<input type="checkbox"/>
<b>Helicopter Performance</b>	
<ul style="list-style-type: none"> <li>▪ The elevation of a landing site and the air temperature significantly affect helicopter performance. Helicopters operating in mountainous or hot environments are able to carry less payload weight than the same helicopter operating at sea level and in cool weather.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Above certain weights, helicopters may not be able to take off vertically. They will require a clear area ahead of the pad to carry out a low-level transition to forward flight.</li> </ul>	<input type="checkbox"/>

<p><b>10.0 RESPONSIBILITIES</b></p> <p>Everyone should have a clear understanding of the duties and responsibilities that relate to all aircraft. All passengers must understand their obligations and do their part to ensure safe operations in the field.</p>	<p><b>Comments</b></p> <input type="checkbox"/>
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<p><b>10.1 PILOTS</b></p> <p>The pilot is in charge of all aspects of the aircraft. It is his or her duty to safely load the aircraft, brief passengers and conduct a safe flight. Responsibilities of the pilot include, but are not limited to the following:</p>	<p><b>Comments</b></p> <input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Comply with all flight regulations of the country, province or state and the BHP Billiton Aviation Policy.</li> </ul>	<input type="checkbox"/>



# Standard Operating Procedure for Helicopters

<ul style="list-style-type: none"><li>Know and comply with BHP Billiton Mineral Exploration contract standard terms and conditions.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Do not exceed the BHP Billiton Exploration allowable duty hours and flight hours per given period.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>File flight plans at airports and make sure that those in charge monitor all local flights from field camps.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Pilot should ensure that flight routes requested allow safety margins for emergency or unpowered descent to acceptable landing wherever possible i.e. over water consider autorotation distance to land, or consider flotation devices.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Create an appropriate tracking system for aircraft, with routes, ETA'S, contacts established before flight. Confirm with the camp manager when aircraft are based in camp.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Explain all in-flight safety procedures, equipment and flight conditions. This is particularly important for camp visitors and employees who fly infrequently. Briefings should include information about approaching and exiting, seat belts, life jackets, ear protection, exit location, etc.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Grant permission for passengers to exit or approach the aircraft.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Remind passengers of the safe exit route after landing.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Show all passengers how to gain access to all safety/survival equipment, including the ELT (Emergency Locater Transmitter).</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Inform passengers of any unusual conditions at the time of takeoff, during the flight or upon landing.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Perform all necessary pre-flight checks on the aircraft.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Ensure that the correct fuel is used and that it has not passed the expiry date.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Test fuel for the presence of water and reject any fuel where it is present.</li></ul>	<input type="checkbox"/>



# Standard Operating Procedure for Helicopters

<ul style="list-style-type: none"> <li>▪ Check the fuel lines for water each morning.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Supervise all aspects of loading the aircraft.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Make sure all loads are thoroughly secured to prevent items breaking free during flight. Freight or hand luggage must <b>never</b> block the aisle between crew or passengers and any exit.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Supervise the placement and securing of any permissible external loads.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Approve all loading of dangerous or hazardous cargo. Firearms must be unloaded. Load all hazardous cargo in the cargo compartment. The pilot should have training in the handling of hazardous materials.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Test the fuel for water content and shield the opening of the drum from any rain or other water source during the refuelling process).</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ <b>Never indulge in or permit any "horseplay" at any time, for any reason.</b></li> </ul>	<input type="checkbox"/>

10.2 CAMP PROJECT MANAGER	
Responsibilities of the camp manager regarding aircraft include:	Comments
<ul style="list-style-type: none"> <li>▪ Select the correct aircraft for the job. This will reduce the temptation to overload the aircraft by having the appropriate machine to do the work. For example, just because an aircraft has four seats, it is not necessarily able to carry four people. Take into account elevation, temperature, fuel, survival gear, weight of samples, as well as the weight of passengers.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Instruct all employees in the safe operating procedures around aircraft at the project orientation safety meeting. Any new employees working on the project must receive routine training in safe aircraft operating procedures at the regularly scheduled safety meetings. Ensure that camp visitors receive briefings on air safety.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Where relevant, ensure that safety information and briefings are given or made available in the local language.</li> </ul>	<input type="checkbox"/>



# Standard Operating Procedure for Helicopters

<ul style="list-style-type: none"> <li>▪ <b>Ensure that passengers are 1) aware of their right to refuse to fly if they feel unsafe, and 2) understand their obligation to report what they feel are unsafe aircraft and flying practices.</b></li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Set up and maintain safe landing sites for aircraft. Construct the landing sites in accordance with the standard terms and conditions of the BHP Billiton Aviation Policy and the OGP Aircraft Management Guide, available on the BHP Intranet.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Keep the landing area clear of loose debris, brush, empty cans, papers and all lightweight supplies. The turbulence created by helicopters can blow material into their rotor blades, jet engines or into the camp itself.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Place flagging streamers on radio antennas; ensure they are clearly visible from the air.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Keep an accurate account of fuel in caches in consultation with the pilot or engineer. Make sure that the correct fuel is available and that it has not passed the expiry date. Arctic grade diesel fuel should not be used for turbine powered aircraft. Always maintain adequate supplies of jet fuel.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Oversee fuel storage. Store fuel drums correctly on their side with the bungs in a horizontal position. Stack aviation fuel separately from all other fuels. Mark the fuel drums with BHP Billiton ownership when required. Never store outboard motor fuel in aviation fuel drums. Store fuel drums 100 metres from rivers and major streams. Store them well above high tide and any possible flood levels.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Maintain safe fuel delivery systems, including filtration and water testing capabilities.</li> </ul>	<input type="checkbox"/>

<p><b>10.3 PASSENGERS</b></p> <p><b>Passengers must obey the pilot at all times and do nothing to jeopardise the safety of a flight. Responsibilities of the passengers include the following:</b></p>	<p><b>Comments</b></p>
<ul style="list-style-type: none"> <li>▪ Obey the pilot at all times.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Never pressure a pilot to fly beyond allowable flight and duty time limits. Know what these limits are and accept them.</li> </ul>	<input type="checkbox"/>



## Standard Operating Procedure for Helicopters

<ul style="list-style-type: none"><li>▪ Never pressure a pilot to fly beyond his or her license experience limitations.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Never insist that a pilot overload the aircraft. Make an extra trip.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Never pressure a pilot to fly in bad weather or fly in unsafe conditions.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Never pressure a pilot to use an unsuitable landing strip or water port.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Inform a supervisor if any pilot engages in questionable behaviour that the passenger feels is unsafe. Any employee may refuse to fly (with no fear of retribution) if he or she feels the aircraft is unsafe, or if the pilot has flown or may fly in an unsafe manner.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Wear a seat belt at all times while travelling in an aircraft. Wear ear protection whenever possible.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Inform the pilot if you are transporting "dangerous goods" (e.g., guns or ammunition, bear spray). These items <b>must</b> be correctly packaged and stowed.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Stow all hand luggage according to the pilot's instructions.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Never indulge in "horseplay" while in or near aircraft.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Always take suitable full emergency/survival gear, whether on traverse or working at a site. Something may prevent the aircraft from returning.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Tell the pilot of any hazard observed while in flight; do not assume the pilot has seen it.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ If you suspect that you are off course, do not hesitate to communicate your concern to your charter pilot. Occasionally charter pilots get lost, especially in areas with few recognisable physical features and few roads.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>▪ Learn how to operate and correctly position an ELT.</li></ul>	<input type="checkbox"/>



# Standard Operating Procedure for Helicopters

10.4 MUTUAL RESPONSIBILITIES	Comments
Everyone is mutually responsible for safety. This includes following SOPs, watching out for hazards, refraining from horseplay, etc.	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Prior to departure, employees who will be out on traverses must determine the best drop-off and pick-up points. Choose and agree upon alternate pick-up points. Employees must clearly mark these points on a map and discuss them with the pilot so there is no confusion about these important locations. Even if ground parties have radios, these points should be clearly marked on a map so all parties agree on the locations.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>If you use VFR (Visual Flight Rules) aircraft, always plan to have flights completed within daylight hours to comply with VFR regulations. (Even though some countries permit night flying according to VFR in Visual Meteorological Conditions (VMC). <b>BHPB policy does not permit the use of any single engine aircraft for night flying.</b></li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>The pilot and camp manager should establish appropriate radio communication schedules.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>The pilot and camp employees must establish clearly understood procedures for search and rescue as communications may break down during bad weather or an emergency.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>The pilot, ground personnel or exiting passengers shall mutually agree upon the meaning of necessary hand signals for operations during mooring, landing or slinging, etc.</li></ul>	<input type="checkbox"/>
<b>11.0 CONSTRUCTION OF HELICOPTER LANDING PADS</b>  Some field camps require helicopter support. The largest required helicopter determines the required dimensions of the landing site. <b>ALWAYS check with the helicopter contractor for the exact requirements for landing pads.</b> Some terrain requires special landing pad construction to provide a safe landing area. Where a helicopter downdraft creates blowing sand or dust, a raised helicopter landing pad may be a partial solution.  <b>Selecting the Site:</b>	<input type="checkbox"/>  <b>Comments</b>



# Standard Operating Procedure for Helicopters

<ul style="list-style-type: none"> <li>▪ Landing sites should be at least 30 metres (100 feet) in diameter (more in areas of tall forests or jungle).</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ There must be flight access corridors in the direction of prevailing winds. If necessary, clear an access corridor. A clearing beside a lake, river, road, or on a ridge top might be a good choice for a landing pad.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Stay away from power lines, wires, cables or towers. Avoid obstacles such as cliffs that might cause dangerous downdrafts.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ <b>Wildlife.</b> Stay away from flight paths or feeding areas of flocking birds such as gulls. Flight paths are usually below 150 metres (500 feet) above ground level and birds are especially active at sunrise and sunset. This problem may occur near waste disposal sites, dumps, etc., migratory waterfowl refuges, and agricultural fields during harvest or ploughing activities. Bears may also become a problem at helipads near dumps, etc., as bears will be attracted if food is available.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Landing sites must be as level as possible with a slope not more than 5°.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Choose an area that requires minimal site improvement – one relatively free of stumps, deadfalls, brush, rocks or other hazards.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Try to select a low dust area.</li> </ul>	<input type="checkbox"/>
<p><b>Improving the Site:</b></p>	
<ul style="list-style-type: none"> <li>▪ Cut down any trees that may be a hazard on the approach and departure paths, especially if helicopters will be slinging external loads. Try to provide access with a 15° angle of approach. The angle of approach may not exceed 40°.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Clear the manoeuvring area within 15 metres (50 feet) radius of the landing spot. Remove all hazards such as stumps, brush, deadfalls, large rocks and loose debris. All remaining trees near the landing site must be firmly rooted, show no signs of decay and contain no dead branches that might be blown down by the downdraft of a helicopter.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Clear the landing area to the ground surface within 8 metres (25 feet) of the helipad. Nothing must protrude that might contact the tail rotor of a helicopter.</li> </ul>	<input type="checkbox"/>



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<ul style="list-style-type: none"> <li>▪ Provide a wind indicator such as flagging tape streamers or a windsock. Smoke flares may be used when necessary.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ In areas where dust or sand is a problem, use a binding agent (one permissible under local environmental regulations) in the immediate area of the landing pad to help minimise blowing dust or sand.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Ensure that markers and flagging are firmly secured so they do not blow into the rotors.</li> </ul>	<input type="checkbox"/>
<b>Short-term Bush Helipad Construction on Snow or Swampy Ground</b>	
<ul style="list-style-type: none"> <li>▪ In deep snow or soft swampy ground, construct an evergreen bough mattress at least 15 cm (6 inches) thick and 3 metres (10 feet) square for the helipad. Tramp the snow down with snowshoes first to make a base.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Lay a minimum of 6 sturdy logs on this bough mattress at a maximum of 50-60 cm (2 foot) intervals and at right angles to the direction of helicopter approach. The logs must form a solid and continuous landing surface. They should be at least 3 metres (10 feet) long and 10 cm (4 inches) thick. Each helicopter skid must rest across several logs, not along one log.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Make sure the pad is level to within 5°. Trim off all stubs and knots from the logs so the helicopter skids won't catch on them.</li> </ul>	<input type="checkbox"/>
<b>Long-Term/Heavy Duty Bush Helipad Construction on Snow or Swampy Ground</b>	
<ul style="list-style-type: none"> <li>▪ Construct an evergreen bough mattress larger than for the short-term pad. It should measure at least 30 cm (1 foot) thick and 4x5 metres (12x16 feet). Tramp the snow with snowshoes to make a base.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ On the bough mattress, lay 2 sturdy logs, each 4-5 metres (12-16 feet) long, about 3 metres (8-10 feet) apart. Lay these logs parallel to the helicopter direction of approach.</li> </ul>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>▪ Lay sturdy logs of equal thickness across the first two logs to form a solid and continuous landing surface to maximise the "ground effect". The logs should be 4-5 metres (12-16 feet) long. Spike these cross-logs together with 30 cm (12 inch) spikes.</li> </ul>	<input type="checkbox"/>





# Standard Operating Procedure for Helicopters

<ul style="list-style-type: none"><li>Make sure the pad is level. Trim off all stubs and knots.</li></ul>	<input type="checkbox"/>
<b>Hillside Bush Helipad Construction</b>	
<ul style="list-style-type: none"><li>Except for levelling considerations, the construction and dimensions should be the same as for level ground helipads.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>The downhill side must be built up to make a level helipad. Often, a large log on the downhill side will suffice. On steep slopes, make sure the pad is securely braced so it won't slide or roll under the weight of a fully loaded helicopter.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Lay the cross-logs in the same direction as the slope to form a continuous pad. The helicopter will approach on a course along the side of the hill and land with one side towards the slope and its skids supported by several of these cross-logs.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Install a good, highly visible wind indicator. This is very important due to the variable winds that occur around hills and down slopes.</li></ul>	<input type="checkbox"/>
<b>Temporary Rock Hilltop Helipad Construction</b>	
<ul style="list-style-type: none"><li>Clear all loose debris from the rock surface and mark the landing spot with conspicuous paint.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>A 3-metre (10-foot) circle around a large letter <b>H</b> is best, but any marking easily seen from the air will suffice.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>A wind indicator is important because of hilltop winds.</li></ul>	<input type="checkbox"/>
<b>Temporary Ice Helipad Construction</b>	
<ul style="list-style-type: none"><li>Check carefully for soft spots on the river, lake or sea ice, especially when the ice is snow-covered.</li></ul>	<input type="checkbox"/>
<ul style="list-style-type: none"><li>Away from a shoreline it is often difficult for pilots to determine their height for landing or hovering. Provide visual references ahead or to one side of the landing spot. Piles of equipment or weighted conspicuous markers or streamers can be used.</li></ul>	<input type="checkbox"/>



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- All personnel must stand well clear of the helipad during landings, hovers or departures. Blowing snow can obscure the pilot's visibility and the helicopter could drift across the landing site.

## 12.0 FLIGHT AND DUTY LIMITS

Refer to BHPB Aviation Services manual.(STDCON).

**Comments**

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	Comments
<p><b>12.1 FORCED LANDING</b></p> <p>In the unlikely event of a forced landing, do not leave your seat until all movement has stopped, including the blades, and evacuate only on the command of the pilot, unless he or she is incapacitated.</p> <p>In the event of a fire however, you may have to vacate the aircraft while rotors are still turning. In that situation, you must be very careful to avoid the turning blades. When all survivors have evacuated the helicopter it is important to immediately communicate the emergency.</p> <p>Our helicopters are fitted with a fixed ELT(emergency locator transmitter) and there is at least one portable ELB (emergency locator beacon) in the survival kit. The pilot will also have another portable on his/her person.</p> <p>A foil “space blanket” can be used as an earth-mat and will be found in the survival kit. To use unfold, spread on the ground and place the beacon on it with the aerial vertical. A metallic panel such as a door from the helicopter is also effective.</p> <p>Turn the unit on and, once activated, remain at least 3 metres from the beacon to avoid distorting the radiated pattern.</p> <p>Stay with the helicopter until help arrives.</p> <p><b>Only activate one unit.</b></p> <p>The fixed ELT is able to be unclipped from the aircraft for use as a portable. If this is required fit and extend the portable aerial attached. An earth-mat (minimum dimension 120 cm square ) will increase the effectiveness of a portable beacon.</p>	<input type="checkbox"/>
<p><b>SURVIVAL KIT</b></p> <p><b>The helicopter survival kit should contain the following:</b></p>	
<ul style="list-style-type: none"> <li>▪ portable ELT</li> </ul>	<input type="checkbox"/>



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▪ signal mirror	<input type="checkbox"/>
▪ smoke flare (for day use)	<input type="checkbox"/>
▪ battery operated strobe light	<input type="checkbox"/>
▪ whistle	<input type="checkbox"/>
▪ safety razor and cord	<input type="checkbox"/>
▪ pocket knife	<input type="checkbox"/>
▪ compass	<input type="checkbox"/>
▪ matches	<input type="checkbox"/>
▪ magnesium fire starter	<input type="checkbox"/>
▪ 2 only Cyalume light sticks	<input type="checkbox"/>
▪ first aid kit (additional)	<input type="checkbox"/>
▪ snake-bite kit	<input type="checkbox"/>
▪ water purification tablets	<input type="checkbox"/>
▪ transpiration bags	<input type="checkbox"/>
▪ survival manual	<input type="checkbox"/>
▪ notebook	<input type="checkbox"/>

