Mines Safety Bulletin No. 137

Subject: Hazards associated with helicopter lifting operations

Date: 18 November 2016

Background

Mine sites and exploration activities may require helicopters to conduct lifting operations. The use of helicopters for lifting and transporting equipment requires an understanding of the dynamic forces applied during the lift and the required working load-limits of the lifting system.

Summary of hazard

During helicopter lifting operations, additional dynamic forces are exerted on the slinging equipment during the flight. These forces may be due to:

- banking or manoeuvring of the helicopter
- changes in helicopter travel speed
- wind and weather conditions (e.g. turbulence)
- potential aerodynamic effects from the load.

These additional dynamic forces may cause damage or failure of the lifting equipment, which can potentially result in loss of control of the helicopter and/or the load.

Contributory factors

- Ground crew and helicopter pilot not taking into account the dynamic forces that may be encountered during the lifting operation (e.g. slinging the load for static lift operations only).

Actions required

Principal employers, mine managers and supervisors of helicopter lifting activities are reminded of their duty of care obligations under the *Mine Safety and Inspection Act 1994*. The following actions are recommended to reduce the potential for incidents during helicopter lifting operations.

Competency

- Verify persons involved in planning and performing helicopter lifting activities are trained and competent for their role. For example, consider the use of a specialised crew to conduct the lifting operations.
- Confirm the helicopter and helicopter pilot(s) meet the requirements of Part 61 of the Civil Aviation Safety Regulations 1998 and section 29.6 of the Civil Aviation Orders *Air service operations – Helicopter external sling load operations*.

- Verify that the rigging of the load is carried out by licenced and competent person(s).

Lifting operations

- Conduct a suitable risk assessment prior to commencing the task. For example, consider the use of suitable lift plans or lift studies for the task.
- Ensure the load does not exceed the dynamic and/or static design capacity of the helicopter and lifting equipment.

  Note: Some helicopter manuals recommend for any cargo sling operations the sling equipment utilised must be capable of carrying three times the maximum anticipated load.

- Verify the integrity, stability and aerodynamic factors of the loads before lifting.
- Confirm that the pilot in control of the lifting operation has approved the size and weight of the loads to be hoisted, and the method by which they are attached to the helicopter.
- Verify equipment is fit-for-purpose, suitable for the operating conditions, and designed and manufactured to the required standards.
- Confirm all lifting equipment has been inspected by a licenced and competent person prior to use.
- Suitably brief all personnel involved in the operation before commencing the task.
- Establish and maintain suitable communications between the ground crew and the pilot.

Further information

- Civil Aviation Safety Regulations 1998, Flight crew licensing – Part 61, www.casa.gov.au/standard-page/flight-crew-licensing-part-61
- Federal Register of Legislation, Legislative instruments, www.legislation.gov.au/Browse/Results/ByTitle/LegislativeInstruments/InForce/C/37/0/all

  Civil Aviation Order 29.6 – Air service operations – Helicopter external sling load operations

- Department of Mines and Petroleum, What high risk work needs to be licensed? www.dmp.wa.gov.au/Safety/What-high-risk-work-needs-to-be-6217.aspx
- Department of Mines and Petroleum, Information sheets, www.dmp.wa.gov.au/Safety/Information-sheets-and-16176.aspx

  Frequently asked questions on dogging and rigging – information sheet

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