Safety alert

MINES

Mines Inspectorate
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Safety alert 237
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Rear Dump Truck Drives Over Light Vehicle

Mine Type: All Surface Mines

Incident: During dayshift, a loaded Cat 785D Rear Dump Truck was travelling off a bench towards the intersection with the ramp leading out of the pit. At the same time, a supervisor was travelling down the ramp in a Toyota Troop Carrier. The supervisor stopped at the intersection to let the truck exit the bench and to turn right onto the ramp. As the truck entered the ramp, the right front wheel (off driver's side) ran over the bonnet of the troop carrier on the driver's side. The truck continued up the ramp and only stopped after the supervisor contacted the truck driver via the two way radio. Nobody was injured in this incident.

Equipment: Cat 785D rear dump truck and Toyota Troop Carrier.

Hazard: Interaction of a light vehicle and heavy vehicle where the heavy vehicle operator has a restricted field of vision.

Cause: Preliminary investigations have revealed the following:

- The truck was travelling parallel to the light vehicle prior to the vehicles reaching the intersection. They were separated by the bunding on the ramp which restricted both drivers' visibility.
- The intersection design restricted visibility.
- In exiting the bench, the truck tended to cut the corner due to the difference in grades between the bench and the ramp.
- At a point in the turning arc, the troop carrier was completely hidden behind the 'A' pillar of the truck's cabin.
- The truck driver did not see the light vehicle due to the bunding along the edge of the ramp and warning lights which were ineffective during daylight hours.

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- The supervisor may have been distracted whilst testing the radio.

Comments:

Many incidents involving heavy and light vehicles interaction, including several fatalities, have occurred in the mining industry (Refer to Safety Alerts 205, 218 and 232).

Safety Alert 194 highlights the use of rills to separate vehicles to reduce the likelihood of collisions.

Recommendations:

Based on the preliminary investigation the following recommendations are made:

1. Separate light vehicles from heavy vehicles via designated, suitable roads.
2. Review the design of intersections to optimise the field of vision for heavy vehicle operators ensuring:
   - Approaches to the intersections are constructed at a flat grade for a minimum distance of at least the length of the longest vehicle using the intersection.
   - Installation of a median bunding / physical barrier to provide right angle entry to roads and to slow down turning vehicles.
   - Roads at intersections are at 90 degrees to allow for maximum visibility with windrows tapered as intersections are approached.
3. Use proximity detection and collision avoidance technology.
4. Review the effectiveness of the systems used to make light vehicles conspicuous during daylight hours.
5. Provide appropriate signage.
6. Review the effectiveness of communication procedures where vehicles interact.

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