



HAUL TRUCK TYRE EXPLOSION

INCIDENT

Whilst moving away from a stockpile, the raised tray of a haul truck severed a 33,000 V overhead power line. The driver proceeded unaware and parked up adjacent to an occupied crib room. Minutes later, a tyre exploded causing extensive damage, but no physical injuries.

CAUSE

The explosion resulted from the vehicle's contact with the power line. Electrical current can cause burning inside tyres and the build up of inflammable gases. Explosions occur when gas concentrations exceed a critical level and parts of the tyre remain sufficiently hot enough to initiate an explosion. With very high energy levels the action may be almost instantaneous.

COMMENTS AND PREVENTATIVE ACTION

Contacts with power lines is of serious concern and all persons involved should be aware of the following:

Dangers Involved –

- Electric shock may be suffered. Fallen power lines can remain alive, energise the vehicle or other metallic structures and are capable of unexpected movement.
- Tyre explosions can be devastating, with fragments being projected up to 200m. Brief contact with power lines can cause one or more tyres to explode immediately, or possibly hours later. Fire may be initiated.

Appropriate Action –

- Remain clear of fallen power lines and any affected vehicle. Isolate the electricity supply and alert the fire crew.
- The driver of any vehicle in contact with a power line should remain in the vehicle and attempt to summon assistance. If assistance is unavailable, the driver should attempt to free the vehicle by manoeuvres and/or driving away.
- Immediately, but carefully, the vehicle should be driven to a clear area where it can be left and the driver evacuated. Driver rescue may be effected using a similar vehicle which should approach from the front to allow the driver to step across.

- Do not approach within 300m of the vehicle for 24 hours or attempt to deflate the tyres –

“FLAT TYRES CAN STILL EXPLODE”

- Following the 24 hour stand-down period, all tyres will require internal inspection by competent persons. Seek advice from the tyre manufacturer.

Prevention -

- Avoid the erection of power lines in mobile equipment operating areas and minimise road crossings.
- Ensure overhead line clearances and height indicator requirements specified in Australian Standard AS3007.5 are met.
- Install ‘tray raised’ alarms and/or interlocks which restrict vehicle motion if a tray is not fully lowered. Consult the vehicle manufacturer.
- Tyres correctly filled with nitrogen will minimise the risk of explosions. Strict controls and standards are essential for this to be effective.
- Mobile equipment personnel need to be fully aware of the hazards associated with power line contacts and their duties and responsibilities should such occur –

“EFFECTIVE PROCEDURES REQUIRE PRACTICE”

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SAFETY AWARENESS SAVES LIVES