

Safe Roads and Conditions Awareness Package



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Safety Prompts

Symbols are used throughout this module to highlight specific points, particularly those that involve safety. The symbols and their meaning are shown below.



DANGER

This prompt is used when there is an immediate hazard that IS LIKELY TO result in severe personal injury or death if proper procedures are not followed.



CAUTION

This prompt is used to warn against potentially unsafe practices that COULD result in personal injury or death and/or property damage if correct procedures are not followed.



NOTE

This prompt is used when an operation, condition, or information is of sufficient importance to warrant highlighting.

SAFE ROADS AND CONDITIONS

1. INTRODUCTION

Driving or operating equipment is a high risk task.

At OTML the risk can be higher due to:

- Environmental conditions
- Road conditions.

Environmental conditions may include:

- Overhanging trees
- Fog on the road
- Wet weather driving
- Windy conditions
- Flooded roads
- Slippery road surface after rain
- Landslides.

Road conditions include:

- Continually changing mining routes
- Heavy loads carried on Kiunga and Mine roads
- Roads that are subject to high wear and tear and are generally gravel
- Unsealed roads
- Descending roads
- Vulnerability of the road surfaces to changes in conditions.
- Road design (width, camber, slopes).



2. HAZARDS

2.1 Driving Hazards

Common driving hazards and the associated risks include the following.

Hazard	Possible risks and consequences
Swerve or stop due to vehicle stopping suddenly in front, a person on the road, or an object falling from a vehicle.	<ul style="list-style-type: none"> • Collision with other vehicle, obstacle or pedestrian • Single or multiple vehicle accident • Vehicle damage
Skidding from tyres not gripping the road (wet or icy conditions) or driving too fast for conditions.	<ul style="list-style-type: none"> • Single or multiple vehicle accident • Vehicle damage
Forced off road by oncoming traffic.	<ul style="list-style-type: none"> • Collision with other vehicle, obstacle, person • Roll over • Single or multiple vehicle accident • Vehicle damage

2.2 Road Design and Maintenance Hazards

Common road design and maintenance hazards and the associated risks include:

Hazard	Possible risks and consequences
Narrow roads	<ul style="list-style-type: none"> • Collision with other vehicle
Tight turns	<ul style="list-style-type: none"> • Collision with other vehicle • Roll over
Poor line of sight and/or obscured view (vehicles and pedestrians)	<ul style="list-style-type: none"> • Collision with other vehicle, obstacle or pedestrian
Road surface wear and damage resulting in ruts, potholes, subsidence, uneven road surface etc.	<ul style="list-style-type: none"> • Tyre or other vehicle component damage • Loss of vehicle control
Adverse conditions (slippery wet road, poor visibility, glare, high winds)	<ul style="list-style-type: none"> • Loss of vehicle control • Collision with other vehicle or obstacle • Roll over

Designated routes have been designed, constructed and are maintained to a standard consistent with the operation and nature of the vehicles using them. Access control, direction of traffic flow, right of way, speed limits and height restrictions are determined by risk assessment, displayed on signage throughout the site and included in site maps and plans.



NOTE
 If necessary, and safe, pull off the road to allow oversized vehicles, convoy vehicles and other vehicles with right of way greater road access.



2.3 Traffic Management Hazards

Common traffic management hazards and the associated risks include:

Hazard	Possible risks and consequences
Drivers not adhering to road rules and speed limits	<ul style="list-style-type: none"> • Collision with other vehicle, obstacle or pedestrian • Single or multiple vehicle accident • Vehicle damage
Incorrect park-up	<ul style="list-style-type: none"> • Uncontrolled vehicle movement • Collision with other vehicle, obstacle, person • Vehicle damage
Inadequate separation of vehicles and pedestrians/pedestrian movement	<ul style="list-style-type: none"> • Collision between vehicle and pedestrian • Injury • Fatality • Vehicle damage
Livestock (domestic, farm, native animals) movement	<ul style="list-style-type: none"> • Collision between vehicle and livestock • Injury or fatality (of livestock and/or operator) • Vehicle damage

Signposting, signalling, surface marking, lighting and barrier protection of equipment and adjacent work areas are provided, as identified by a risk assessment. Where possible pedestrians are segregated from motorised vehicles and heavy and light vehicles are also be separated.

Special arrangements are used when traffic flow is restricted. These arrangements may include:

- Additional communication with affected personnel, e.g. during shift briefings, notices on notice boards, advice via two-way radio
- Alternate routes
- Additional signage
- Traffic control personnel, speed humps, gates and barriers
- Additional supervision.



3. CONTROLS

3.1 Road Design

Minimum requirements for the specification, design, construction, inspection prior to first use and maintenance of roads are in place. These requirements include:

- Competent and authorised persons are responsible for road design and approval
- Site Road Design and Maintenance Plans are developed and maintained
- Road designs, signage etc. must be consistent with, and incorporate, site traffic management requirements.
- Road design shall take into account the outcomes of the risk assessments for the site.
- All road designs are approved by the responsible OTML General Manager. Any change to existing roads that alters the intended design must be approved by the responsible OTML General Manager.

Each site shall develop and maintain a Site Road Design, Inspection and Maintenance Plan that considers the following in relation to that specific site:

- Road width, cross fall, crown, camber and curvature
- Clearance to infrastructure
- Line of sight
- Drainage to topographic contours and site environmental compliance
- Road grade
- Berms / windrows and guarding
- Structural response to applied loads
- Wearing course and materials
- Maintenance requirements according to wearing course selection
- Dust generation
- Minimisation of road surface and associated structures deformation e.g. rutting, corrugations, potholes, formation of fines and loose materials, pavement material lift, drain profile capacity and efficiency.



3.2 Drive to Conditions

Road conditions can change quickly and with out warning. Be alert for changes in the weather, road surface and surroundings. Drive more slowly in adverse conditions, or if you are unfamiliar with the area.

3.2.1 Tips for Driving on Unsealed / Gravel Roads

- Stay in tracks.
- Maintain effective following distance on gravel roads.
- Be ready for skids.
- Know your tyres and be aware of reduced traction.
- Steer safely.
- Be cautious when overtaking.
- Keep to the side of the road and check for visibility.
- Watch for pot holes.



NOTE

Engage 4 wheel drive at all times the vehicle is operating on unsealed roads.

3.2.2 Dust

In dry, dusty conditions drive slowly to avoid creating a dust plume.

- Drive with windows up and air conditioner on recycle to avoid dust in the cabin.
- Do not drive into the dust plume created by another vehicle as you may not be able to see obstacles in front of you.
- Arrange for the water tanker to dampen the work area before and during operations.
- Keep dusty loads covered, so that you do not spill material and contribute to the dusty conditions.
- If visibility is a problem and safety is compromised, stop operations, park-up the vehicle and contact your Supervisor.

3.2.3 Inclines and Declines

Engage an appropriate low gear **before** descending or ascending steep grades.

If you **MUST** park on a slope, chock the wheels.



3.2.4 Restricted Vision

Areas of restricted vision (e.g. blind spots, corners, around buildings, particularly where there is mixed occupation) should be identified and controls put in place. Controls may include:

- Mirrors
- Barriers
- Spotters.

In low lighting conditions:

- Maintain clean windows at all times and have cracked windows replaced as they may scatter light and distort images
- Assume that other drivers/operators are affected by the same visibility limitations and be prepared to take evasive action.
- Drive with your lights on
- Use a spotter with a torch if necessary.

When driving in areas of restricted vision, or where required by site rules, signals are used to warn others of vehicle movement (e.g. sounding horn).



3.2.5 Wet Weather Driving

Just after the rain begins, the oil mixes with water and makes the road very slippery. Vehicles may skid on the slippery surface.

Skidding:

- Release the accelerator.
- Do not brake.
- Occurs at speeds as low as 10 km/h.
- Worn tread and low tire pressure.

Avoid driving through deep water or mud if possible.

- Drive on well formed and well drained tracks as far as possible.
- Keep wheels on hard ground.
- Drive using the appropriate gear and avoid changing gears when driving through water.
- Increase the travelling distance between vehicles (e.g. apply the 6 second rule) to allow for greater stopping distance.
- Make all water crossings in 4WD mode.
- Take off your seatbelt and wind down the windows before fording a large body of water in case you are swept off the road and need to exit the car quickly.
- After crossing a body of water dry your brakes by pressing both the brake and accelerator pedals slowly while the vehicle is moving.



If you are getting stuck in mud:

- Turn wheels side to side a few times to push mud out of the way
- Shift to H4/L4
- Lightly touch accelerator pedal to ease forward
- Rock the vehicle if necessary
- Shift from forward to reverse and lightly touch accelerator



3.2.6 Driving at Night

If possible, avoid travelling at night. If you must travel at night:

- Increase the distance between vehicles
- Do not attempt to negotiate rocky ground or water crossings at night
- Avoid travelling at dusk or dawn when animals are most active
- Watch for people and animals crossing your path and be ready to take evasive action as necessary
- Use the vehicle lights appropriately:
 - Use high beam when there are no oncoming vehicles
 - Dim the high beam lights when an oncoming vehicle approaches. If a vehicle comes toward you with bright headlights, look toward the side of the road. This will keep you from being blinded by the other vehicle's headlights and allow you to see enough of the edge of the road to stay on course
 - Use low beam when following another vehicle or when in heavy traffic
 - Use low beam in fog and hard rain (or fog lights if the vehicle is fitted with them). Light from high beams will reflect back, causing glare and making it more difficult to see ahead
 - Do not drive at any time with only your parking lights on
 - Check the lights at intervals and clean any that have become obscured, particularly rear lights and indicators.



3.3 Separation

Vehicle and mobile equipment routes are designated and signposted. Speed limits are set, signposted and enforced, and restricted to walking pace in areas of mixed pedestrian and vehicle occupation. Pedestrian walkways are physically separated from operating vehicles and mobile equipment (e.g. barricades, raised walkway, distance of 3 metres or more etc.), and clearly marked. Pedestrian crossings are designated, clearly marked, and illuminated if used outside daylight hours. Pedestrians have right-of-way at crossings. Exclusion zones for vehicles, mobile equipment and pedestrians are defined, clearly marked and enforced.

Site assets protecting against vehicle, mobile equipment and pedestrian interactions must be maintained, including signage, markings, lighting, mirrors, barricading etc.



CAUTION

Report any missing or damaged assets immediately so they can be repaired or replaced. Safety is everyone's responsibility.



