

Mining and Resources industry



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ARRB's expertise in managing roads, integrating transport, improving safety of road users and assessing vehicle dynamics is applicable not only to the public road network but also to private road networks. Our expertise will help you to improve occupational health and safety, extend the life of roads and contribute to productivity improvements.

ARRB provides a range of services to assist you to:

- proactively manage employee fatigue and performance
- improve the safety of your site traffic through safety audits and management plans
- ensure that your traffic management systems meet the current best practices
- manage the safety and efficiency of heavy vehicles through testing and modelling
- manage your unsealed roads through the application of proven design and maintenance practices
- determine causal factors of incidents in a scientific and objective manner
- increase your internal expertise through our knowledge transfer training programs
- identify potentially hazardous sections for priority treatment and thereby providing valuable resource efficiencies.



Fatigue management

Is fatigue having an impact at your site? Successful fatigue management can...

- reduce fatigue incidents and accidents
- increase productivity
- improve care and maintenance of vehicles (reducing tyre damage)
- improve mental and physical well-being of your workforce.

ARRB provides a range of services designed to assist with fatigue management. These include:

- fatigue risk questionnaires on health and lifestyle
- proactive fatigue management training
- a real-time driver performance monitoring and warning system
- profiling of driver performance for varying shifts, rosters and breaks
- development of fatigue management policy and site specific plans.





Road safety and traffic management

ARRB can assist you to:

- minimise and manage the risk of injury and property damage
- improve traffic management
- reduce costs and inefficiency
- satisfy legal and duty of care obligations.

Some of the issues that ARRB successfully addresses include:

- management of pedestrians, heavy and light vehicle interactions
- development of speed management strategies
- providing safe access, traffic circulation and parking designs
- auditing and improving intersection layout and controls
- improving the use of traffic signs, lines and delineation
- correct management of roadside hazards and use of safety barriers
- assessing road geometry and driving conditions
- improvement and management of the interaction between the road and rail networks
- development of traffic management plans, protocols and procedures.



Better management of mine haul roads

ARRB can assist clients to gain significant operational and safety efficiencies on haul roads by:

- applying appropriate geometric design standards that will ensure efficient and safe operation of large vehicles
- developing appropriate road drainage systems to ensure longer life pavements and reduced road maintenance requirements
- preparing pavement designs that meet the demands of heavy haul vehicles to ensure roads are kept operational for longer periods with lower road maintenance requirements
- mixing and blending of available pavement materials to improve ride quality, minimise wear and tear and reduce maintenance requirements
- developing comprehensive asset management systems including appropriate economic construction and maintenance practices that take into account life cycle costs to ensure overall effectiveness
- quantifying potentially hazardous sections by measuring road attributes such as roughness or geometry.



innovative and efficient road and vehicle solutions

Heavy and light vehicle fleet safety

ARRB has developed a proven set of programs and services that can assist organisations to best manage their heavy or light vehicle fleets, such as:

- driver safety education programs
- incident investigations and analyses
- development of key performance indicators and risk measurements
- vehicle safety standards
- benchmarking programs and workshops
- risk management training and guideline manuals
- car park safety and security
- fatigue management
- safe road design
- fleet safety gap analyses
- safety for fleet and work related travel in high risk areas
- policy development and support.



Independent incident reconstruction and visualisation techniques

ARRB provides independent incident investigation services using state-of-the-art reconstruction and visualisation technologies. We can assist with any land transport related incident throughout Australasia: from rapid at-scene response where the identification and preservation of evidence is paramount, providing expert witness services, to feeding back lessons learnt from investigating incidents to achieve positive road safety and operational gains. Our specialist team can investigate, reconstruct and visualise vehicle and pedestrian collisions and incidents and can provide:

- collision scene response
- incident investigation, reconstruction and visualisation
- crash event simulations
- chronology, causation and liability advice
- human tolerance to injury (biomechanics)
- occupant protection (e.g. seat belts, airbags, helmets)
- highway design, provision and maintenance
- road user and road environment interaction
- vehicle stability and performance.



innovative and efficient road and vehicle solutions

ARRB has conducted a diverse range of projects for the mining and resources industry including...

Fatigue management

- review of the fatigue management system at Batu Hijau (Newmont Indonesia)
- use of the ARRB proactive fatigue management system at Tarong Coal (Rio Tinto Coal Australia)
- performance assessment of haul truck drivers over successive night shifts (Coal Services)
- investigation of crashes on the way to and from coal mines in NSW (Coal Services).

Heavy and light vehicle fleet safety

- advised on policy framework for light vehicle safety (Shell)
- risk reduction communication programs and strategies (Reliance Petroleum/BP)
- advised on behavioural safety measures (BHP Billiton, Energy Coal)
- roll stability and safe cornering speeds driver training video (Readymix).

Road safety and traffic management

- numerous road safety and traffic management projects for clients such as BHP Billiton Iron Ore, BHP Billiton Nickel West, Illawarra Coal, BMA, Worsley Alumina, Rio Tinto, Fortescue Metals, Xstrata, Woodside, Ensham Resources, Newmont, Alcoa, Roaring 40s, and others
- pedestrian network assessments (Worsley Alumina, BHP Billiton Iron Ore)
- construction traffic management (BP, BHP Billiton Nickel West, Roaring 40s, Wind Prospects)
- car park management assessments (Woodside, BHP Billiton Iron Ore)
- traffic management reviews (Rio Tinto, Newmont, Xstrata, BP, GEMCO)
- railway network assessments (BHP Billiton Iron Ore, Fortescue Metals).

Heavy vehicles testing and modelling

- testing of multi-combination vehicles at Burton coal mine
- review of CAF truck operations at Olympic Dam
- risk assessment of coal haulage operation at Eraring power station
- speed profile and cycle time study for road train haulage options
- roll stability and load sensitivity assessment for tanker and rigid service vehicles
- testing heavy vehicle braking performance on steep grades.

Managing roads

- preparation of road classification, geometric and maintenance intervention levels for forest roads
- training in the better management of unsealed roads
- integration of logging truck traffic with classified forest roads
- preparing a maintenance manual for unsealed roads
- comprehensive asset management strategy for a large private unsealed road network
- developing a mine haul road design manual.



About ARRB:

ARRB Group Ltd (ARRB) provides research, consulting and information services to the road and transport industry. ARRB applies research outcomes to develop equipment that collects road and traffic information and software that assists with decision making across road networks. ARRB is the leading provider of road research and best practice workshops in Australia.

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