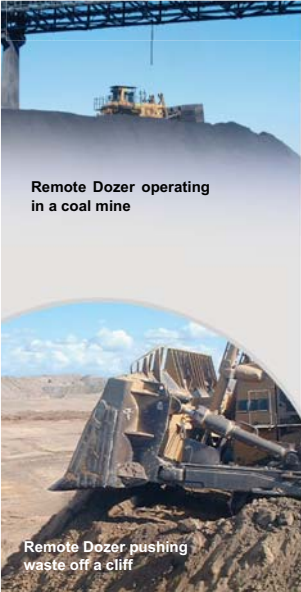


Shift the risk, and the tonnes continues



An air-conditioned, trailer-mounted mobile control room provides operators with a comfortable work environment and the station is protected by an integrated four-beam electronic barrier system.

Onboard machine GPS data is displayed in the operator cabin via a 17-inch touch screen, while vision from machine cameras is viewed on a large LCD, split-screen style layout and audio feedback is also relayed into the control room.

Remote pan-tilt cameras provide CCTV-style coverage of the stockpile area, with the cameras able to be adjusted by the operator using a touch screen in the control room.

The control room has an external power supply connection, with an onboard generator set and low voltage DC power maintaining continuous supply to all critical systems.

Dozer pitch and roll angles were continuously streamed back to, and shown on, control cabin screens, while critical machine engine function faults were monitored and failures displayed on screen.

This is a solution to the high-risk potential for coal stockpile dozer and operator engulfment.

It gives the operators a safe and comfortable work environment, and as much machine feedback as required.



First commercial machine commissioned with Guidance technology

Guidance Breakthrough

More productive, less machine damage and safer underground mining is just around the corner following successful testing and market release of Remote Control Technologies' breakthrough Control Master Guidance technology.

As the leader in the tough Australian market for underground remote control systems, RCT has put **Control Master** Guidance through an extensive development and test process and is now fielding an increasing volume of requests to introduce the system at mines around Australia, and offshore.

The technology puts Teleremote controlled loaders in auto-tramming mode, literally at the flick of a switch, between stoping and stockpiling operations.

At a gold mine in Western Australia this meant loaders fitted with **Control Master** Guidance technology trammed autonomously for about 150m or more about 60% of the time they were working, in a tight drive without the loaders being damaged while tramming at typical speed. The mine introduced R2900 loaders into a drive where it had previously run R1700s, without missing a beat.

Mine operators seeking productivity gains of 15% or so from the introduction of this technology will be impressed by this example because it shows that a loader with a 7.2 cubic-metre bucket working in the same drive as a 5.7cu.m machine and carting the same number of loads per hour is going to deliver a productivity increase of at least 25%.

The bigger loader is naturally also going to need fewer trips to achieve the same tonnage.

One WA gold mine performed a time in motion study comparing Teleremote/Guidance on the same size loader (R1700), and the results were very encouraging with significant gains achieved.

The System has also shown that operators Teleremoting loaders working semi autonomously most of the time are less fatigued than operators controlling machines continuously through production cycles. This difference proves beneficial in gaining greater productivity through greater operator awareness.

Dust was less of a problem for the loader tramming semi autonomously under guidance. In one mine where some drives had a major issues with dust, the operators were pleasantly surprised to be able to continue tramming with **Control Master** Guidance, whereas under Teleremote or manual operation the dust would have inhibited operation.

Story continues next page

New Product Release

LASER GUARD MACHINE CONTAINMENT SYSTEM

The **Control Master®** Laser Guard Machine Containment system has been designed for underground Remote/Teleremote mining applications where multiple entries to a remote mining area need to be guarded from the remote machine exiting the area, as well as personnel entering the area. The master unit can receive signals from up to four (4) control laser unit kits. Each control unit kit consists of two (2) lasers spaced 800mm apart which gives double redundant operation. This prevents personnel being able to duck under or step over the laser beams without triggering the laser guard.



FEATURES & BENEFITS

- ▶ Improves remote mining safety
- ▶ Dual redundancy system
- ▶ Prevents machines/personnel entering and exiting the remote mining zone
- ▶ Laser guard diagnostics inbuilt into the master unit
- ▶ Latest technology that prevents false tripping and operation ensures correct connection



Mine operators seeking productivity gains of 15% or so from the introduction of this technology will be impressed

Guidance Breakthrough continues

Shift the risk, and the tonnes



RCT developed **Control Master** Guidance to help minimise machine damage and increase the general tramping speed of the machine to improve operational efficiency.

The technology can be described as “the new evolution in Teleremote mining”. Most underground hard rock mines in Australia operating loaders by remote control are using Teleremote systems, the majority of them supplied by RCT.

The standard Teleremote system hardware does not change much with the arrival of **Control Master** Guidance. However, the operator station, transmitter and receiver require upgrading. If the mine is already Teleremote mining then the **Control Master** existing communications network is suitable for Guidance.

An operator using **Control Master** Guidance only has to direct the machine with the joystick to move forward, back, or to turn a corner. “Guidance does the rest,” an operator said.

Steering, braking and machine speed are automatically controlled and is dependent on joystick position, minimum width of the drive and the look-ahead distance. Guidance is selected and de-selected from the right joystick on the operator station.

The technology can be described as “the new evolution in Teleremote mining”.

A ‘Guidance-in-Operation’ alert shows up on the screen to ensure the operator is aware of which mode they are in. The system incorporates speed control, ensuring a machine travels at the correct speed to suit the conditions. Guidance can be fitted to new or existing machines.

RCT has so far successfully installed Guidance packages to an Atlas ST1030, CAT 1300, CAT R2900, a new CAT R1700 and a Toro LH514 with more to come in the future as more customers are taking advantage of this new Technology paving the way for the future for underground mining.

Contact your Area Sales Manager for more information



Well documented risks associated with operating bulldozers on coal stockpiles has become a thing of the past for mine operators as a transition to a world-first Teleremote dozer control technology, being used in central Queensland has proved successful.

Following extensive research on coal stockpile incidents around the world, and investigations into potential solutions, one large central Queensland coal miner commissioned Remote Control Technologies (RCT), the world leader in dozer remote conversion, to design and build a state-of-the-art dozer remote control system.

Various improvements have been implemented during the system development and once the complete system ticks all the boxes, will be rolled out across the company’s coal handling and preparation plant stock piles that use dozers.

RCT has been focused on overcoming numerous technical obstacles previously seen as serious impediments to productive and safe use of remote controlled dozers. They included telecommunications bandwidth requirements for operating several dozers simultaneously on remote control with remote vision on the same stockpile; light refraction issues associated with operating machines by remote camera vision in sunlight at certain times of the day and when operating at night when coal absorbs light; and limited remote vision transmission broadcasting frequencies available at most sites.

There have been many incidents in Australia, the USA and elsewhere of stockpiles slumping and the machine collapsing into the coal and being engulfed. It is very much a ground-breaking development to operate the dozers on remote control on coal stockpiles.

The stockpile is also continually varying in size and shape and the machines operating on a stockpile can gyrate on and around the stockpile to a multitude of different angles and positions. This makes sustaining any radio communications very difficult.

The remote control system, including vision, also needed short-term battery back-up power to cover for mains power failure.

RCT installed the first system for the Queensland coal miner back in late 2007. Reviews and upgrades have been ongoing.

The main catalyst for the project was the need to remove the operator from the machine work environment, which is the stockpile.



Remote Dozer operating on a coal incline

There have been many incidents in Australia, the USA and elsewhere of stockpiles slumping and the machine collapsing into the coal and being engulfed. It is very much a ground-breaking development to operate the dozers on remote control on coal stockpiles. Others who’ve viewed the project say it’s never been done before and hence from an operational point of view it’s been a very steep learning curve.

The technology is applicable to all situations where dozers are used on large mechanised stockpiles. In fact for applications in both the stockpile and mining process area it removes potential safety and whole of body vibration issues and allows existing processes to be performed in a different manner which may increase productivity.

To overcome the previous technical barriers to Teleremote control dozer operation, RCT devised a new vision transmission system that can operate outside of traditional broadcasting frequencies.

Story continues next page

New Product releases



Fuel cap isolation system



New AMS series 2



Nordic LED N25 lights



Deutsch DTM service kit

FOR MORE INFORMATION PLEASE CONTACT US