



CASE STUDY - CONTROLMASTER® LINE-OF-SIGHT ALLIANCE RESOURCES – RIVER VIEW COAL, UNIONTOWN, KENTUCKY



RCT's solution eliminated potential risks as operators can now carry out their job without having to physically sit in the dozer to operate it – avoiding unstable areas and adhering to MSHA's new regulation.

THE IMPOSSIBLE MADE POSSIBLE WITH CUSTOM TECHNOLOGY

OVERVIEW

American-owned Alliance Resource Partners' River View Coal Mine in Uniontown Kentucky is the largest mine of its type in the nation.

The underground continuous mining complex has been in production since 2009 and utilises 18 continuous miners in a room and pillar configuration.

It has a preparation plant on site with a throughput capacity of 2,721 tonnes of raw coal per hour which produces a waste product of coal material. This material (otherwise known as coarse coal refuse CCR and slurry FCR). The CCR is used to construct an earthen dam that contains the FCR that is pumped to the dam. The CCR is hauled to the site and dumped then spread with dozers.

While River View Coal mine's engineer Mark Henshaw said the process wasn't an issue at the site, the Mine Safety and Health Administration (MSHA) ordered the mine pushing CCR into tailing pond to find a solution to remove the operator from the dozer. Although there were a few options available, River View Coal management chose to utilise remote control technology on its dozers.

The client had two dozers in operations, a Caterpillar D6T and a Caterpillar D8R. Management was told by other remote technology companies that adapting a system to the older, D8R dozer was virtually impossible, however, RCT was unconvinced. Consequently RCT was awarded the contract in April 2015.

SOLUTION

RCT is well-known in the industry for being able to adapt its technology to ANY MACHINE and was therefore keen to rise to the challenge of retrofitting its ControlMaster® Remote Dozer system (ATX2200) to the dozers. A rather challenging job that was successfully completed by RCT's Custom team – a dedicated projects team with the resources and expertise to find the answers to problems and adapt current systems.

While the deployment of the remote system to the D6T dozer was a standard installation, the D8R required a large amount of hardware to be fitted in order to achieve all functions remotely.

RCT specialist Thomas Lavery described the D8R installation as an extremely challenging job; however this didn't discourage him and the team from tackling it head on.

"It was a massive task as the D8R was about 15 years-old so it was all mechanically controlled, whereas most new models we deal with today are now electrically controlled," said Mr Lavery.

The process required a collaborative approach; with the Custom team engaging with RCT's development team, a hydraulics specialist and a machinist to hand-make some of the componentry.

Like every installation, it was integral that RCT didn't alter any of the mechanics or functionality of the machine.

"It was important we maintained the mechanical feel for the operator," he said.

"This involved converting the machine to electric, before converting it to hydraulic and then back to mechanical in some instances."

This project was not only a first for RCT but most likely the first D8R to be put on remotes ever before.

"Because it was our first time we have remoted a D8R, there was no past history available to guide us, which is challenging in itself."



On top of this, the team struggled to find a similar machine close by to test the system on.

“Eventually we were able to locate a similar dozer about 200kms away. However we only had access to it for a total period of four hours, so it was during this small timeframe that we had to do our design.”

“Testing the system also posed a difficulty, so we did as much bench testing as humanly possible.”

Mr Laverty credited his experienced team for the success of the job as the mechanical aptitude required to understand the machine was extensive.

“We are lucky to have such an experienced team here at RCT, so we were able to draw on this extensive experience to create something that other remote companies said was virtually impossible,” he said.

RESULT

The RCT Custom team adapted the standard ControlMaster® dozer remote system to directly meet the client's requirements.

Both systems allow operators to remotely control the dozers; pushing CCR into the tailing pond, from a safe distance, on stable ground using Line-of-Sight.

RCT's solution eliminated potential risks as operators can now carry out their job without having to physically sit in the dozer to operate it – avoiding unstable areas and adhering to MSHA's new regulation.

RCT has received extremely positive feedback about the job carried out at River View Coal.

“We have been told that the 15-year-old machine is now the preferred machine of use – we got a fair buzz out of hearing that! It's a definite credit to the team,” Mr Laverty.

Another one of RCT's strengths is that it documents each project in detail.

“We are now able to reproduce the system for similar machines in the future if required,” he said.

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COMMENTS

“My overall impression of RCT is that they are a very professional company with a reliable product – I'm very pleased,” said River View Coal mine engineer Mark Henshaw.

“The D8R is an older machine and was a much more intense installation – they did a really good job in setting it up and within a couple of weeks it was up and going,” he said.

“We are very happy, RCT are very professional and very reliable and cost efficient.”

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