

MODULAR MINING

LOCATION

Cesar Coal Basin,
Colombia

OBJECTIVE

Help Drummond Ltd.
Colombia locate and track
equipment and personnel
at shift change for
improved efficiency

OUTCOME

Production gains of at least
20 loads per shift or nearly
1.4M Bank Cubic Meters
(BCMs) of additional
material moved per year

Modular Mining Helps Colombian Coal Operation Achieve Significant Production Gains by Automating their Shift Change Process

Challenge

Long-time customer Drummond Ltd. Colombia sought Modular Mining's help in reducing the amount of time wasted during the two daily shift changes at their Mina Pribbenow and Mina El Descanso sites. Despite extensive experience using the DISPATCH® Fleet Management system (FMS), Drummond's shift changes frequently took up to an hour to complete.

Background

The mines' lineup and shift change processes were managed manually, which led to an inability to manage and enforce parkup assignments. Additionally, if operators doubted that they had sufficient time to travel to and from the dump before shift-end, they would stop their trucks at whatever park-up spot was most convenient. Because the ad-hoc park-up locations were often unidentified or located far apart, supervisors had difficulty getting oncoming operators to their assigned equipment units.

Missing operators at trucks caused delays and long queues at shift-start, and a decrease in productivity and production.

Methodology

At Drummond's request, Modular Mining sent an experienced mining engineer to Mina Pribbenow to evaluate the shift change process, map the workflow, and identify how the DISPATCH FMS' Parkup and Lineup Management modules (described below) could help resolve the problem.

The Parkup module enables the dispatcher or supervisor to automate the assignment of equipment to a parkup location at shift change, thus reducing the possibility of an operator leaving equipment in an undisclosed location. Assignments are optimized so that trucks are allocated to parkup locations near the assigned end-points when trucks are unable to complete an additional full or empty haul.

With this module, the dispatcher or supervisor has an effective and timely decision-making tool for parkup assignments, making it possible to maximize production during the last hour of the shift in progress and the first hour of the subsequent shift.

The Lineup Management module analyzes information from the DISPATCH system central database based on the criteria selected (priority, qualification, or availability) and automatically assigns qualified personnel to equipment before the start of a shift.

Lineup assignments can then be quickly and easily communicated to equipment operators through a scrolling display on a monitor.

The module can also be used to manually assign operators to equipment units or override automatic assignments.

Solution

Over a four-month period, the Modular mining engineer installed the Parkup and Lineup modules, re-evaluated the productivity data, helped the mine reformulate a number of standard operational procedures, and modified the DISPATCH system configuration.

Results

Per Drummond's calculations, the increased number of loads they are able to achieve corresponds to approximately 120K Bank Cubic Meters (BCMs) of additional material moved per month, or nearly 1.4M BCMS over the course of a year.

“Because of the efficiency gains we've achieved by implementing the modules, our production has increased by at least 20 additional loads per shift.”

Javier Uribe, Dispatch Lead Engineer at Drummond

Conclusion

The combination of the analysis of the mine's processes and workflows, the implementation of the modules, and Drummond's willingness to allow changes to their FMS configuration, enabled the mine to experience a dramatic turnaround in shift-change efficiency and a significant increase in productivity.

Legal Notice

The contents of these materials are protected by federal and international intellectual property laws. No portion of these materials may be reprinted, republished, modified, reproduced, sold or distributed in any form without the express written consent of Modular Mining Systems, Inc. Modular® and DISPATCH® are trademarks and/or registered trademarks and the sole and exclusive property of Modular Mining Systems, Inc. These materials, including third-party information, are provided for information purposes only. Actual specifications may vary from those documented in these materials. Consult your local Modular Mining office for further details.

Modular Mining Systems, Inc.
3289 E. Hemisphere Loop
Tucson, AZ 85706-5028 | USA
Phone: (520) 746-9127 | Fax: (520) 889-5790
www.modularmining.com

© 2017 Modular Mining. All rights reserved | CS-DIS-DRUMMOND-EN-LT