SE SUPPLIERS REPORT

HD **Rebuild Program Offers New Life for Older Cat 785/789s**

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Caterpillar and Cat dealers now offer Cat Certified Rebuild Upgrade (CCRU) services for older 785 and 789 haul trucks. Cat said its rebuild program for the original series and the **B** Series models of these trucks incorporates the technological advancements introduced with the C Series to improve operation and performance and reduce engine emissions.

The CCRU provides a full rebuild and certified rebuild warranty along with a Cat upgrade retrofit cab and chassis updates. The results, according to the **company**, are improved fuel economy, performance and productivity as well as a modernized cab for operator comfort and improved engine emissions equivalent to U.S. Environmental Protection Agency (EPA) Tier 1 standards for sustainable operation.

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Cat said the 3512B EUI engine for the 785 and the 3515B EUI engine for the 789 deliver about 5% more power and provide the potential for fuel savings of 3%-4%. Also, recommended service intervals are extended from 250 to 500 hours.

The upgraded cab includes VIMS 4.0 for monitoring machine health and optimizing production cycles to reduce cost per ton. A full size trainer seat facilitates in-cab training.

The CCRU program for 785 and 789 trucks is available now in the United States, Australia, Indonesia, South Africa, Chile and Russia.

Trimble Buys Information Management System Developer MIS

Trimble Navigation has acquired privately held **Mining** Information Systems (MIS), headquartered in Perth. Australia. The **acquisition**, said Trimble, will add enterprise-level information management capabilities to its portfolio of **mining** solutions, offering the prospect of improved productivity, profitability, and safety by providing a more complete view of geospatial, productivity, workforce and cost data. Financial terms were not disclosed.

MIS provides information systems for data required for enterprise-wide monitoring and management of **mining** and **ore** processing **operations**. MIS systems collect and Integrate data across functional areas and sources, regardless of data origin. This capability, said Trimble, when combined with its geospatial solutions, can provide increased mine productivity through the aggregation, analysis and presentation of information that enables better decision making for **mining** customers.

"Productivity applications in functional areas such as drill and blast, haulage, and materials processing have improved operational efficiencies, but the value of this data has not been fully realized since it is not readily collected and integrated for a complete, site-wide view. MIS offers an enterprise-level system that unlocks data and metrics from across functional areas for a complete view of mine productivity and profitability for decision makers across planning, **operations** and finance," said Nathan Pugh, business area director of Trimble's **Mining** Division. "Trimble offers high levels of accuracy in geospatial solutions today, and with the enterprise-level mine information platform, we can increase the use and value of geospatial data and other data sources for our customers."

MIS said its solution suite is modular with systems for mine production, processing **operations**, human resource management, and a Web-based portal for access and administration. According to the **company**, the systems are flexible, scalable and are not restricted by **mining** methods, commodities, time zones, language, currencies, units of measure, existing software, hardware and network infrastructure.

Schneider and Business Partners Offer End-to-End **Mining** Management Solution

Management consultant Accenture, networking systems provider Cisco Systems, and **energy** management specialist Schneider Electric recently announced the launch of a jointly developed Integrated Planning and Optimization platform that is claimed to provide a software solution for managing a **mining company**'s entire operation from resource to market. The solution, according to the developers, enables users to optimize plans and schedules, identify risks and deviations, pinpoint inefficiency, and present the right information to the right people at the right time. The solution is claimed to be capable of increasing **mining** productivity up to 20% by helping **mining** companies use information to drive operational efficiencies.

The product addresses the challenges of "siloed" data and inaccurate, untimely information. Integrated Planning and Optimization, according to the developers, enables data to be leveraged to model the supply chain-including mines, processing plants, stockpiles, transport routes and port movements-to predict how each entity in the value chain will operate. The solution lets companies view their supply chains both as discrete components and as a single system that operates according to unified objectives and metrics. Integrated Planning and Optimization Solution uses data analysis of contextual process information to improve predictive maintenance and identify and resolve bottlenecks.

The developers noted that **mining** companies have been held back by the lack of standard solutions and realizable architectures. The implementation of an integrated planning and optimization solution resolves these issues. **Mining** companies can start by focusing on areas that could generate immediate benefit, including:

* Lack of dynamic and optimized extraction sequencing.

* Lack of optimized load in shovels and other transportation means.

* Poor process performance (quality, recovery).

* Costly decisions due to unreliable data (such as inventory, grade, geological structure).

* Nonconformance to load-out plans.

* Excess **energy** and water consumption.

* High cost of inefficient transport scheduling and use.

* Poor asset performance.

* Maintenance and production conflicts.

* Excess inventory due to an unreliable supply chain.

Diego Areces, president of Schneider's **Mining**, Minerals and Metals Solution, said, "This solution is a game-changer for leaders in the **mining** industry by allowing executives to gain intelligence around business scenarios prior to committing to capital investments."

Integrated Planning and Optimization Solution utilizes Schneider Electric's StruxureWare for **Mining**, Minerais, and Metals (MMM) software, a scalable platform that includes solutions for **energy** management and asset performance. This platform facilitates ease of integration for new functionalities as needed.

Heavy-lift Cranes Support Work at Chilean **Copper** Sites

Five Liebherr 1250 HC tower cranes are being used at two major **mining** projects under construction in Chile's Atacama Desert region. The large 40- and 50-metric-ton (mt) cranes currently in use at Escondida and Sierra Gorda offer lifting capacity equal or better than almost any other tower cranes working in Latin America, according to Liebherr.

Two of the **company**'s 1250 HC 40 Litronic tower cranes, mounted on foundation anchors, are being used at the Minera Escondida**copper** mine. Both machines have a working radius of 52 **m** and hook

heights of 40 m and 52 m, respectively. During the construction phase, they are expected to handle loads of up to 20 mt.

After current construction is completed, the two Liebherr tower cranes will be used for maintenance purposes.

Meanwhile, three 1250 HC tower cranes are in use at the Minera Sierra Gorda copper project. Two of these cranes are rated at 50-mt capacity and the third at 40 mt. The 1250 HC 40 has a hook height of 34.9 m and a working radius of 51.9 m. The two 1250 HC 50s are configured with hook heights of 68.5 and 69.6 m and each has a working radius of 38.8 m.

During the current construction phase, the cranes are being used to assist in component handling for process tank assembly, lifting loads of 14 to 17 mt per component.

In the future, all three cranes will be used as maintenance cranes at the mine. One 1250 HC will support maintenance work on the mill's flotation cells. The two others will support service and maintenance work on ball mills.

Liebherr said the extreme geographical and climatic conditions of the two project sites not only present challenges to the workforce but also to the crane equipment. The extreme day/night temperature differential-up to 40°C variation-and dust present in the arid desert climate generate higher-than-usual stress on machinery.

In addition, Chile is one of the most earthquake-prone countries in the world, and earthquakes up to a magnitude of 5 are not uncommon. This requires that the cranes must comply with Chilean standards to ensure they are earthquake-resistant.

ABB Introduces Underground Asset Location and Tracking

ABB recently announced the debut of ABB Mine Location Intelligence, powered by Mobilaris, a global provider of software for mobile location-based services. ABB said its Mine Location Intelligence is a product for location-based decision support that provides real-time positioning of vehicles, equipment and personnel in underground mines.

ABB Mine Location Intelligence has a Web-based user interface, making it accessible from almost anywhere, providing a 3-D view that shows location of assets and personnel in real time. It offers features for spatial search, navigation support, advanced data mining and analysis, creation and management of geofences, and is accessible online from anywhere.

According to the company, the service "opens a new dimension to personal safety," showing the nearest rescue refuge, the best emergency escape routes, and can also prevent workers from approaching dangerous areas by providing automated surveillance.

In addition, said ABB, the service can enhance productivity by providing real-time location information for production control and mine automation. It can increase collaboration between personnel by integrating voice, message and CCTV services.

"ABB Mine Location Intelligence will help customers to visualize their mining operations and reach a new level of situation awareness. This will change how mines are operated and will be an important tool for increased safety and production efficiency," said Patrik Westerlund, global product manager for integrated mine automation at ABB.

Siemens Systems to Power New Grinding Mills at Toromocho

Siemens' Drive Technologies Division has been awarded a contract to deliver Integrated Drive Systems for two new mills at the Toromocho mine in the Peruvian province of Yauli. The order was placed by Minera Chinalco Perú S.A., a subsidiary of Aluminum Corp. of China (Chinalco).

Toromocho is located about 150 km from the capital city of Lima, at an altitude of approximately 4,600 m (15,100 ft). Siemens will provide two gearless mill drives and Sinamics cycloconverters for a new production line at the mine as part of an expansion project that will enable it to produce about 250,000t/y copper as well as molybdenum and silver.

The new line's 36-ft-diameter SAG mill will be fitted with a 13.5-megawatt drive and a 22-megawatt drive will power the line's 28-ft-diameter ball mill. Siemens said the Sinamics cycloconverters that will be Installed in the new line are characterized by low switching losses and high efficiency, and the integrated drive and cycloconverter system will contribute to an expected equipment availability rate of more than 99%.

New Integrated System Simplifies Surplus Asset Sales

Used heavy equipment seller Ritchie Bros, and AssetWorks, a provider of Enterprise Asset Management software solutions, recently announced the availability of a prepackaged integration between the Ritchie Bros. EquipmentOne marketplace and AssetWorks Surplus Management Software (SMS). Designed to allow AssetWorks' customers the ability to seamlessly post assets to EquipmentOne, the integration is claimed to reduce the time and effort required to identify, list and sell surplus equipment.

AssetWorks' SMS users can identify assets for **sale** and post those assets along with all the required equipment specifications, condition descriptions and photographs directly from SMS to the EquipmentOne marketplace. They receive daily pricing feedback and final **sale** data when the **sale** completes. Automating these processes, according to the **company**, can improve accuracy and significantly reduce the time to conduct sales across a number of different asset categories.

"Managing assets from **acquisition** through disposal can be difficult and our solutions have always been aimed at streamlining this process. With our integration to EquipmentOne, we're delivering additional value and really closing the loop on asset management for our customers," said Michael Borello, vice president of AssetWorks.

Ritchie Bros. has **operations** in more than 25 countries, including 44 auction sites worldwide. AssetWorks said its software solutions help organizations improve access to shared asset data, promoting greater transparency across the organization, improving service delivery, maximizing asset availability and uptime, and reducing total cost of ownership.

Metso to Handle Grinding Mill Maintenance at Two Large Codelco Plants

Metso has signed an 18-month services contract with Codelco's Chuquicamata mine for grinding mill maintenance, encompassing changeout of components for 33 ball mills currently operating in the AO and A1 plants at Chuquicamata. The work will involve changing mill pinion-gear assembly and repairs to mill shells. Metso said it plans to repair two mills per month and maintain continuous monitoring of the status of the equipment. The value of the contract was not disclosed.

The agreement, which covers gear disassembly, new gear assembly, pinion assembly, gear alignment (slow rotation) and mantle repair, was scheduled to take effect in April. The contract will create 30 new Metso services jobs in northern Chile.

Metso, which has a long history of involvement In the Chuquicamata **operations**-it supplied three large MP1250 cone crushers and an automatic control system to Chuquicamata in 2012, for example-also noted that its 750 employees in Chile have worked more than two years without a lost-time incident. The Association of Major Suppliers for **Mining** in Chile recognized Metso for its safety results in 2013.

FLSmidth Wins Mongolian **Copper** EPCM Contract

FLSmidth has received orders worth approximately $43 **million** from the Mongolian **company**, Mongolyn Alt (MAK) Group, to supply engineering, procurement and site construction services for the Tsagaan Suvarga **copper**-molybdenum concentrator project. This greenfield plant, with a capacity of 40,000 mt/d of **ore**, will be located in the central part of the Oyu Tolgol South Gobi porphyry **copper** belt in southeast Mongolia.

FLSmidth is currently supplying all of the main process technology for the project under a separate, previously awarded contract announced in 2011. MAK is the third largest **company** In Mongolia with diverse business activities, including **coal** and **gold mining operations**. The Tsagaan Suverga project will be the group's first **copper** concentrator. In February 2012, FLSmidth was awarded an order from MAK for supply of a greenfield cement plant.

Hitachi Shovels Pass 100K Operating Hours at Yanacocha

Hitachi recently announced that two of its EX5500-5 front shovels passed significant service-life milestones while working at the Yanacocha **gold** mine in Peru-each has racked up more than 100,000 operating hours. The occasion was marked by an onsite recognition event, pictured below.

Both EX5500-5 machines-the predecessor to Hitachi's current EX5600-6 model-were delivered 14 years ago and have been working at numerous pits in the 251-km^sup 2^ surface mine ever since. Both machines achieved the 100,000-hour goal within three weeks of each other.

According to the **company**, the systems are flexible, scalable and are not restricted by **mining** methods, commodities, time zones, language, currencies, units of measure, existing software, hardware and network infrastructure. **Mining** companies can start by focusing on areas that could generate immediate

benefit, including: * Lack of dynamic and optimized extraction sequencing. * Lack of optimized load in shovels and other transportation means. * Poor process performance (quality, recovery). * Costly decisions due to unreliable data (such as inventory, grade, geological structure). * Nonconformance to load-out plans. * Excess **energy** and water consumption. * High cost of inefficient transport scheduling and use. * Poor asset performance. * Maintenance and production conflicts. * Excess inventory due to an unreliable supply chain.

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