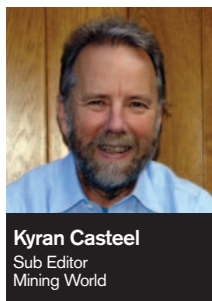




## New Strategies for Mine and Quarry Fleet Maintenance

TIME WAS WHEN MINE AND QUARRY PRODUCTION AND MAINTENANCE DEPARTMENTS MIGHT SOMETIMES BE AT LOGGERHEADS OVER MRO SCHEDULING. HOWEVER, TIMES HAVE BEEN A-CHANGING, REPORTS KYRAN CASTEEL, CONTRIBUTING EDITOR, MINING WORLD.



**Kyran Casteel**  
Sub Editor  
Mining World

Today's asset-intensive operating companies focus on teamwork to achieve sustainable production efficiency, with equipment management safety being a key part of overall strategy. Indeed, world class operators are likely to regard asset management as a means of gaining competitive advantage. Fleet operators are therefore continually seeking methods and technologies that can improve asset management. Likewise, equipment suppliers seek to enhance their strength in the marketplace. Not only are these companies delivering products that are easier and safer to maintain, they are also offering customers maintenance and repair contracts and staff training.

Production efficiency is typically measured as cost per ton, the balance between costs/hour and tons/hour. Analysis clearly shows that longer machine component life significantly influences overall operating

cost. As well as from the quality of the manufacturing process, longer life derives initially from OEMs using the most appropriate materials available. Their options are being increased, with wear performance being just one area where materials suppliers are raising standards. For instance, steel grades now being assessed by OEMs include Creusabro 8000 which has shown a 46% or better increase in wear part life during comparative tests on excavator buckets.

The fireman in Penny Lane likes a clean machine but for quarrymen and miners contaminant-free equipment is essential. Caterpillar has reportedly stated that MR costs relating to fuel systems, transmissions, hydraulics and final drives can account for up to 70% of machine operating costs, while some estimates put the proportion of component failures resulting from surface degradation caused by fluid contamination at 75%. Mine and quarry operators must help ensure longer component life by first selecting optimal fuel, lubricants, greases, coolants, hydraulic fluids etc, and thereafter using a clean fluids strategy to keep these free of contaminants.

Contamination control primarily involves practical building design to create a clean environment and good housekeeping – clean benches, clean tools and clean parts – but monitoring the performance and condition of key components and fluids in critical machines provides an important reality check that will also help operations managers to maximise equipment uptime – a primary factor in achieving target tons per hour. On-site fluid analysis is becoming increasingly popular. Other help is also being made available, such as an Oil Conditioning Unit and an app for Android smartphones providing searchable filter product data.

On-machine monitoring technology has been rendered significantly more useful by new communications, telemetry and web-based data management tools that enable near- or real-time, on-demand performance and condition monitoring. Since this new technology also enables product experts at OEM headquarters to advise and support on-site maintenance engineers, it seems likely to increase mine and quarry operators' already growing interest in outsourcing the maintenance of increasingly high capacity (equals more expensive downtime) and complex equipment to the suppliers.



As the UK's leading industrial services company, ERIKS has extensive experience of supplying and maintaining quarrying equipment, using techniques already mentioned, like fluid analysis, online condition monitoring and on machine monitoring technology, and ensuring it performs in the exceptionally harsh conditions with maximum reliability, minimum maintenance and downtime, and optimum energy-efficiency. ERIKS also has wide-ranging Health and Safety know-how, enabling the company to supply products – and offer advice – to ensure not only that your employees are safe but also that you are fully compliant with all relevant legislation. Whilst the operating environment of the quarrying industry is unique – and uniquely challenging – ERIKS' comprehensive product range from the world's leading suppliers, unique level of service and depth of expertise are more than up to the challenge.



## It's not just about the bearing

**TIMKEN**

GETTING THE RIGHT BEARING FOR THE APPLICATION IS, OF COURSE, CRUCIAL. BUT PROPER EDUCATION AND TRAINING TO GO WITH IT CAN MAKE ALL THE DIFFERENCE BETWEEN LONG, TROUBLE-FREE BEARING LIFE AND A SHORTER LIFE WITH COSTLY DOWNTIME. SO IF YOUR SUPPLIER ONLY SUPPLIES BEARINGS, YOU COULD BE MISSING OUT.



For specialist applications in demanding environments, a supplier with the capability to provide specialist bearing solutions is essential. Timken, for example, not only offers standard bearings which minimise the impact of debris in a given system, but can also provide Timken Debris Resistant Bearings. Specially developed for applications in industries such as quarrying, this solution can extend bearing life by up to three times in harsh environments where debris may be severe, or where there may only be a thin film of lubrication.

The company's standard bearing material minimises the impact of debris in an environment like the aggregate industry, but the fully-machined brass cage design of the Spherical Bearings for shaker screens provides even greater durability and cooler operation. New surface-finishing techniques on the roller and raceway surfaces also help to extend the bearing's operational life.

However, it's not only what goes into Timken bearings which enhances their performance, but what's behind them. Timken has provided a full product line

for the aggregate industry for over fifty years, so has gained extensive experience of the industry's requirements and how to meet them. This experience has enabled Timken to develop and prototype numerous products specifically for the industry.

Another valuable Timken initiative is its MDU. This is not a new type of bearing but a Mobile Demo Unit, which can bring training, advice and information directly to your site. The unit, with a Timken or ERIKS expert on board, can help you to understand how to make the most of your bearings for longer life, how to ensure more efficient operation, and how to carry out the most effective maintenance.

The MDU is stocked with over two hundred Timken products, including bearings, bearing isolators, maintenance tools, lubricants, condition monitoring solutions and much more. These can be inspected and handled, and any questions can be easily and knowledgeably answered by the Timken or ERIKS representative. Equipment such as bearing tester kits carried on the MDU can be used for hands-on practice,

and it is possible to mount and dismantle bearings carried on the unit, and to practice bearing maintenance skills.

In addition, the MDU contains a library of bearing animations and videos, which can be viewed on a flat-panel screen in the unit.

As the Timken MDU proves, extended bearing life and enhanced bearing performance are not always just about the bearing itself. There are other ways to get a better return on your bearing investment – and one of them could roll up to your site tomorrow.

