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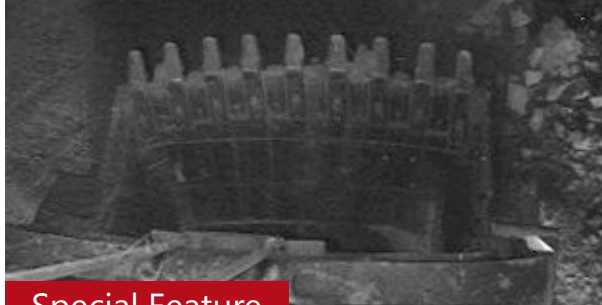
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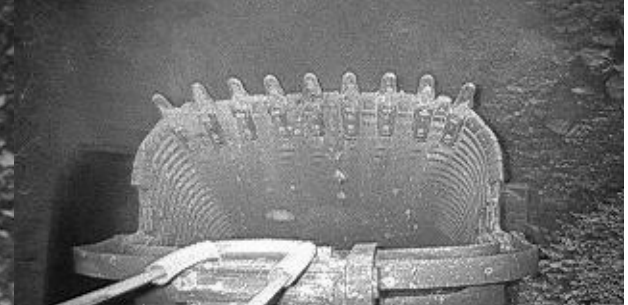
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Existing HID Bucket Light



New LED Bucket Light



Special Feature

## Better ToothMetrics™ performance with LED lighting upgrade

After several months of research and development, Motion Metrics has made the leap to the latest Light-Emitting Diode (LED) technology for their bucket lighting. The advanced industrial LED solution replaces the High-Intensity Discharge (HID) alternative.

Initial field trials have demonstrated a world of difference in the night-time performance of ToothMetrics™ systems. Over a period of a month, a system with the new LED bucket light installed saw an increase of over 200% in the response time, which means missing or broken teeth/adapters can be detected even quicker.

The improved lighting permits ToothMetrics™ to capture higher quality images at night, providing greater contrast between the teeth and the background, to improve the accuracy and response time of the system. From the two night bucket images above, it is clear that the new LED bucket light upgrade demonstrates a significant lighting improvement over the existing HID bucket light. Examining the specifications, it is apparent why the new LED bucket light is superior:

- 2 times brighter: Light intensity output rating of 6300 lumens vs. 3200 lumens
- Lasts 16 times longer: Lifetime rating of 50,000 hours vs. 3,000 hours
- Closer resemblance to sunlight (5500K): Output color temperature of 5000K vs. 4250K
- Better ingress protection: IP68 vs. IP65
- More rugged: Bullet-proof glass lens

Contact our sales team to find out how you can upgrade to the new LED bucket light.



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## Product News

### Warning Lights for RadarMetrics™ now available

New for 2011 is the addition of Warning Lights for RadarMetrics™. The optional warning lights extend the effectiveness of the RadarMetrics™ solution beyond just the shovel operator by installing a series of wide-angle, high-intensity amber LED warning lights around the perimeter of the shovel.

When nearby equipment or personnel enter the collision path of the shovel, the shovel operator is notified through the RadarMetrics™ user interface and a beeping sound produced by the system. With the additional warning lights, nearby equipment are also alerted by the wide-angle amber LED warning lights which flash with a distinct pattern.

The specifically engineered warning lights are able to cover a 180-degree horizontal angle to ensure maximum coverage. Industrial LEDs are used to maximize longevity and reduce energy consumption, while still providing exceptional performance.



RadarMetrics™ Warning Light

For more information visit:

[www.motionmetrics.com/products/radarmetrics](http://www.motionmetrics.com/products/radarmetrics)

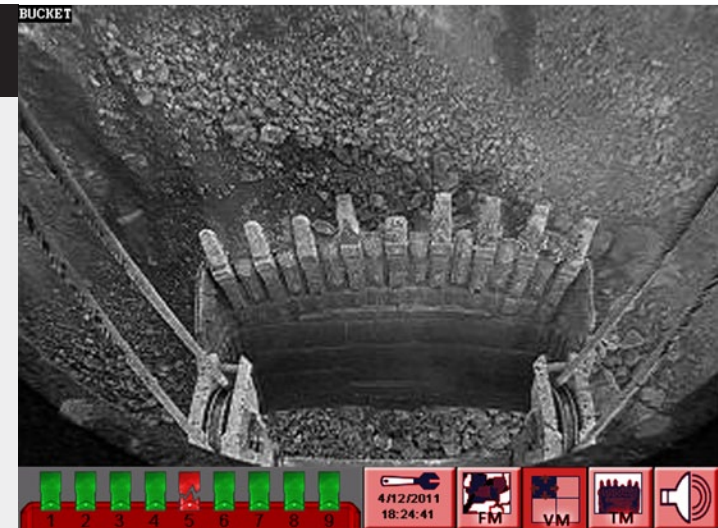
## Story

### ToothMetrics™ in Australia

In early May, Motion Metrics visited an Australian mine for a maintenance service trip. The Western Australian gold mine has ToothMetrics™ and FragMetrics™ installed on four of their shovels (three Bucyrus shovels and one Terex RH340 shovel).

During the maintenance trip, all four shovels were upgraded to the latest *"Precision Release"* of ToothMetrics™. A significant improvement in the response time and the accuracy of the system was immediately noticed by the mine technician. Reviewing the log data from the system over the past couple of months showed that the system had detected a number of missing shovel teeth.

Satisfied with the performance of the system, the mine is planning to install the WearMetrics™ tooth-wear monitoring system on their shovels. Since the mine spends millions of dollars on new shovel teeth each month, they will use WearMetrics™ to compare different makes and models, and to optimize their tooth change-outs.



The ToothMetrics™ system detects a missing tooth on a Bucyrus rope shovel in Western Australia.

## Recent Events

### Presenting RadarMetrics™ at Haulage and Loading 2011

Motion Metrics made a strong first impression at this year's Haulage and Loading Conference in Phoenix, Arizona, where the Product Manager for RadarMetrics™, Nima Nabavi, presented, "The Application of Intelligent Collision Avoidance for Mining Shovels".

The well received presentation focused on the patent pending collision avoidance technology developed by Motion Metrics that intelligently accounts for the shovel swing action when alerting the operator. The innovative solution is capable of detecting single or double truck loading patterns to reduce false warnings during normal loading procedures.



### EXPONOR 2011 and ARMINERA 2011

Motion Metrics was recently in Antofagasta, Chile, and Buenos Aires, Argentina, exhibiting at the EXPONOR CHILE 2011 and ARMINERA 2011 as part of the Canadian Pavilion.

As the largest mining exhibitions in Chile and Argentina, this was a good opportunity for Motion Metrics to connect with its well-established customer base in Chile and strengthen its presence in Argentina. At EXPONOR CHILE 2011, Motion Metrics' exclusive agent in Chile, TTM Chile ([www.ttmchile.cl](http://www.ttmchile.cl)), was also an exhibitor.



### Motion Metrics at CIM Montreal 2011

After a strong presence at CIM 2010 in Vancouver last year, Motion Metrics returned to this year's CIM 2011 Exhibition and Conference in the city of Montreal, Canada, where we displayed our latest innovations including the Warning Lights for RadarMetrics™ and the Arm Geometry System (AGS) for electric rope shovels.

In addition to exhibiting, Motion Metrics' Product Engineer, Matthew Baumann, also made two presentations, "Automated Shovel Tooth Wear Monitoring with Machine Vision" and "Application of Shovel Bucket Blast Fragmentation Analysis".



## Company Highlights



### More South American mines purchase systems

A BHP Billiton mine and an Anglo American mine in Chile have both decided to install Motion Metrics systems on the remainder of their shovel fleet. The mines were impressed with the systems they had purchased a year earlier and realized the value of this investment.

Following a successful system installation in an Argentinian Barrick mine, other Barrick mines in South America are catching on and have placed orders for ToothMetrics™ and FragMetrics™ systems.

### Motion Metrics in Australia

Motion Metrics' representatives will be in Sydney, Australia from September 4th to 16th, for the AIMEX 2011 Mining Exhibition, which occurs once every four years. Be sure to visit the Motion Metrics booth in the Canadian Pavilion.

While in the region, Motion Metrics welcomes opportunities for private meetings or mine visits for customers interested in learning more about our solutions. Please contact our sales department as soon as possible to arrange a meeting: [sales@motionmetrics.com](mailto:sales@motionmetrics.com)

For the latest news and updates visit: [www.motionmetrics.com](http://www.motionmetrics.com)

## Upcoming Events

Look for Motion Metrics at the following upcoming events.

### AIMEX 2011

Sept. 6-9, 2011

Booth #3920-04 (Canadian Pavilion)  
Sydney, Australia



### Extemin 2011

Sept. 14-18, 2011

Booth #522 (Canadian Pavilion)  
Arequipa, Peru



### Exposibram 2011

Sept. 26-29, 2011

Booth C25 & H12 (P&H MinePro)  
Belo Horizonte, Brazil



### Expomineria Mexico 2011

Oct. 26-29, 2011

Booth #911 (Canadian Pavilion)  
Acapulco, Mexico



## ToothMetrics™

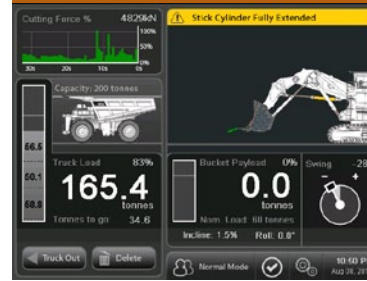
An automatic missing tooth/adaptor detection system



The ToothMetrics™ system prevents broken or missing teeth or adapters from reaching the crusher by continuously monitoring the shovel's dipper teeth/adapters while the shovel is in operation.

## LoadMetrics™

A dynamic arm geometry, digging force and payload monitoring system



The LoadMetrics™ system provides bucket-by-bucket payload monitoring from the shovel to increase operation efficiency by reducing over- and under-loaded trucks.

## WearMetrics™

A real-time tooth-wear monitoring system



The WearMetrics™ system monitors the status of each of the shovel's dipper teeth to allow mine engineers to determine when a change-out is required.

## Arm Geometry System

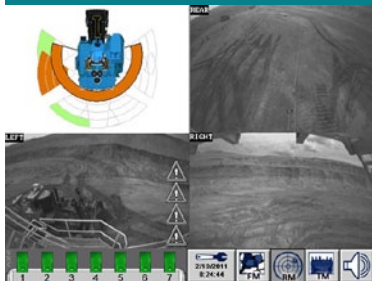
A dynamic shovel arm geometry and bucket positioning system



The AGS arm geometry system provides high-accuracy, real-time shovel bucket positioning so that operators know exactly where to dig.

## ViewMetrics™ & RadarMetrics™

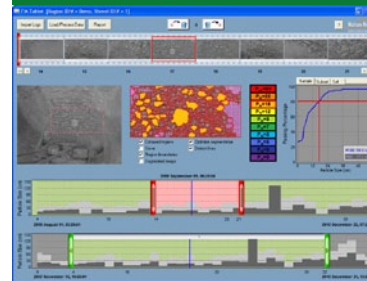
A radar and camera based collision avoidance system



The ViewMetrics™ and RadarMetrics™ system offers the most advanced proximity detection system for mining shovels by incorporating both camera and radar sensors, and accounting for the shovel swing action.

## FragMetrics™

A shovel bucket-based automatic rock fragmentation analysis system



The FragMetrics™ system provides rock fragmentation data straight from the dipper of the shovel to obtain blasting results before the material is broken down further from handling and processing.