



# CASE STUDY



## Application Background

|                            |                            |
|----------------------------|----------------------------|
| <b>Commodity:</b>          | Iron Ore/ Overburden       |
| <b>Digging Conditions:</b> | Hard/ Moderate             |
| <b>Machine:</b>            | Wheel Loader               |
| <b>Make &amp; Model:</b>   | Komatsu WA1200             |
| <b>Customer/Site:</b>      | Pilbara, Western Australia |
| <b>Installation Date:</b>  | June 2020                  |

## Location



## The Solution



**Titan 3330 WL  
Load Haul Optimisation**

## The Outcome



**Truck Average  
Payload Increase**



**Productivity  
Increase**

## Challenges

This study focuses on an Australian tier one miner based in the Pilbara operating a fleet of wheel loaders and trucks in iron ore and waste materials. The site's continuous improvement and engineering teams identified premature tire failures on their Komatsu WA1200 wheel loaders cost production and maintenance departments. The miner created a project charter to reduce general tire wear and early tire failures across the WA1200 fleet while maintaining or improving production rates of their assets. The site engineering team identified that bucket overloads while hoisting was the primary cause of premature tire failures. The site began investigating potential solutions, preferring an advanced technology that could add additional value while solving the problem at hand.

## The Solution

CR Digital's experienced field technicians worked with the Miner to install the Titan 3330™ WL for Load Haul Optimization system on the fleet of Komatsu WA1200 Wheel Loaders. Titan 3330™ is designed specifically to enable accurate bucket and truck loading. Real-time feedback on bucket payload allows for the operator to abort hoisting an overloaded bucket, reducing tire wear and premature failures. In addition, real-time truck payload feedback to the operator optimizes the load haul process, increasing fleet production rates.

Once the product was installed and commissioned, CR Digital rolled out the operator training on the intuitive Titan 3330™ WL system. The team also provided data reporting tools to the customer to observe the impact of the system.

## Titan 3330™ WL User Interface

*Operators can see remaining truck payload in real-time*

*Truck identification using RFID technology*



*Operators can see tonnes per bucket as they dig*

Figure 1 – Example of Titan interface used by excavator operators

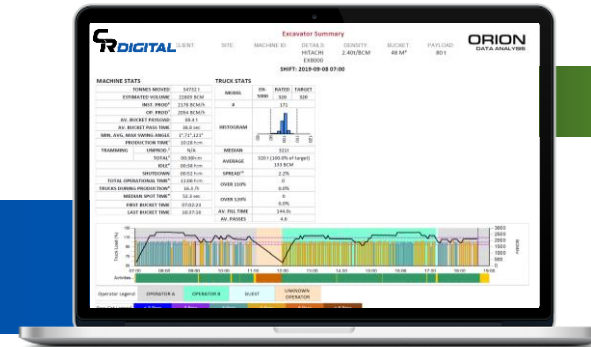
# CASE STUDY *(Continued)*

## The Impact

The CR Digital Titan 3330 WL™ Load Haul Optimization system delivered:

- 6.6% increase in production per hour
- 506,394 additional tonnes moved per machine per year

*With Titan 3330™ WL - operators could increase average truck payload while decreasing truck overloads – maximizing productivity.*



**ORION**

Figure 2 – Orion Data Analysis reporting system delivers machine and payload data to the customer.

## Operational Production Rate

Providing real-time bucket payload feedback and consequently decreasing bucket overload rates can dramatically increase the overall productivity of a wheel loader.

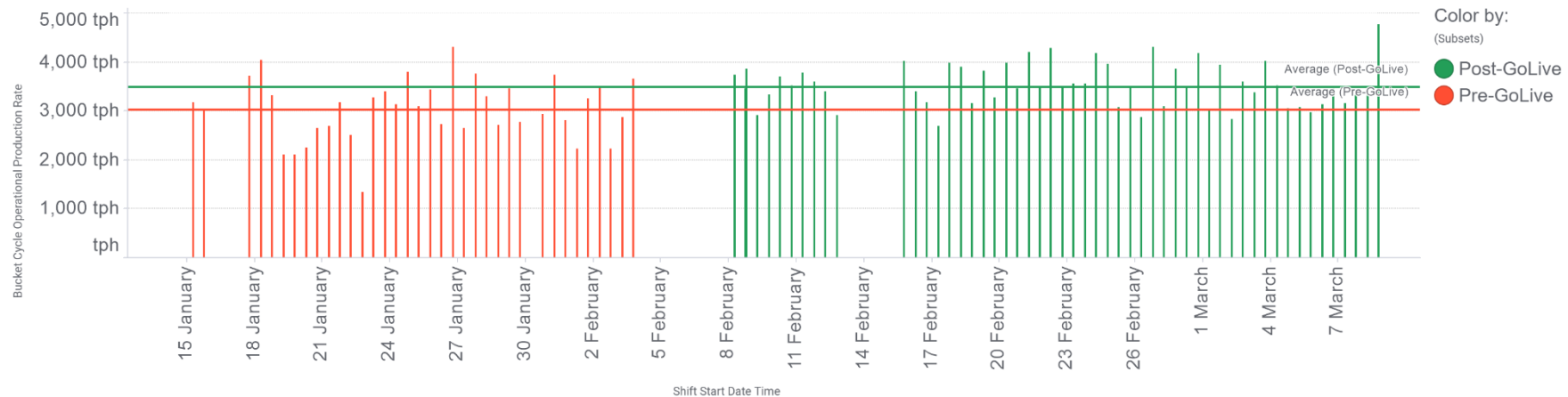


Figure 3 – Mean Bucket Cycle Operational Production per day sectioned into ‘Before’ and ‘After’ implementation of Titan 3330™ WL system.

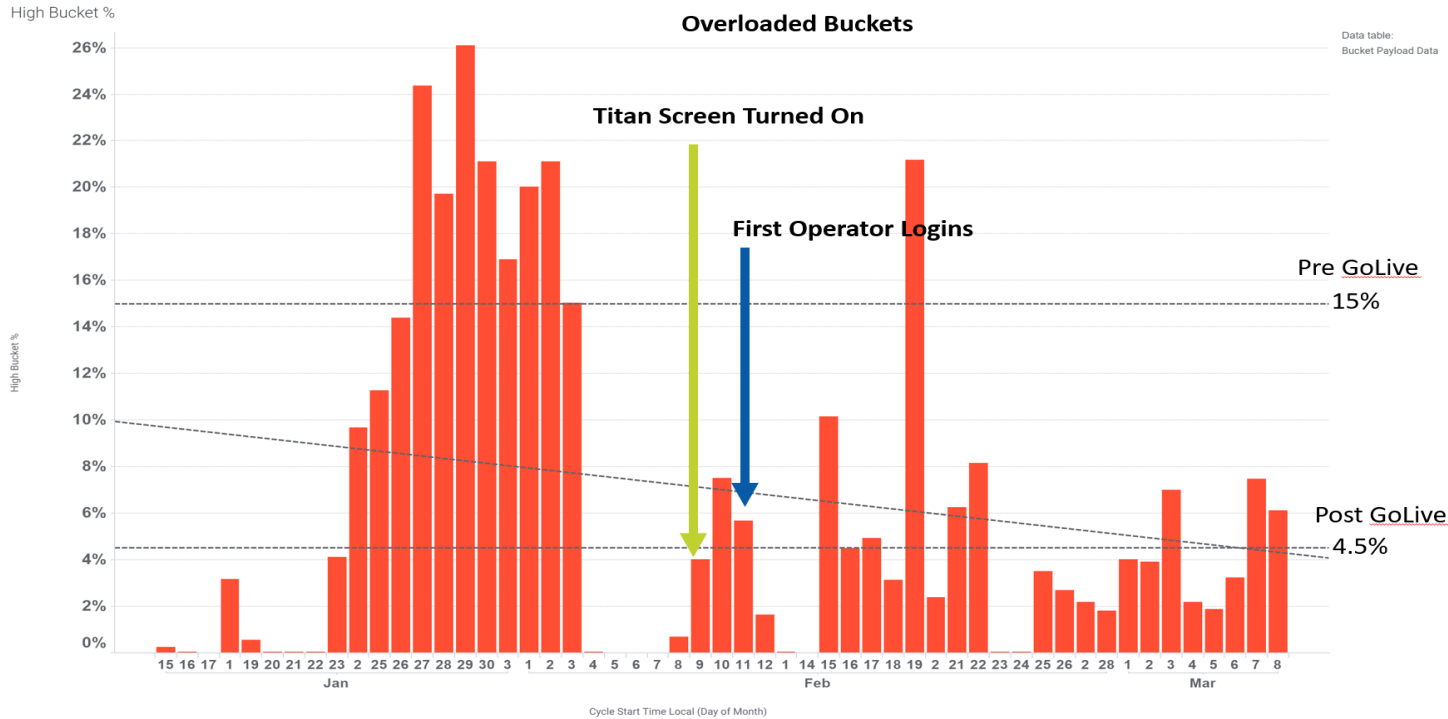
**Titan 3330™ Load Haul Optimization and Analysis and Improvement capability can improve your fleet’s performance today.**

# CASE STUDY *(Continued)*



Part of the CR Group

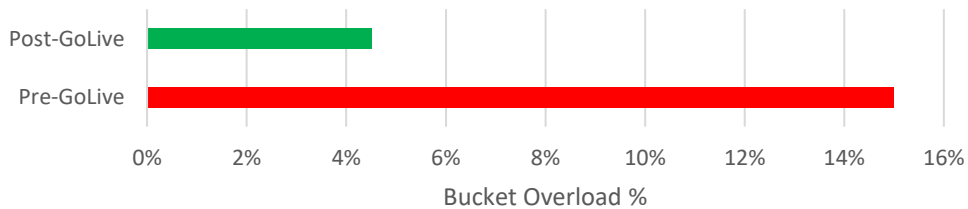
## High Bucket Payload % Trending



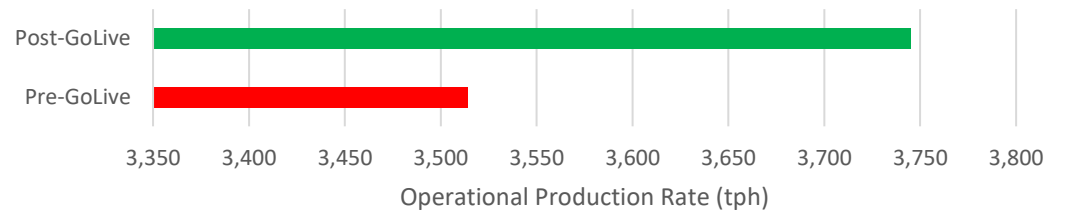
### Additional Benefits:

- ✓ 70% reduction in bucket overloads
- ✓ 14,700 bucket overloads eliminated per year
- ✓ 6.6% increase in operational productivity
- ✓ 14% reduction in tire damage
- ✓ 4.5% decrease in bucket payload spread

### Bucket Overload Rate



### Bucket Cycle Production Rate



**Titan 3330™ Load Haul Optimization Analysis and Improvement capability can improve your fleet's performance today.**