Holistic Asset MANAGEMENT

CASE STUDY

Komatsu 930E Maintenance Strategy Optimisation

AT A GLANCE

Challenges

- Uncertainty in the quality of the preventive maintenance strategy (particularly associated with on-condition tasks and planned component changeouts)
- Unknown maintenance efficiency of the maintenance execution team
- No alignment of current maintenance strategy to FMECA

SCHEDULE YOUR MEETING NOW

"HolisticAM has been pivotal in transforming how we undertake maintenance on our assets. Their product knowledge, professionalism and their site experience sets them apart"

Engineering Manager

THE ADDED VALUE

HolisticAM created value for the mining company by:

Value One

Each trucks available time had increased by 112 hours over 6 months post change implementation

Value Two

Truck availability increased and unplanned maintenance decreased. MTBF > 90hr, achieved consistently month after month.

Value Three

23% reduction in MTTR indicating a significant maintenance efficiency increase

Holistic Asset MANAGEMENT

PROJECT OVERVIEW

The Komatsu 930E Electric Drive Haul Truck has been has been used by the client to remove overburden across multiple open cut mines in Australia.

The client had identified that their 930E fleet had not achieved their forecast availability with numerous major component failures increasing the burden on maintenance teams. Holistic Asset Management (HolisticAM) was engaged by the mining company to undertake a holistic review their fleet of Komatsu 930E Electric Drive Trucks from a maintenance perspective.

The objective of this project was to understand key drivers for unavailability, identify recommendations and assist with the implementation by working closely with site and corporate key stakeholders.

The project utilised a hybrid onsite-offsite execution approach and was delivered on time and within budget. The HolisticAM team remained engaged post strategy implementation to evaluate it's effectiveness.

THE CHALLENGE

Leveraging our OEM and site-based experience we understand the challenges that mining companies face.

The client had a FMECA based maintenance strategy for the truck, however was experiencing significant unplanned failures. During planned maintenance (PM) services defects were often detected when close to failure resulting in significant maintenance over runs. Over runs combined with unplanned failures resulted in a significant maintenance burden on the maintenance teams. This posed additional challenges including:

- Uncertainty in the quality of the preventive maintenance strategy (particularly associated with on-condition tasks and planned component changeouts)
- Unknown maintenance efficiency of the maintenance execution team

The client had also indicated that the current tactics had diverted from the FMECA.

Holistic Asset MANAGEMENT

THE SOLUTIONS

The client chose HolisticAM based on their OEM, condition-monitoring expertise, on-site experience and proven track of delivering results in the mining industry.

As with all projects executed by HolisticAM, our methodical approach includes identifying the current state, identify and review opportunities for improvement and presenting these opportunities to the client for consideration.

HolisticAM worked closely with the client's engineering, planning and maintenance execution team to undertake the following reliability engineering tasks:

- Downtime Data Analysis to determine systems, subsystems and maintainable items that contributed to unplanned maintenance on the trucks
- Life Data Analysis (LDA) / Weibull was undertaken to determine the Failure Characteristics, Mean Time Between Failure (MTBF) and reliability.
- Review of service day maintenance execution across all the maintenance crews
- Review of Mean Time to Repair (MTTR) to identify maintenance efficiency
- Identification of truck upgrades released by the OEM and implemented by other sites to reduce unplanned failures and improve component reliability
- Developing proposals using Net Present Value methodology to justify the implementation of machine upgrades with a focus to reduce total cost of ownership

THE RESULTS

Key deliverables included:

- Updated FMECA-based maintenance strategy
- Revised service sheets
- Improvements on PM service-day maintenance execution
- Recommendations to reduce MTTR
- Truck upgrade/improvement documentation detailing priority and value add to the business

.

Holistic Asset
MANAGEMENT

THE ADDED VALUE

HolisticAM was able to create value by

- Over the next 6 months each trucks available time had increase by 112 hours.
- Increase in fleet availability and MTBF > 90 hours consistently
- Decrease in MTTR by decreasing time to identify, acknowledge, repair and verify.
- FMECA-based maintenance strategy with tasks focusing on preventive maintenance to ensure machine issues are detected in a proactive manner

Who are we?

Holistic Asset Management is a leading provider of advanced reliability engineering technology and services to the asset intensive industries. We work with our customers to develop tailored solutions that meet the needs of their individual operations and help them realize significant savings in their maintenance costs.

.

We are proud of the reputation we have earned as a reliable and advanced engineering services provider to the mining industry. Our commitment to our customers is to provide the most reliable and advanced engineering solutions that will help them improve their reliability management systems and ultimately reduce their operational costs.

Unlock the full potential of your assets with our services. Contact us today to schedule a consultation and discover the difference we can make.

www.HolisticAM.com.au