All thoughts must be distilled into action and action that brings results.

MOVING UP A GEAR

Shell Albian Sands is among the largest developers of the Canadian Oil Sands, transporting surface-mined oil sand in mega Caterpillar trucks. They recently launched the Mobile Maintenance Excellence Initiative (MMEI) in partnership with Celerant Consulting, Caterpillar and Finning. The objective? An ambitious double-digit increase in truck availability.

'We didn't get bogged down in conducting a prolonged analysis. We got right down to business.'

About 2 tons of oil sand, a blend of clay, sand, water and bitumen, are required to produce a single barrel of oil.

Rugged conditions tax heavy vehicles to breaking point, but Oil Sands operators can't afford excuses.

'Operating costs in the Oil Sands are inherently high,' says Thomas Zengerly, Shell Canada's VP for Heavy Oil Operations. 'So you can't be a high cost competitor, in a high cost sector, and expect success.'

Keeping the trucks moving

At the Muskeg River Mine in Alberta, giant shovels load surface-mined oil sand onto the world's largest trucks, Caterpillar 797Bs, for transportation to bitumen extraction facilities. This extremely heavy crude is then solvent diluted and transported via pipeline to be upgraded and refined into a wide range of synthetic crude oils. The shovel-and-truck operation runs 24/7. 365 days a year. So high truck availability is an absolute imperative to achieving production that's at or near the mine's design capacity of 155,000 barrels per day.

'When I arrived in mid-2008, I was surprised to see our truck fleet availability numbers were benchmarking down in the 4th quartile,' recalls John Rhind, General Manager of Shell Albian Sands.

To drive it up, Zengerly and Rhind launched MMEI. 'As the fleet at the mine grew, we were challenged to sustain truck availability at a rate that met expectations,' recalls Larry Gouthro, Finning's Regional General Manager for the Oil Sands. 'We supply the trucks and the mechanics, so Shell Albian's management saw us as part of the solution and invited both us and Caterpillar to participate in MMEI. Our companies devoted substantial resources to the project. We were there from the start, working in the MMEI team to define the right crew structure, the right supervisory structure, and the right number of people to overcome our truck maintenance backlog.'

The other team member was Celerant Consulting.

'We'd had good previous experience with Celerant' says Rhind. 'Bringing them to Albian Sands sent a message that we were serious about increasing truck availability. We were making this investment and we expected to see results.'

Getting a clear view of the road ahead

Celerant's analysis of the situation immediately identified several root causes for low truck availability, including:

- Urgent repairs to broken equipment, at the expense of preventive activities, perpetuating low equipment availability
- A weak planning process to ensure completion of preventive maintenance (PMs)
- A lack of active management on the ground

'Trucks working essentially out in the wild, in extreme temperatures, climbing steep grades and travelling unpaved surfaces, are going to break down. That's a given,' observes Mike Eidet, Team Lead with front-line responsibility for maintenance and repair of heavy equipment. 'But we had a fire fighting mentality. We were doing everything we could to get trucks repaired and out working in the mine as fast as possible. Our mechanics were so focused on urgent repairs, PMs weren't getting done. That led to even more trucks needing repairs. It was a losing battle.'

Moving up a gear

Celerant's core recommendations were to:

- Define a clear Preventive Maintenance Strategy, dedicating 20% of mechanics to PMs, regardless of the demand for truck repairs
- Design a more robust planning process
- Implement a management system (MCRS®) to ensure that people had the right data to make the right decisions, based on their role in the organisation
- Implement 'Short Interval Controls' to ensure people knew what was happening, what they should do, where the issues were and how they were performing against the plan and using white boards to keep everyone informed and involved
- Implement more active management behaviours and provide intensive on-the-ground coaching to supervisory staff.

'The goal was aggressive' says Andy Carter, Manager of the Muskeg River Mine and immediate sponsor of the Mobile Maintenance Excellence Initiative. 'On a fleet our size, increasing truck availability from the low 70's to the low 80's would allow us to move about a million more tons of material every month - with virtually no additional costs. I was pleasantly surprised how quickly we achieved that step change in performance.'

A Closework® Partnership

MMEI is a clear example of the consulting approach that Celerant call Closework®. Celerant held weekly meetings with all the MMEI members to:

- Shape the improvement initiative
- Define and document the improved processes and the respective roles and responsibilities
- Review project progress and assign new action items to remove barriers and move things forward.

'We didn't get bogged down in conducting a prolonged analysis,' says Zengerly. 'We got right down to business - and Celerant gave us very good implementation support on the ground.'

Celerant consultants immersed themselves in the Maintenance operations, working side by side with teams of mechanics and providing real time coaching to supervisors. The coaching helped supervisors secure a more visible, involved presence on the shop floor, engaging with the mechanics and tracking data to ensure a smooth execution of the planned and unplanned maintenance tasks.

'Our supervisors typically have a strong technical background, but not necessarily a lot of experience being leaders,' notes Eidet. 'Celerant coached us to spend at least half our time out on the floor. We learned how to interact more effectively with the mechanics. Now we put our heads together as we work through a shift and at shift changes, so we can make smarter decisions. Instead of rushing through a PM and putting a truck back into service with a broken headlight, only to have it come back in for a headlight repair during the night shift, we fix it right then. We try to make the most of each time a truck is in our bays. We're clearer now on what matters, and we're very good at getting it done.'

Celerant also worked with the MMEI team using Celerant's proprietary MCRS® to help the team customise its management system. Today that new MCRS® drives timely, coordinated decision making and ensures that people at each level of authority have access to critical data and the power to influence the results for which they're accountable.

'We gave people systems that eliminated the chaos we had experienced all too often before,' says Linus Nurkowski, Manager of Execution at the mine. 'And we listened to the people closest to the work. 90% of the time they're the ones who have the answers you need. MMEI was successful largely because it gave our people on the floor more of a voice.' ■

AGGRESSIVE TARGETS IMPRESSIVE RESULTS

- Truck availability increases to 83% and sustains at that level, dramatically improving the mine's production potential
- Operating costs are trimmed by more than $30 million
- Mean Time between truck stoppages increases from 42 to 72 hours
- Preventive Maintenance completion rate improves from 52% to 100%