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A STRUCTURED CONDITION MONITORING PROGRAM FOR CANE RAILWAY LOCOMOTIVES

By

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BUNDABERG Sugar Ltd has 28 active locomotives operating in the Bundaberg region over a network of narrow gauge railway. The purpose of these assets is to provide efficient, safe and effective means of transport of cane to the three regional mills. Reliability of these physical assets has a direct effect on the continuity of supply of cane to the mills. Bundaberg Sugar Ltd has embarked on a program of predictive maintenance condition monitoring) on locomotives with the aim of improving locomotive reliability and availability. A program has been structured with the aid of a computerised maintenance management system (CMMS) such that scheduling of work and tracking of effort and test results can be achieved.

Condition monitoring disciplines employed for locomotives are oil analysis on drive and reversing boxes and ultrasonic flaw detection on axles, jackshafts and crank pins.

The CMMS acts as a central repository of information and is the hub operation of the program. Scheduling of inspections, historical inspection results and trending of condition parameters are undertaken using the CMMS, which is networked throughout all Bundaberg Sugar Ltd sites.

While still in its infancy, this program has already seen benefits in detection and replacement of four locomotive axles in the 1999 season due to fatigue cracking. Benefits of the oil analysis program have been slower to be realised, however, as the number of samples increases over time, a greater understanding of wear rates and contamination factors should see greater reliability in early detection of potential problems.