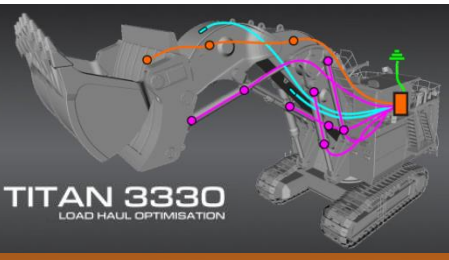
clear thinking
better solutions



CASE STUDY

Double Benching Operator Technique Issues

CHALLENGE

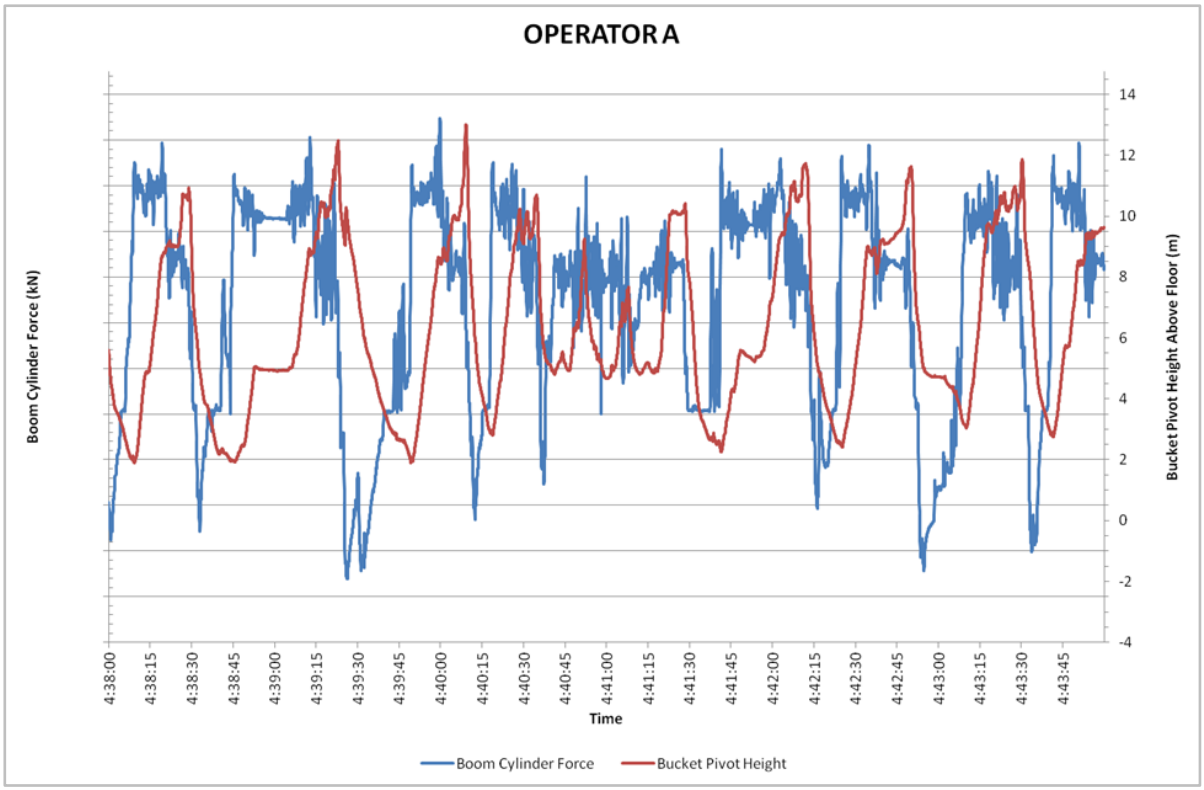
It was identified in a shift that there were extended periods of high boom fatigue duty rate which started and stopped very rapidly. These periods were found to coincide with the change in operator during the shift and that it was specific to one operator.

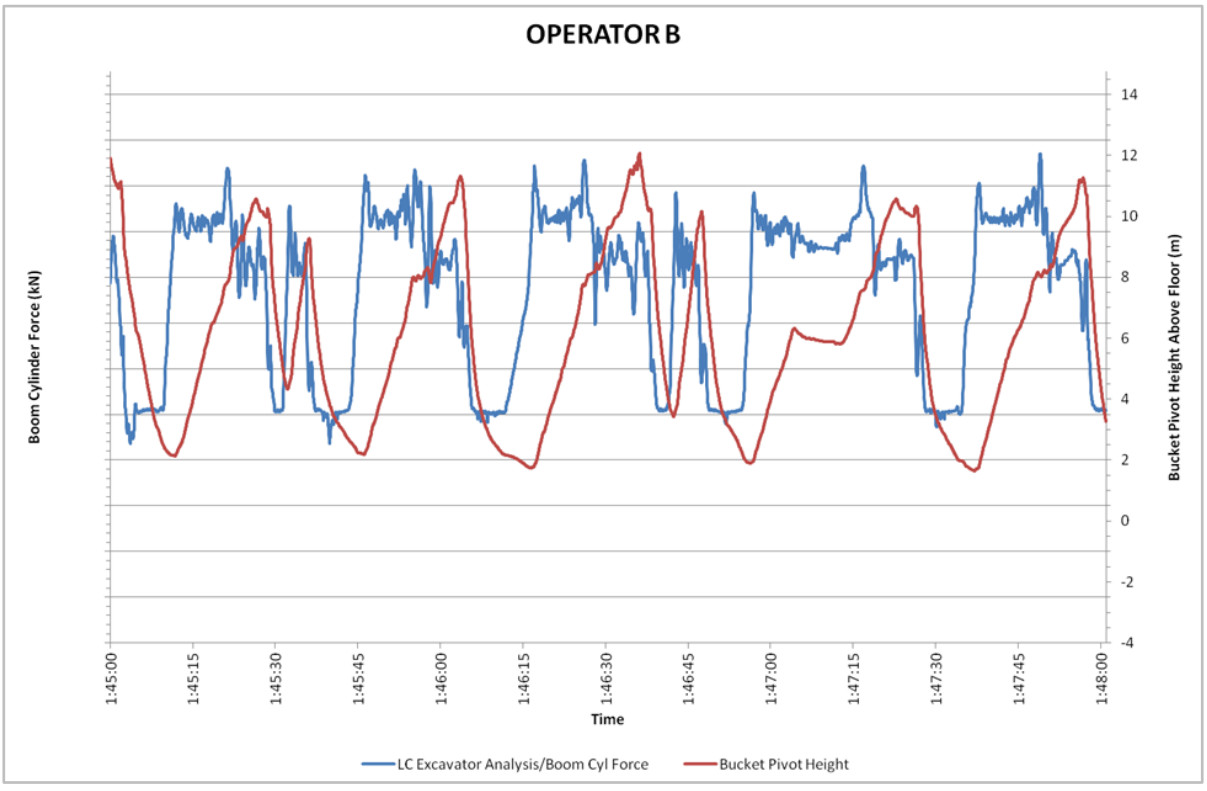
Figure 1 - Daily status report showing sudden and considerable changes in fatigue duty rate

INVESTIGATION

LC gained access to the data that the Titan system records at 20Hz to determine what the machine was doing at the time. It was found that throughout the shift the machine was double benching and that the way Operator A was performing this was causing their fatigue rate to double.

The following charts show brief periods of the measured boom cylinder force plotted against the height of the bucket pin above the floor for both operators A and B. Comparing the two it is easy to see that Operator A does something to make the boom cylinder force to go substantially negative (-600kN) indicating a high retraction force. It is this increase in boom cylinder force range that results in a doubling of fatigue duty rate. It was identified in a shift that there were extended periods of high boom fatigue duty rate which started and stopped very rapidly. These periods were found to coincide with the change in operator during the shift and that it was specific to one operator.





RESOLUTION

Site discussed this information with the operator, and quickly identified what the operator was doing to achieve the high retraction force. The operator was retrained, and now conducts the same operation with less than half the fatigue damage and unchanged production rates.