MINING ART

Client: Severstal, Karelsky Okatysh

Severstal
Achieve More Together

Project

Mining equipment efficiency improvement through truck spotting time reduction

Business Need

Analysis of 2016-2017 data showed that average truck spotting time at the loading location was more than 80 seconds. Best practices allow to achieve 60 seconds.

Solution

▶ Root cause analysis for high spotting times -

• Shovel operators do not always prepare the next bucket for loading after the finish of the previous load doing minor face preparation or hanging without a delay code;

• Truck operators do not pre-spot while in queue;

• Equipment operators do not understand spotting calculation and how they can affect it;

• There was no KPI for spotting at the mine reporting tools with a link to the individual performance.

▶ **Fleet Management system enhancements -**

• There was a new functionality developed to inform truck and shovel operators about the actual spotting time after the start of each load;

• Equipment operators got a new function to interact during the spotting process and show the cases when shovel doesn't prepare the bucket or truck doesn't start spotting.

▶ Mining Art and the mine implemented a complex model to assess individual efficiency that includes spotting KPI for both truck and shovel operators. A new model is being used to calculate the bonus part of the salary. This improved people motivation for better spotting times and FMS usage.

Results

During the 2nd and 3rd quarters of 2019 spotting time for all truck types lowered to 40 seconds. At the same time there was no increase in loading time that proved the real improvement of spotting time.

Spotting time, secs by quarter

	88	84	84	60	62	58	52	40	39
III	IV	I	II	III	IV	I	II	III
2017		2018				2019		
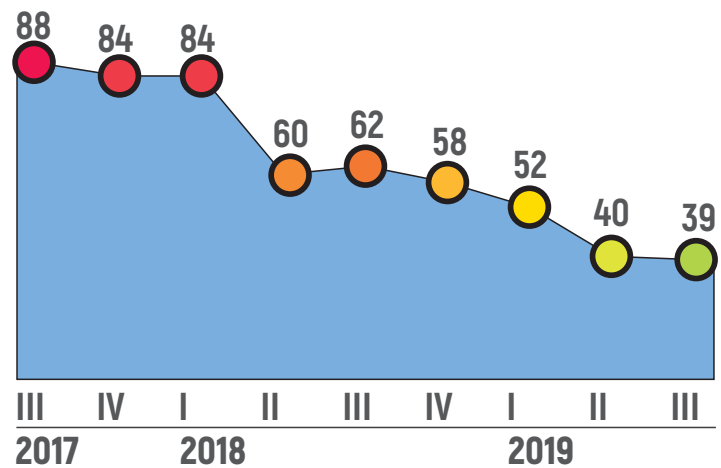
Zakhar Pavlov,

Chief Technical Officer at Severstal, Karelsky Okatysh

– Mining Art specialists focused our attention on the potential spotting time improvement that it's the part of both truck and shovel production cycle.

Together we completed the project with the results better than the initial target that significantly increased mining equipment efficiency.

100
95
75
25
5
0