

LKAB Haulage Strategy Simulation

The LKAB Malmberget iron ore mine is located in Gällivare, Sweden, appx. 100 km north of the arctic circle. Production commenced in the 17th century and today per annum ore production is 13 Mton.

The mine consists of about 12 separate ore bodies, which are mined separately. Ore is generally hauled by LHD's to the nearest pass, and then transported by ore trucks to a central crushing and hoisting unit.

As the mining proceeds, production will go deeper. One of many consequences of a deepened mine is that some ore lenses become longer and thinner. Therefore, the mining method will partially change from transverse to longitudinal sub-level caving.

Ensuring balanced, high capacity haulage of ore from draw points to ore passes is a great logistic challenge as the number of available draw points declines and the average haulage distance increases.

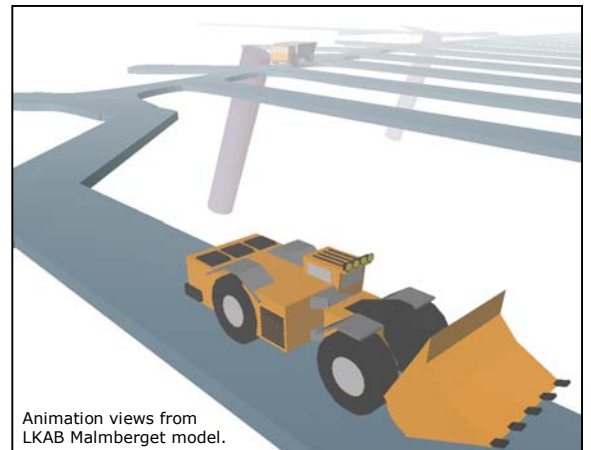
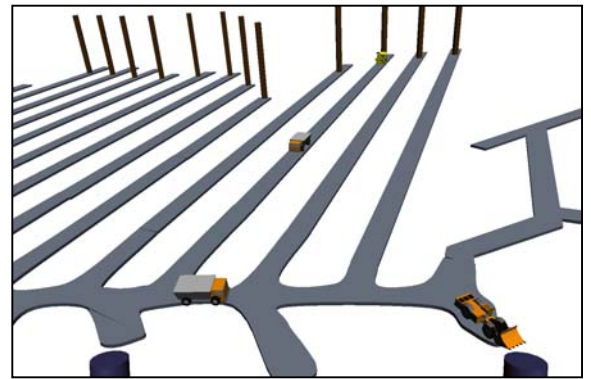
To meet the challenges, LKAB and Önnertlov is developing a simulation model, aiming to predict production output for a variety of haulage scenarios. The overall objective is to, in an early stage

- optimize the mix of haulage methods in use,
- estimate haulage investment needs and
- conduct systems sensitivity analysis

User interfaces are developed and customized by Önnertlov for LKAB's specific needs. The simulation model is AutoMod based. For easy validation and increased understanding purposes, the model is constructed with full 3D- animation.

Project conducted: 2001/02
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Animation views from LKAB Malmberget model.