

WX11 outperformed competing 14-tonne LHD in production

Project challenge:

Komatsu partnered with a gold mining operation in Canada to understand whether a smaller, more maneuverable LHD could match the productivity of a larger 14-tonne class machine in a face-to-remuck application. The objective was to perform a competitive time study by controlling performance variables that reflect real-world loading and tramming productivity. The study benchmarked the Komatsu WX11 11-tonne LHD and a competitor 14-tonne LHD under similar operating conditions to quantify cycle-time performance, production efficiency and practical operating advantages.

The approach

Benchmark the WX11 LHD performance against a larger size-class LHD under similar operating conditions.

- **Measured KPIs:** Cycle times and payload capacity.
- **Machine comparison:** Competitor OEM (14 t, 6.6 m³ bucket) vs. Komatsu WX11 (11 t, 5 m³ bucket) with standard OEM configurations



Komatsu WX11 underground LHD

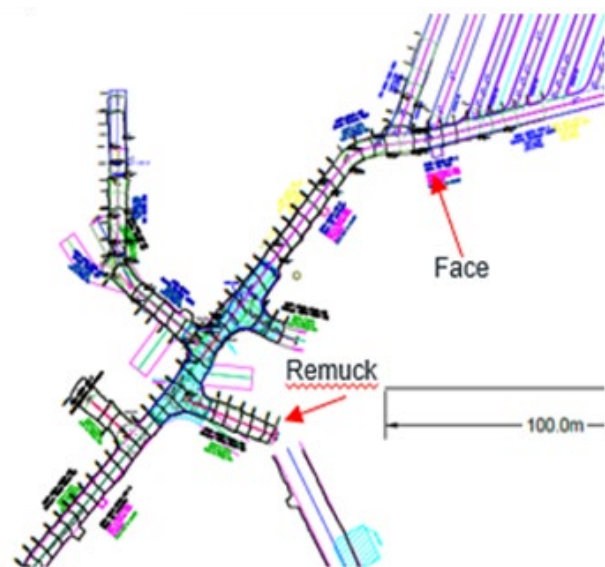
Comparison methodology

Cycle times:

- Selected the 10 fastest cycles from each LHD to establish a comparative baseline.
- Computed normalized average cycle time using those top-performing cycles.
- Applied the normalized average to total trip count to quantify comparative productivity.

Haul distance: Used a normalized distance of 130 m from face to remuck.

Material moved: Both machines hauled approximately 200 m³ of blasted material.



Results are based on a limited field evaluation conducted at a single underground mining operation under specific site conditions. Actual machine performance, productivity, fuel consumption, ventilation requirements and operating costs will vary depending on operator practices, application, mine design, material characteristics, maintenance practices and operating conditions. Comparisons are based on observations made during the study period using standard machine configurations and the methodology described herein.

The result

Time study	Komatsu WX11 11t LHD	14t competitor LHD
Blast dimensions	4.4 m (H) x 4.6 m (W) x 4.2 m (L)	4.4 m (H) x 4.6 m (W) x 4.2 m (L)
Bucket size	5 m ³ (6.5 yd ³)	6.6 m ³ (8.6 yd ³)
Material moved	approx. 200 m ³ (approx. 424 tonnes)	approx. 200 m ³ (approx. 424 tonnes)
*Total cycle distance (normalized)	260 m	260 m
Total time to clear blast	2h 40min (40 buckets)	2h 49min (31 buckets)
	9 minutes (5%) faster	

Key findings and value proposition

Despite needing more trips from face to remuck, the WX11 cleared the blasted round faster than the larger comparable machine - even with 3 tonnes less nominal capacity and a 1.6 m³ smaller bucket.

The WX11 completed the blast in 2h 40min versus 2h 49min for the 14-tonne competitor, a 9-minute (5%) productivity advantage. The result highlights the real-world benefit of the WX11's increased maneuverability paired with faster loading and tramming times.



Ventilation and production advantages support lower total operating cost.

Additional advantages of utilizing a smaller size class machine:

- **Reduced up-front Capex** compared with larger size-class equipment.
- **Lower operating costs** through less fuel burn and smaller ventilation demand.
- **Lower engine emissions** and reduced mine ventilation burden.

WX11's significantly lower ventilation demand provides a major operational advantage:

- Up to **48% less airflow demand** versus the competitor's higher CFM ventilation rate, based on CANMET-calculated requirements.

Summary

The WX11 demonstrated that productivity is not defined by rated payload capacity alone. In this field study, a smaller and more maneuverable Komatsu LHD moved the same material faster than a larger comparable machine. For operations balancing production, cost, emissions and ventilation constraints, the WX11 offers a compelling combination of performance and efficiency.