

# Save Fuel Costs: Underground LHD Simulator

Making simulators part of your overall training program affords many cost savings opportunities for your organization. One example is fuel consumption savings. When an organization uses a simulator, it avoids burning fuel.

## Typical Work Application Descriptions

In order to calculate fuel use, typical Underground Load-Haul-Dump work applications must be taken into consideration. Caterpillar classifies Underground Load-Haul-Dump work applications into three categories.

*Low:* Dig and carry operation from stockpiles to ground level transfer station. Low density, free flowing ore and waste. Excellent draw point floor surfaces. Short haul distances: 25-100 m (80-330 feet). Level roads with good surface conditions.

*Medium.* Intermittent development/production loading into trucks/transfer station. Good digging with well shot, low to medium density ore and waste. Average draw point floor surfaces. Medium haul distances: 100-200 m (330-660 feet). Poor road surfaces with slightly adverse grades.

*High.* Continuous production loading of trucks at or near maximum load height. Difficult digging. Loading haul trucks. Rough draw point surfaces. Long haul distances: 200-300 m (660-990 feet). Poor haul roads with adverse grades.

	Low		Medium		High	
Load Factor*	20%-40%		40%-60%		60%-80%	
Fuel Consumption	Gallons	Liters	Gallons	Liters	Gallons	Liters
	6.0-7.0	22.7-26.4	7.0-9.0	26.4-34.0	9.0-12.0	34.0-45.4

## Fuel Avoidance Savings (Formula: Hourly consumption x Local Unit Prices of Fuel = Hourly Fuel Cost)

If you use simulator training one week a month (40 hours), you will avoid using fuel as follows:

	240 to 280 Gallons \$3.85**	908.0 to 1,056.0 Liters \$1.02**
Total Savings	\$924.00 to \$1,078.00 (1 week) \$11,088.00 to \$12,936.00 (12 weeks)	\$926.16 to \$1,077.12 (1 week) \$11,113.92 to \$12,925.44 (12 weeks)

*Note:* All estimates based on a low engine load factor.

\*Average engine load factor based on application description for each range.

\*\*Cost of fuel will fluctuate with market and by country.

How Can You Benefit? [learn@catsimulators.com](mailto:learn@catsimulators.com)

**CAT<sup>®</sup> SIMULATORS**



When using this information, keep in mind the many variables which can affect fuel consumption. Two operators of different temperament or attitude operating identical machines side by side in the same material can have as much as 10%-12% difference in their consumption rates. However, the ranges shown should be applicable across a wide spectrum of conditions. Your Cat® Dealer representative can help select the most reasonable estimate for your specific situation. Keep in mind also that a fuel consumption study measured over a short period of operation may give higher fuel consumption than shown here. This information was figured for “normal” inefficiencies in the working cycle and will more closely relate to “normal” day to day operation.

