

Save Fuel Costs: Large Wheel Loader 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 large wheel loader work applications must be taken into consideration. Caterpillar classifies large wheel loader work applications into three categories.

Low. Intermittent aggregate truck loading from stockpile, hopper charging or load and carry on firm, smooth surfaces for short distances with minimal grades. Free flowing, low density materials. Light utility, industrial and construction applications. Light snowplowing. Most logging applications where there is considerable idling.

Medium. Continuous truck loading from stockpile and hopper charging. Loading from bank or load and carry on normal surfaces with low to medium rolling resistance and slight adverse grades. Low to medium density materials in properly sized bucket. Assumes normal travel distances associated with high productivity stockpile load-out and batch plant applications.

High. Loading shot rock (large loaders) from a face. Steady loading from very tight banks. Continuous work on rough or very soft surfaces with high rolling resistance. Load and carry in hard digging material with longer travel distances on poor surfaces with adverse grades. Handling high density materials with counterweighted machine.

	Low		Medium		High	
Load Factor*	35%-50%		50%-65%		65%-80%	
Fuel Consumption	Gallons	Liters	Gallons	Liters	Gallons	Liters
	15.0-17.5	58.0-66.0	22.0-24.0	83.0-91.0	30.5-33.0	116.0-125.0

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:

	600 to 700 Gallons \$3.85**	220.0 to 300.0 Liters \$1.02**
Total Savings	\$2,310.00 to \$2,695.00 (1 week) \$27,720.00 to \$32,340.00 (12 weeks)	\$2,366.40 to \$2,692.80 (1 week) \$28,396.80 to \$32,313.60 (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

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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.



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