

# Case Study

Marubeni

**KOMATSU**

## Hawk Plant investigate Hybrid power as a way of reducing fuel costs and emissions.

### Overview

Find out what Hawk learnt from spending a week with a Komatsu hybrid excavator.

*“Every now and then I’d have a quick check on the digital display to see how it was doing - it definitely used much less fuel,”*



**Hawk Plant Hire is one of the largest independent plant hire companies in the UK with over 40 years experience supplying equipment.**

With a comprehensive fleet of over 2000 items including excavators, articulated dump trucks, dozers, compaction equipment, loading shovels, backhoe loaders, bowsers, mini excavators and dumpers, they have the equipment to satisfy numerous industries.

However, in today's competitive marketplace, simply offering a broad range of products isn't necessarily a differentiator, so Hawk focus on being able to offer their customers the most technologically advanced and reliable equipment from the leading manufacturers. And it was this business ethos, which prompted an enquiry about Komatsu's range of Hybrid excavators.

## Demo machine on trial for a week

One specific aspect of Hawk's enquiry focused on how the Hybrid machines would compare to the conventional machines currently in use on the numerous quarrying sites Hawk are contracted to. After discussing their requirements with Ross Smith, Marubeni-Komatsu's Technology Products Manager, it was agreed that the best test of the new machine would be a week-long trial. *"When our customers are considering a new type of machine for their fleet, giving them one to demo for a week provides the opportunity for them to really get to grips with the machine and explore its innovations and benefits"*



**Existing PC360 Excavator provided baseline fuel figures**

explained Ross. *"In the case of Komatsu's Hybrid excavators, its primarily about the fuel savings which can be had, although the amount of fuel saving varies depending on what the machine is used for – another reason why the machine demo is invaluable."*

Mike Brazendale, Hawk's National Operations Manager – Crushing picks up the story. *"We already had a Komatsu PC360 in use at the Welsh Slate quarry site in Bethesda, North Wales and were interested to see how the hybrid equivalent would compare, both in terms of fuel usage and productivity. I talked to Ross about it and he agreed a week-long demo would be worthwhile, especially as the machine would be primarily used for loading material into the crushers and this type of work played to the strengths of the hybrid system."*

## Hybrid machine excels during test

So it was that Marubeni-Komatsu delivered their demo HB365 hybrid excavator to Welsh Slate and with Peter Barrett, Marubeni's expert machine demonstrator on site to provide a machine walk-around and answer any questions, the excavator was quickly put to use in the quarry. Speaking with machine operator Arwel Griffith on that first day, first impressions were very positive.

*"I wondered if the Hybrid machine would be powerful enough and might struggle, but in operation it was actually very*



**Marubeni-Komatsu machine demonstrator, Peter Barratt talks operator Arwel Griffith through the Hybrid's features**



**On-board computer display**

*good indeed and did everything the regular machine would do with ease"* commented Arwel. *"I could tell straight away that it was noticeably quieter than the normal machine and it also seemed much smoother in its operation. It was fast to slew round but very precise - I liked that. In*

*many ways it felt like operating a much lighter class of machine. The cab was as comfortable as ever - maybe even more so because of the smoothness. Every now and then I'd have a quick check on the digital display to see how it was doing - it definitely used much less fuel,"* he concluded.

# Staggering levels of fuel saving

"At the end of the week's trial we had a rough idea what the fuel saving looked like," explained Mike. "We were estimating on using around 60 litres less fuel each day, which represents a massive saving over the course of a year."

**KOMTRAX**

These estimations were well and truly backed up by the Komatsu Komtrax report seen below. "By identifying one of Hawk's own PC360LC-10 excavators - itself an efficient machine - we could draw a direct comparison against the Hybrid HB365LC-3 where both machines were undertaking almost identical tasks," explained Ross Smith, Marubeni-Komatsu's Technology Products Manager.

"The results are staggering! Based on an actual work rate of 87.3%, **the Hybrid machine saved a massive 7.9 litres per hour**. Assuming an 8 hour working day and a conservative 200 working days per year, that equates to 12,640 litres per year. At current prices, that's an **annual saving of over £6000!** On top of that, CO<sub>2</sub> emissions would be reduced by a staggering 33 Tonnes per year" continued Ross.

"This test has really proven just how efficient the Komatsu Hybrid system can be under the right circumstances. For machines that are primarily used to load, slew, unload and slew back with very little traveling, the hybrid system operates at its peak as hybrid regeneration occurs during slewing deceleration."

Based on these findings, it's been impossible for Hawk to deny the benefits of Komatsu's Hybrid excavators and, have ordered three HB365s and a total of ten HB215 Hybrid excavators. These fuel saving excavators will be put to use on Hawk's many contracted sites as well as forming an essential part of their hire fleet – an investment that's especially important for Hawk customers looking to meet increasingly stringent environmental targets.

**Hawk Plant can be contacted on 01948 842 120 or online at: [www.hawk-plant-hire.co.uk](http://www.hawk-plant-hire.co.uk)**

## Technology Products Manager



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### PC360LC-10 November 2015

Reporting Machine	Report Period	Working Days	Working Hour	SMR at the end of period
PC360LC-10-K60120	11/01/2015-11/30/2015	19Day	135.9H	3245.6H

  

Fuel Consumption Information				
Accumulated Fuel Consumption	Avg Fuel Consumption	Fuel Consumption in Actual Working	CO <sub>2</sub> Emissions (total)	
3984.1L	29.3L/H	33.6L/H	10.2ton	

\*CO<sub>2</sub> emissions equals to Fuel Consumption multiplied by the constant (2.58 ton/k). Displayed fuel data is approximate. There could be difference between actual amount because of operation condition(fuel, weather, operation and etc.)

Working Description			
Usage	Working Hour	Percentage	Working Description
1	135.9H	100%	Actual Working Hours
2	115.9H	85.2%	Actual Working Hours
3	20.0H	14.8%	Idling Hours

  

Operation Hours			
Usage	Working Hour	Percentage	Working Description
1	24.7H	21.3%	Digging Hours
2	30.9H	26.6%	Hoist Hours
3	0.0H	0.0%	ATT Hours
4	14.3H	12.3%	Travel Hours

It is effective for fuel efficiency to decrease idle hours and travel hours.  
\*Display values are ratio to actual working hours.

### HB365LC-3 Machine

Reporting Machine	Report Period	Working Days	Working Hour	SMR at the end of period
HB365LC-3-5054	08/18/2016-08/22/2016	3Day	22.9H	150.3H

  

Fuel Consumption Information				
Accumulated Fuel Consumption	Avg Fuel Consumption	Fuel Consumption in Actual Working	CO <sub>2</sub> Emissions (total)	
490.7L	21.4L/H	24.0L/H	1.2ton	

\*CO<sub>2</sub> emissions equals to Fuel Consumption multiplied by the constant (2.58 ton/k). Displayed fuel data is approximate. There could be difference between actual amount because of operation condition(fuel, weather, operation and etc.)

Working Description			
Usage	Working Hour	Percentage	Working Description
1	22.9H	100%	Actual Working Hours
2	20.0H	87.3%	Actual Working Hours
3	2.9H	12.7%	Idling Hours

  

Operation Hours			
Usage	Working Hour	Percentage	Working Description
1	4.5H	22.5%	Digging Hours
2	5.8H	29.0%	Hoist Hours
3	0.0H	0.0%	ATT Hours
4	1.2H	6.0%	Travel Hours

It is effective for fuel efficiency to decrease idle hours and travel hours.  
\*Display values are ratio to actual working hours.

The Komtrax comparison report conclusively shows an average fuel saving on 7.9L/hr

If you'd like to find out how Marubeni-Komatsu can help your business, call our team of experts on 01527 512512 today

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