

Proactive Driver Performance Management Keeps Fuel Efficiency on Track

Case Study



Company:	Thorntons plc
Location:	Alfreton, Derbyshire
Featured Vehicles:	Tractor units, semi-trailers, rigids and vans
Fuel Type:	Diesel
Fleet Size:	43 goods vehicles 44 semi-trailers

Background

Thorntons is a major UK manufacturer and retailer of premium confectionery, with more than 4,200 employees. Its 65-acre site, Thornton Park, links manufacturing, packing, warehousing and distribution operations in one location. The distribution operation delivers a product range of over 1,000 different stock items on a regular basis to its 389 stores and 198 franchised locations, including 26 sites with Thorntons' cafes.

A fuel management programme was originally implemented in 1995 as part of the company's commitment to:

- ➡ Reduce distribution costs
- ➡ Improve operational efficiency
- ➡ Reduce the environmental impact of its distribution operations

The encouraging results achieved convinced Thorntons of the need to develop and refine the programme to maintain and increase savings, and to achieve further environmental benefits. They invested further in computerised fuel monitoring equipment and introduced a range of key driver performance indicators linked to financial bonuses. The success of this incentive scheme is due primarily to its careful management, which allows individual drivers to raise issues and explain any under-performance on a weekly basis.

Top Tips

- ➡ Regular meetings between drivers and managers, plus a financial bonus for the most efficient drivers help to meet performance targets
- ➡ Accurate records of fuel use and key driver performance indicators provide a basis for successful fuel management
- ➡ Computerised systems for data collection save time and effort, but it is important to analyse the data correctly and make use of the findings



1 Thorntons' Distribution System



Many of the 48 drivers employed in the operation are long-serving, having moved through the ranks from warehouseman, to driver's mate and then to junior driver, before securing senior driving roles.

Drivers are responsible for delivering the many different types of product directly into shop storerooms. Drivers' mates also assist with deliveries, particularly during operational peak periods including the build-up to Christmas, Valentine's Day and Easter. Frozen products such as ice cream and frozen patisserie are delivered to the company's stores and cafes throughout the year and not just during the summer months.

The distribution operation relocated to modern facilities at Thornton Park, Alfreton, from Belper in 1999. Following this move, the fleet expanded in order to meet the higher sales volume resulting from the increased number of retail outlets. In 2003 the fleet consisted of:

- ➡ 34 tractor units (32 and 38 tonnes)
- ➡ 44 semi-trailers (predominantly refrigerated units with bulkheads for mixed frozen/chilled and ambient loads)
- ➡ Two 17 tonne rigids
- ➡ Two 7.5 tonne rigids
- ➡ Five vans for rapid response deliveries

The fleet uses approximately 1.04 million litres of diesel fuel per year and covers over 2 million miles on distribution work throughout the UK. Thornton Park has fuel storage tanks with capacity for 50,000 litres of derv and 10,000 litres of red diesel. All vehicle maintenance is carried out on-site in purpose-built garage facilities.

Most distribution activity involves daytime store delivery of company products. However, Thorntons has developed an innovative way to maximise vehicle use and make best use of its assets. Some vehicles are double-shifted and carry out work on behalf of a third party. Although overall fleet mileage increased as third party trunking developed (see Table 1), this activity produced a useful revenue stream, off-setting a significant proportion of the cost of distributing Thorntons' products.

Table 1 Annual Fleet Mileage Comparison

	Fleet Mileage	
	2001/02	2002/03
Shop work	1,364,457	1,556,728*
Inter-factory / commercial	75,518	114,076**
Trunking	380,033	604,793***
Total	1,820,008	2,275,597

* Increased due to more retail outlets.
 ** Increased due to an increase in number of deliveries to major retailers' RDCs.
 *** Increased due to trunking for a third party.



2 Implementation of the Fuel Management Programme



The original fuel management programme set up in 1995 involved:

- ➡ Introduction of manual recording sheets to collect weekly fuel consumption data
- ➡ Installation of data loggers in eight vehicles (out of a fleet of 26 servicing 520 outlets)
- ➡ Creation of performance league tables

These measures led to lower fuel costs, maintenance costs, emissions and accident rates. Unfortunately, performance improvements were found to be short-lived and old driving habits started to creep back in, after three months in some cases.

In an attempt to produce continuous performance improvements, managers regularly spent time encouraging drivers and operational staff, and reminding them of the importance of the fuel management programme.

The move to Thornton Park in 1999 allowed a renewed focus on developing and refining the fuel management programme. Fuel was monitored throughout each stage of the operation from receipt in bulk, through storage on-site, to driver issue and, ultimately, in-vehicle use.

2.1 New On-site Measures

The use of a computerised fuel management system linked to the site's derv and red diesel fuel storage tanks, coupled with an intelligent driver fuel key system enables operational staff to monitor all fuel drawn on-site.

Odometer readings, which are requested by the computerised system when drivers insert their fuel key in the fuel dispenser, are verified manually against the drivers' tachograph charts.

The capacity of the vehicle fuel tanks has also been increased from 400 litres to 600 litres to help reduce the need for off-site refuelling. This has enabled management to keep tighter control over all fuel drawn.

2.2 New In-cab Measures

The data loggers installed in 1995 proved a key tool for monitoring driver performance. More advanced data loggers have now been installed in all the fleet's tractor units. The information from the in-cab data logger is automatically downloaded by radio frequency on return to Thornton Park. Driver performance is measured by a penalty points system relative to the following pre-set parameters and is then expressed as a percentage of these:

- ➡ **Idling** - the time when the vehicle is stationary with the engine running is recorded. After two minutes idling time, the data logger issues an audible warning to the driver and penalty points are deducted after a total of three minutes
- ➡ **Over-revving** - the optimum engine speed level is within the vehicle's green band. An audible warning is given when the driver approaches the top end of the green band and points are deducted when the green band is exceeded
- ➡ **Speeding** - the parameter for vehicle speed is set voluntarily by Thorntons with the help of the equipment supplier at 54 mph and points are deducted when this speed is exceeded
- ➡ **Harsh braking** - penalty points are deducted if vehicle speed decreases faster than a given rate. The rate is set voluntarily at 11 km per hour per second (0.3g) by Thorntons with the help of the equipment supplier



Both idling and speeding, which can easily be avoided by drivers, are penalised more heavily than over-revving and harsh braking. In some cases, for example, to avoid an accident, harsh braking is unavoidable.

2.3 Additional Key Elements

The new fuel management programme now links performance as measured by the data loggers with three other key criteria:

- ➡ **Tachographs and drivers' hours** - every tachograph chart is analysed to ensure no infringements have occurred
- ➡ **Service levels** - driver performance is monitored to ensure delivery of product to stores, on time and in perfect condition. Any discrepancies, either in late deliveries or damaged product, are reported to the driver's transport leader (see 2.4)
- ➡ **Accidents** - drivers' accident records are strictly monitored to ensure minimisation of 'driver culpable' incidents

2.4 Incentive Scheme

Thorntons has created an innovative incentive scheme that truly engages drivers in the fuel management programme.

The 48 drivers each belong to one of four teams of 12. Each team is led by its own transport leader. Each drivers' performance is measured over a 12-week period.

Drivers aim to achieve:

- ➡ An average over the 12-week period of 98% on the data logger scoring system
- ➡ 100% infringement-free record from the analysis of tachograph/drivers' hours
- ➡ 100% achievement of service level targets
- ➡ 100% accident-free record

Driver performance is summarised in a published driver league table and drivers meet their respective transport leaders once a week for a debriefing. This debriefing is the key to the scheme's success as it gives drivers the opportunity to explain any discrepancies that might have affected their recorded performance level, for example, heavy congestion on a motorway leading to late deliveries or an accident that was not the driver's fault.

If drivers achieve the required level for each of these performance targets over the 12-week period, then they receive a financial bonus, roughly equivalent to 5% of their earnings, over the following 12-week period.



3 Benefits

Thorntons' commitment to developing a fleet fuel management programme has continued to pay dividends, particularly in recent years as consistency has improved through the introduction of the driver incentive scheme. As driving performance and fuel efficiency have improved, Thorntons has indicated that the number of accidents for which its drivers are liable has also fallen.

Since 1999, the cost of Thorntons' distribution operations, relative to turnover, has fallen progressively from 1.83% in 1999 to 1.56% in 2003. Fleet performance (as measured by the data logger grading system) improved from 87% before 1998/99 to 97.1% in 2003/04 (see Table 2).

Table 2 Fleet Performance

Fleet Performance (%) - According to Data Logger Grading System	
Pre 1998/9	87.0
1999/00	91.5
2000/01	92.7
2001/02	93.8
2002/03	94.2
2003/04*	97.1
*Up to October 2003	

The average MPG of the core fleet (17 tonne rigids, 32 tonne articulated and 38 tonne articulated, see Table 3) improved from 9.29 MPG in 2000/01 to 9.90 MPG in 2002/03 - a fuel efficiency improvement of just over 6.5%. These results are even more impressive given that the fleet structure changed in 2001 with six of the fleet's eight rigids being replaced by larger articulated vehicles.

Table 3 Comparing Vehicles and Average MPG

	17 tonne rigids		32 tonne articulated		38 tonne articulated	
	Miles	Av. mpg	Miles	Av. mpg	Miles	Av. mpg
2000/01	321,744	11.74	1,173,303	8.78	3,342	7.34
2001/02	232,992	11.96	1,346,837	8.73	48,289	8.50
2002/03	129,803	12.73	1,530,331	8.86	291,884	8.11

Thorntons' distribution operation spends around £675,000 per year on approximately 1.04 million litres of deriv. The 6.5% improvement in fleet fuel consumption equated to savings of around 67,500 litres per year when consumption in 2002/03 was compared with that for 2000/01. Assuming a fuel price of 65 pence per litre (excluding VAT), this reduction was worth £43,875 per year and an annual saving of some 181 tonnes of carbon dioxide.

The payback period on the capital expenditure required to implement the improved fuel management programme was approximately 18 months. Thorntons considered this was a worthwhile investment given the ongoing fuel savings.

4 Conclusions

Thorntons' continued commitment to refining its fuel management programme has led to the development of a highly effective driver incentive scheme, which combines in-cab driver monitoring with drivers' hours and tachograph compliance, service delivery levels and accident rates. Sound management practice has been fundamental to the significant improvement in fuel consumption experienced since the late 1990s.

The benefits of the fuel management programme at Thorntons include:

- ➔ Cost savings
- ➔ Increased fuel efficiency
- ➔ Reduced carbon dioxide and other polluting emissions
- ➔ Improved utilisation of vehicle assets
- ➔ Reduction in proportion of turnover spent on distribution
- ➔ Improved driving performance
- ➔ Reduced accidents

Thorntons acknowledges the progress it has made in engaging its driving staff, but recognises that its fuel management programme must evolve to be a continued success. Plans for the future include developing further measures to identify, support and train under-performing colleagues.

A Boost to Fuel Efficiency at Thorntons plc

“Distribution may be subsidiary to the main activity of our business, but it underpins our overall commercial success. As the business as a whole strives to increase its turnover, so we constantly endeavour to reduce both the financial and environmental costs of our distribution operation. Since 1999, Thorntons has increased turnover from £143 million to £167.1 million per year, but the percentage cost of distribution relative to turnover has fallen from 1.83% to 1.56%.

One of the key tools used to achieve this reduction in operating costs has been our fuel management programme – undoubtedly a cornerstone of our operation. It is a great example of drivers, operations staff and management working together to improve our operational efficiency and reduce our operating costs. The programme has been developed over a number of years and will continue to be refined in the future.”

**Greg Garside, Head of Warehousing and Distribution,
Thorntons plc (2003)**



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