

*Fuel economy – an Independent collaborative approach.*

## *BTAC Methodology*





**British Transport Advisory Consortium**



**“Simply the test”**

**The importance of getting it right  
first time.**

# Introduction

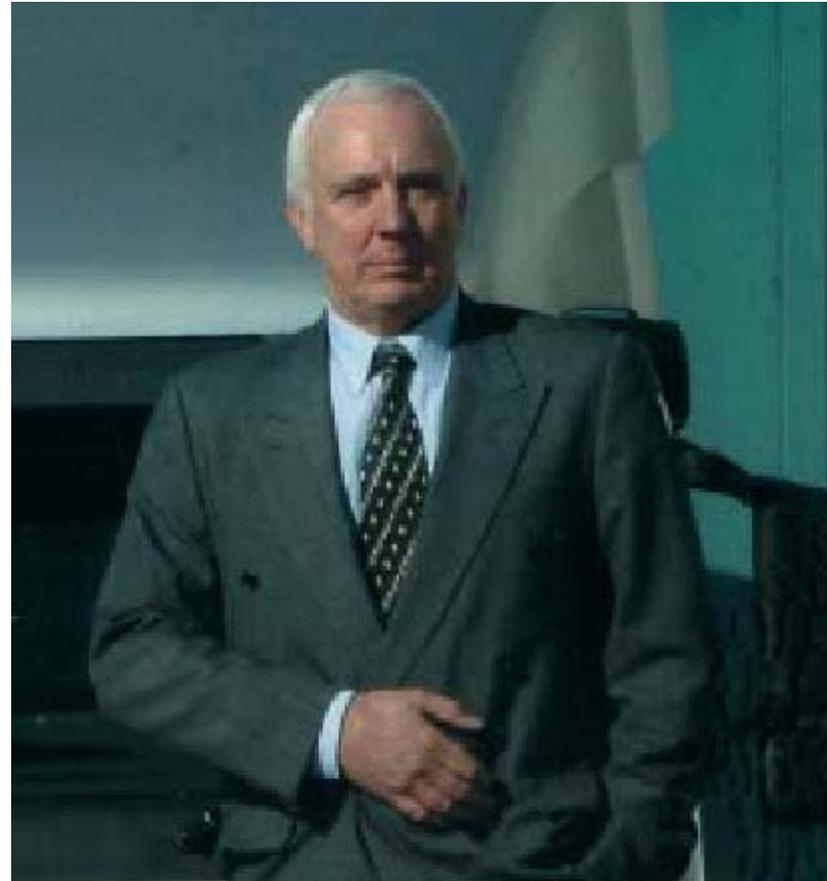
Sorry to disappoint you all.

No I am not David Batty the Ex Leeds & England footballer or the presenter of a popular antiques programme, but -

## David Batty

The former Engineering Fleet Controller of Somerfield Stores Limited.

The Engineering Director of  
BATNEEC Development Services.  
(Best Available Technique not  
Entailing Excessive Costs)



# SOMERFIELD FACT FILE

- **1,279 Stores**
- **58,000 Employees (of which 1700 are drivers)**
- **14 Regional Distribution Centres**
- **1 National Distribution Centre at Wellingborough**
- **2,500 Store deliveries per day**
- **7 Million cases per week**
- **Fleet size:**
- **646 Tractors - distribution plated at 31,000kg & Trunking at 44,000kg**
- **1,250 Trailers - Composite and ambient (~50:50)**
- **40 Rigid Vehicles>**

# SOMERFIELD FACT FILE

- **24/7 logistics operation**
- **Mixed Tractor Unit Fleet: 95% Volvo FM & 5% DAF**
- **largest Volvo FM fleet in Europe**
- **Total fleet mileage: 56 million miles PA**
- **Typical average tractor unit mileage: 87,000 miles PA**
- **Total fuel usage: 6.16 million gallons PA (9.09 MPG) (excludes rebated fuel)**



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As you can see, the size of the fleet and the amount of spend, which was several million pounds per annum, the decisions made on fleet purchases had to be the correct ones, the first time round.

We annually purchased 150 tractors per annum and 200 semi trailers.

Choosing equipment that gave us the best MPG were major concerns.

Before any of these major purchases were made we did rigorous testing at the proving ground using the BTAC IRTE type one and type two gravimetric tests. For those unsure of Gravimetric, it is a process of bolting on to a vehicle a small removable fuel tank with self sealing fuel couplings where the fuel is accurately weighed specific gravity and temperature are all taken before and after accurately measured distances are recorded. The testing is arguably the most accurate way of measuring fuel consumption.



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Gravimetric tanks



# Tests completed prior to purchasing decisions being made.

- 1. Climate control – the effect on fuel
- 2. Positioning of weight on vehicles
- 3. The effect of weight on fuel
- 4. Low energy tyres
- 5. Tyre pressures
- 6. Road speed limiters
- 7. Aerodynamics (FSC)
- 8. Cab to trailer gaps
- 9. Automated gearbox evaluation
- 10. Telematic accuracy comparisons

# The next few slides quickly lay out some of the major testing we did, and their associated results.

Low energy tyres - proving ground saving achieved **8%** on new rubber, down to **3%** on end of life rubber.

Tyre pressures – the proving ground testing established our optimum tyre pressure settings commensurate with axle weights.

Climate control – zero effect on fuel consumption on our 12litre capacity units.

Road speed limiters – optimum setting **6%** fuel saving.

Cab to trailer gap – **7%** fuel saving.

FSC – Fuel Saving Curve double deck. Minimum **8%**.

Other tests to verify various effects upon fuel consumption.

Weight to fuel a stepped table was produced to establish to us the effect of weight on fuel, which was used to accurately price and control costs on our back haul operation.

Positioning of weight on vehicles and handling characteristics.

Telematic accuracy comparison from onboard computers.

Automated gearbox evaluation.

All the above tests and testing with the BTAC methodology resulted in correct vehicle specification for the Somerfield operation, and many thousands of pounds of fuel and emissions saved.

The fuel saving percentages highlighted in **green** are huge cost savings to a business with a fuel spend of £21,000,000 PA.



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2003 the effect on fuel testing for climate control.



## Cab Cap - Some Test results

A cab gap of 155 cm resulted in an MPG of 9.0

Q. What do you think the MPG would be if the cab gap was reduced to 135 cm? = 9.3 MPG



B.T.A.C  
Gravimetric Tank

Q. What would be the MPG with a cab gap of 113 cm?

= 9.7 MPG



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2008 proving ground evaluation road speed limiters and tyre pressures.

# Fuel Saving Curve evaluation at the proving ground



The first of the Fuel Saving Curve ever produced.

Now the industry norm.



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**In conclusion -**

**It pays to test before you purchase**

**Costs very little do so,**

**And have you any easy to answer questions?**