



APD held a Driver and Vehicle Data Management Day on 14th June 2011 at Millbrook Proving Ground in Bedfordshire. Using APD's DVMS solution, which was selected by ACPO ITS to be demonstrated at the HOSDB Exhibition earlier this year, APD prepared two vehicles and devised a set course for 20 Emergency Services personnel to test their eco-driving skills and to demonstrate how modifying driver behaviour can have huge cost saving potential.

The Test

The object of the exercise was to monitor current driver behaviour and fuel economy, suggest how improvements could be made, use in-vehicle technology to give real-time driver feedback and then analyse the improvements achieved through the use of the technology. Each vehicle was equipped with the APD DVMS solution and a Millbrook instructor with each driver being given their own individual Driver-ID token which was used on each of the sessions to identify the driver of the vehicle. This information was captured and stored so that individual performance improvements could be monitored and reported upon. Whilst driving around the pre-determined route, live information was relayed from the vehicle and points for poor driving (excessive acceleration, braking, cornering and engine revs) were displayed on the reports screen. Progress of the vehicle location around the circuit was also shown in real time on the Co-Ordinator Map Client screen.



In the first driving session, our delegates were asked to drive the vehicles in the manner in which they believed the majority of police vehicles to be driven and their driver behaviour and fuel economy were recorded. In the second session the delegates were asked to drive the vehicles in accordance with eco-driving practices and use the in-vehicle DVMS feedback (an iPhone displaying driver behaviour using a red, amber, green warning system) to adjust their driving style and keep within the thresholds of acceptable driver behaviour.

The results of both sessions were then compared to illustrate the benefits that the DVMS solution is able to deliver in terms of improved fuel economy, reduced vehicle wear and tear, and enhanced driver safety. The cost saving benefits of these improvements were then investigated, with particular emphasis on the potential savings that can be realised by increasing fuel economy.

The Results

The following charts and graphs detail overall fuel usage and MPG, as well as individual driver comparisons. It should be noted that not every driver improved on their second run!

Overview of Run 1

- Total number of points scored in run 1 was 1677 (average of 83.85 per driver)
- Total fuel used in run 1 was 11.56 litres
- Cost of run 1 (at 139.9 per litre) was £16.19
- Average mpg for run 1 was 26.77

Overview of Run 2

- Total number of points scored in run 2 was 71 (average of 3.55 per driver)
- Total fuel used in run 2 was 7.05 litres
- Cost of run 2 (at 139.9 per litre) was £9.88
- Average mpg for run 2 was 44.26

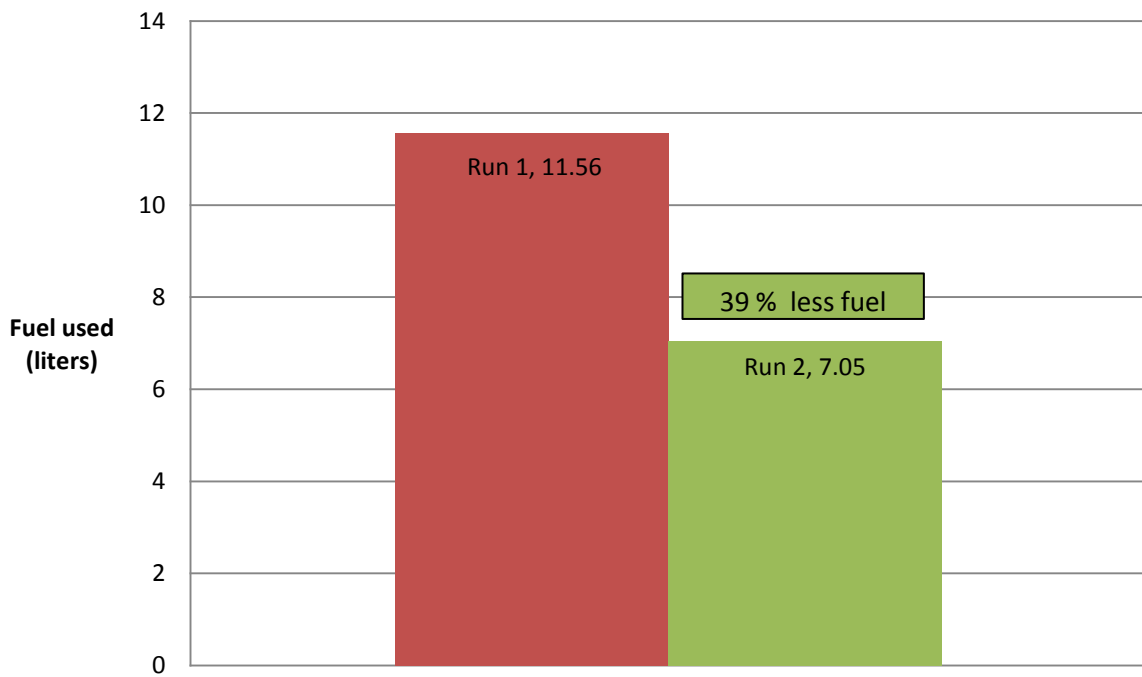
Comparison of Fuel Used and Cost

- Run 2 used 4.51 litres (39%) less fuel than run 1
- Run 2 cost £6.31 (39%) less than run 1
- Average improvement in fuel economy was 17.49 mpg

Total cost Run 1 vs Run 2



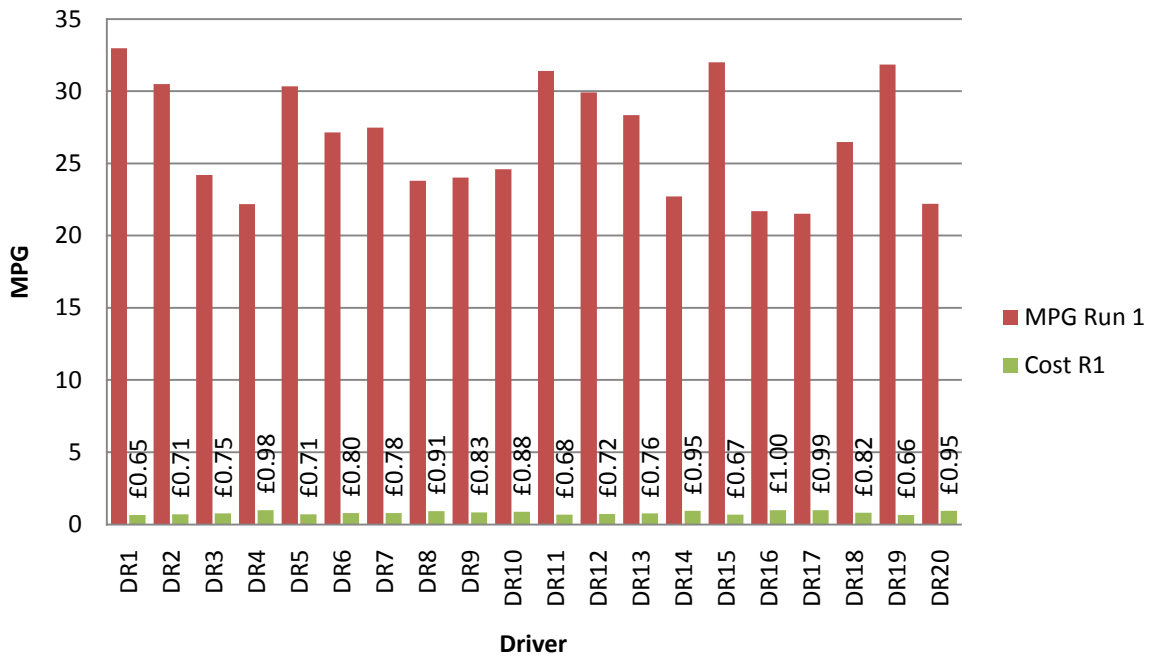
Total fuel used in Run 1 vs Run 2



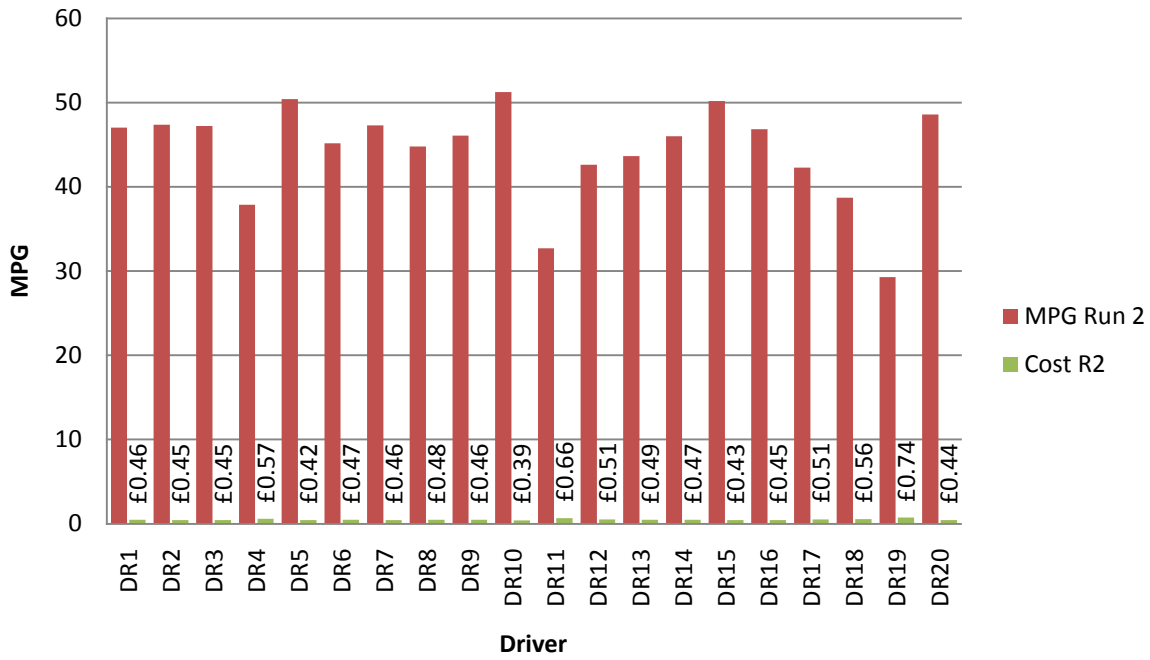
Average MPG for Run 1 and Run 2



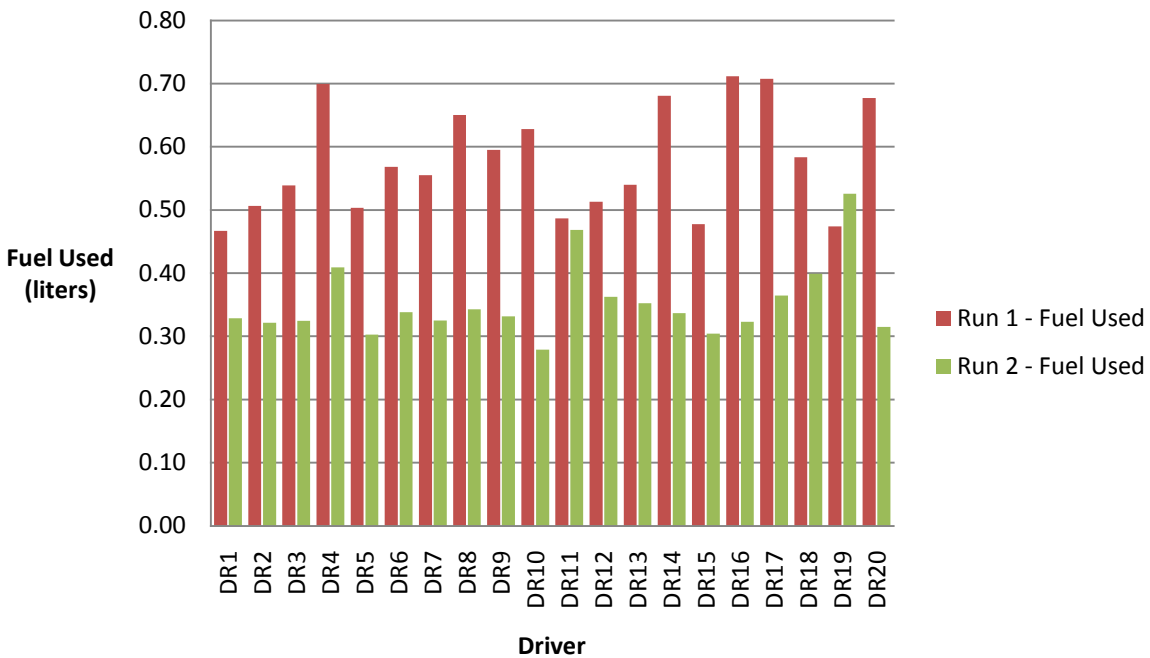
Run 1 MPG and Cost

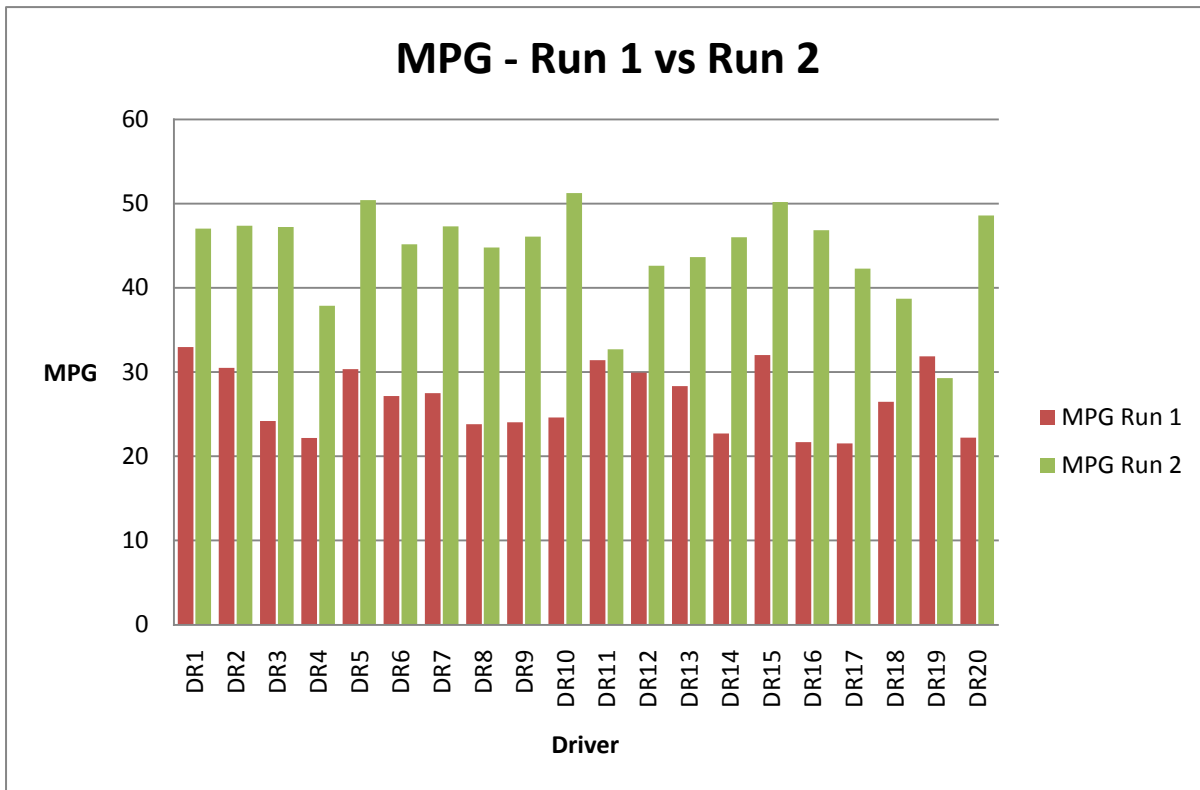


Run 2 - MPG and Cost



Fuel Used - Run 1 vs Run 2





Conclusion

It is clear from the comparisons above that significant cost savings can be realised through implementing the APD DVMS solution to:-

- monitor driver behaviour and fuel economy
- identify areas for improvement
- provide live feedback to assist drivers
- set thresholds that can be configured to give sustained improvement

Fleet managers and driving instructors who attended on the day were able to witness first-hand the cost saving implications of DVMS but many also made reference to the value of the solution in terms of encouraging drivers to drive not only more efficiently, but also more safely.

Whilst this event was held in a controlled environment and such high percentage savings (39%) are unlikely to be achieved in the real world, it is clear that the DVMS solution is capable of delivering significant cost benefit.

Taking into account the spiralling cost of fuel and the 47,000 Police vehicles in the UK which travel in excess of 700,000,000 miles per annum, it is clear that any reduction in fuel costs would give considerable savings. For example, if the UK fleet was currently averaging 30mpg, at today's pump price this would equate to an annual fuel bill of around £148.5 million.

If DVMS was able to increase this average to 35mpg, then the annual fuel bill would reduce to £127.3 million – an annual saving of £21.2 million.

If DVMS was able to realise an increase from 30mpg to 40mpg, which is still considerably less than the 39% increase achieved on the day, then the annual fuel bill would reduce to £111.4 million – an annual saving of £37.1 million.

Remember, this is in fuel savings alone – these figures do not take into account the other benefits that the solution can deliver – reduced wear and tear on tyres, brakes, suspension and steering components leading to reduced maintenance and servicing costs, less expense due to vehicle breakdowns, improved driver safety leading to a reduction in accidents and associated costs.

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