

# An Introduction to Digital Tachograph

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## Tachographs

Tachographs, or as the legislation calls them 'recording equipment', have been in use under the current European Union (EU) legislation for 16 years.

Over this time the tachograph has evolved. In the early days we had mechanical tachographs, which progressed to the early electronic units, but these were subject to interference by unscrupulous users. In order to combat this interference some amendments were made to the regulations that required diagnostic features to be incorporated into the tachograph, and for the signal cables to be armoured to prevent tampering, which brought us to electronic heads

All of these analogue units record the driver's periods of duty on a waxed paper disc - a tachograph chart. These are not always interchangeable between the different units and are vulnerable to damage and tampering.

We then had a new concept in design with certain modular units, these still use charts, but have a remote speedometer fitted, allowing variable location of the main unit. The sender unit signal is also encrypted, increasing security, reducing the need for some of the sealing requirements.

## Why change

The EU wanted to take advantage of technology now available in order to ensure the security of the recording of the driver's duty periods. The aim is that the new system is less vulnerable to illegal acts by users to distort the data. The new system will also allow for easier and better control of driver's hours by operators and the enforcement authorities.

This will ensure that the original objectives of:

- Road safety
- Social legislation
- Providing a more even commercial playing field between operators are supported in a robust fashion.

These new generations of tachographs are also designed to allow operators to utilise the technology to enable low cost expansion to support other functions for fleet management.

## When will this happen

In a nut shell ALL new vehicles that require fitment of a tachograph (current exemptions still apply) first registered on and after 5<sup>th</sup> August 2004 should have been fitted with a digital unit complying to Annex 1B. An extension to this date of 1 year was agreed by the Commission because of technical difficulties experienced by the tachograph manufacturers and these are still being experienced for some vehicles. In March of 2005 the Minister, David Jamieson, released a statement confirming that GB would support the introduction and use of digital tachographs from August this year, **but** would not require mandatory fitment until such time as it was clear that industry could support this. A mandatory date of May 2006 has now been agreed.

There was been a delay due to negotiations between member states over the technical specification of the new tachograph, but this has been agreed and was published via a further EU regulation.

This regulation contains the new technical specification - Annex 1B, and you may hear these new tachographs referred to as a 1B tachograph.

## What is a digital tachograph

Digital tachographs are similar in appearance to a modular analogue tachograph.

They come in separate parts, a vehicle unit and a speedometer - but that is where similarities end. In all other aspects this is a totally different animal.

The Vehicle Unit (VU) is located within the driver's area of the vehicle cab. It sends a signal to the speedometer / odometer unit that is located where the driver has a clear view of it. The vehicle unit still receives a signal from the vehicle (usually from the gearbox) as the analogue units do, via a cable.

The VU is the brains of the system. It is able to hold data on drivers of the vehicle and their periods of driving and duty for about a 12-month period. It will also hold data relating to faults, attempts to tamper with the system, over speeding, calibration details, and when data has been accessed, for example, by VOSA staff or Police.

The VU and the motion sensor from the gearbox will be encoded as a pair and the signals from the sensor will be fully encrypted so any attempt to interfere with them will be registered and recorded in the vehicle unit. [This is greater than the current modular tachographs]

The VU will be set to Universal Time Co-ordinated (UTC) - as another name for Greenwich Mean Time (GMT) - all records will be against this time. The visual display will probably be set to the local time, but this will not affect the internal time. What needs to be remembered is that the stored record will be an hour behind in British Summer Time - for example - a driver starts at 0600 (6am), the record will show 0500 (5am). There will be no difference in the winter as we are back to GMT.

Drivers, companies (operators), workshops (tachograph calibration centres) and enforcement officers (VOSA & Police) will each have smart cards according to their specific needs. These enable them to use and / or give access to the data in the VU.

The biggest difference between the current analogue tachograph and the digital tachograph will be the use of a **smart card** instead of the record sheets (often called charts, discs, tachos) used in analogue tachographs.

There are 4 cards (collectively known as [Digital Tachograph Cards](#)) that are used by the digital tachograph system:

- Driver card - used by drivers;
- Company card - for use by the operator;
- Workshop card - available only to approved calibration centres; and,
- Control card - available only to VOSA and Police for carrying out enforcement.

The company card is a plastic card similar in size to a photo driving licence / credit card, with a microchip in it.

Like the current tachograph, the digital unit records driver activity times - driving, other work, rest and breaks. However unlike the current analogue, which records only to a record sheet, the digital units will record to the driver smart card and also hold the information in the Vehicle Unit (VU).

The company card allows you to 'lock' data recorded in the VU (tachograph) to prevent another operator looking at the data. You will need to do this in order to ensure you protect the personal information of you and your driver(s), and details of work patterns and times from competitors. This would become important if you were to sell a vehicle or use a hire vehicle.

For the system to work however, the data needs to be 'locked in' to your company before you start operating the vehicle and then 'locked out' when your use has finished. It is not possible to 'lock in' data retrospectively and that data would remain open for all to view.

The card will also allow you to download the information from the VU in order that you can carry out checks on drivers' hours and rostering etc as required by the legislation, and to maintain records described in the undertakings of your Operators' Licence issued by the Traffic Commissioner.