

GUIDE TO VEHICLE WEIGHING

OVERLOADING

Every vehicle on the road, from cars to Articulated Trucks has what is known as a plated weight. It is illegal to exceed this plated weight. The Vehicle & Operator Services Agency (VOSA) and the police both have powers to stop, weigh, and restrict any vehicle on a UK road. This means that an operator who is running their truck illegally could find themselves on the receiving end of a stiff penalty, in addition to the inconvenience of not being able to continue their journey.

How often have you heard excuses like these?

- But I don't want to make two trips.
- There wasn't a weighbridge near where I loaded.
- How am I supposed to know where the weight is on my vehicle?
- I thought this vehicle could carry 3.5 Tonnes.
- I was weighed when I left the depot and was ok, so why am I overloaded now?
- Just doing my job, how am I supposed to know the weight of what I'm picking up?
- Doesn't look overloaded to me.

YOUR RESPONSIBILITIES

If you run a fleet of vehicles, it is likely you have an 'O' Licence. When you signed up for this licence, you agreed to meet a number of conditions to do with the safe running of your fleet. One of these was "Vehicle and Trailers are not overloaded". In addition to this, an 'O' Licence holder has an obligation to notify the Traffic Commissioner of any convictions which are not spent – and this includes fines and prohibitions for overloading. This will harm your OCRS (Operator Compliance Risk Score), often known as the VOSA traffic light system.

Even if you don't require the above licence, you must still comply with the law. Overloading a vehicle can also make you fall foul of Health & Safety legislation, Duty of Care, and even (in extreme cases) Corporate Manslaughter.

As such, you have a duty of care to yourself, your employees and the general public to ensure that your vehicle (and those of the people who work for you) are safe and used in a legally compliant fashion. Overloading is an absolute offence – there are no excuses!

THE SEE-SAW EFFECT

When talking about vehicle weight, almost everybody knows that a vehicle has a Gross Vehicle Weight (GVW) which refers to its plated weight. What a lot of people don't realise is that there is also a plated weight for the front and rear axles. This means that although you could be running legally overall, you could be illegal thanks to the weight being balanced too far to the front or rear.

A good truck will be designed so that if a weight is placed evenly across its body space, the weight will be distributed over the front and rear axles, but most pallets and parcels

don't come flat and as such, weight can be spread unevenly. This is known as the see-saw effect, a rather appropriate description.

Additionally, if there is extra weight behind the rear axle, such as when a trailer is carried, the weight on the rear axle will increase but the front axle load will diminish. If however the trailer is not loaded correctly and there is negative weight on the tow ball behind the rear axle, the weight on the rear axle will drop and the front will increase – this would be a highly dangerous situation as the whole vehicle would become unstable due to lack of trailer control.

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FINES & PENALTIES

As of early 2010, there is now a simple graduated fixed penalty (GFP) system, which targets the driver of a vehicle for overloading.

For vehicles up to 10% overloaded - £60 fine

Vehicles 10 – 15% overloaded - £120 fine

Vehicle over 15% overloaded - £200 fine

GFP's affect your OCRS score, meaning VOSA are more likely to stop and check you time and time again as a non-compliant operator.

In addition, another £ 60 fixed fine and three penalty points on the driver's licence can be gained, if VOSA feel the driver

is using the vehicle in a dangerous condition, which includes weight position and distribution of the load.

However, VOSA or the police may decide to prosecute, in the case of repeat offenders or for serious overloads, then both the operator and the driver are liable for a fine of up to £5,000 per offence. This means that a 3.5T vehicle could have a fine of up to £15,000 (one offence for each of front, rear and gross), which could apply to both driver and company separately. A Traffic Commissioner can also take your Operator licence away if they feel you are likely to re-offend, and it is extremely difficult (or very expensive in sub-contract fees) to run a fleet with no 'O' Licence!

OTHER DOWNSIDES TO OVERLOADING

In addition to the legalities, other downsides exist to overloading, not least of which is a health and safety issue. When overloaded the vehicle is harder to steer and braking is less effective. It also increases the general wear and tear on tyres and suspension, meaning increased maintenance costs.

Insurance policies may be null and void if a crash was found to be caused by an unsafe or excessive load, and fuel consumption increases. With the increased cost of road tax, we all need to take better care of the roads, and overloading increases the strains on the road surface as well.

OVERLOAD PREVENTION

After reading all of the above, you might be forgiven for thinking "how can I possibly keep on top of all of that?" Well, it is not as bad as it first seems. Start with the specification of the vehicle – is it big enough to do the job. Many vehicle manufacturers now produce small vehicles with large carrying capacity at their customer's request, and whilst this is fine if you are distributing pillows or cornflakes, you might have a hard time if you are a scrap metal merchant. Next, look at your monitoring capabilities. When was the last time you check weighed a vehicle? Do your drivers have a list of public weighbridges? Do you have a procedure in place?

Training is important. Do the appropriate staff know the correct weight limits for your vehicles? If your drivers do multi-drops, have they been trained in how best to redistribute a load? Have you educated your customers as to how to package their goods to help you with heavy weights?

Finally, provide your drivers with a means to monitor their load condition. Red Forge produce systems suitable for almost any vehicle configuration you can think of and then some besides. We have been involved in the design and modification of bespoke systems since the early 1980's.

PAYLOAD MONITORING

Some fleets need more than just the standard overload protection; they actually need to know more accurately what they are carrying. In many cases this is simply for audit reasons, but often it is also for assisting in important commercial decisions. For instance, how is a waste collection business supposed to work out what rate band a customer fall into if they have no idea of the amount of waste they collect?

More accurate systems tend to employ load cells mounted between the body and the chassis of the vehicle. This brings an added advantage of being more robust for vehicles used across difficult terrain, such as landfill or building sites. These systems tend to have more in the way of control with additional features, such as USB drives for data output, or packing control to ensure an RCV doesn't over pack its load.

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ON VEHICLE
RED
FORGE
WEIGHING SYSTEMS

CERTIFIED 'CHARGE-BY-WEIGHT' REGULATIONS

In the UK, in order to produce an invoice based upon the weight of a product (either delivered or waste taken away) you must have a system that is certified to a given accuracy and repeatability. It would be very easy to break the law by using a standard loadcell system to charge by weight, as they appear accurate enough on the surface, but thanks to legislation there are restrictions in place against this.

On the continent, and in EIRE, legislation exists that has forced the use of certified systems for waste removal. RFID tagging is often used to identify a customer's bin, and help assign each weight to the correct customer. Many companies have realised the benefits this provides, as it allows them to identify jobs where they were previously losing money. In comparison the UK market for these systems is still very much

in its infancy, but despite this Red Forge have been involved in fitting them for over 10 years.

Please be aware when looking at certified systems that you are comparing 'apples with apples', as many systems that are cheaper can claim certification only running to Class IV (the lower of these two standards) when they should be running to the higher specified Class III.

Before considering any form of Pay-by-Weight scheme, we would suggest speaking to your local trading standards office, along with the National Weights and Measures Laboratory (NWML), and ourselves to make sure that you are looking at purchasing the right system. This will give you a better understanding of what the requirements are, and how we can help you comply with them.

RED FORGE SYSTEM TYPES

The Red Forge range breaks down into three general categories:

Axle Load Indication

On Board Weighing

Class III and IV Certified Systems

Axle Load Indication

Basic Overload Protection – designed to give a warning of 'approaching' and 'exceeded' legal load limits on individual axles and Gross Vehicle Weight. Using spring deflection, it is usually not as accurate as loadcell based systems, but still falls well within the guidelines for VOSA enforcement of overload prosecutions. These are the most common form of system suitable for commercial vehicles.

Axle Load Indication is easily retrofittable, but as with all types of systems does require occasional calibration to ensure it retains the best possible accuracy.

On Board Weighing

On-Board Weighing uses loadcells to measure the weight of the vehicles payload. These provide a linear output giving a measure of the weight that is more accurate than spring deflection. There are various forms of loadcell that can be

used to measure the strain in any one given direction, for example under the body of a refuse truck or from a crane head. The Red Forge Omniweigh system uses temperature compensated loadcells to prevent drift due to very hot or cold weather, and has Axle Load Prediction (effectively a built in Axle Load Indicator) to prevent overloads.

On-Board systems usually need little or no maintenance, but are fitted directly into the sub frame (or equivalent) of the vehicle, meaning that they are installed by bodyshops (Red Forge also has the facility to offer this service). Retrofitting an On-Board system is more costly as the body has to be lifted in order to carry out the installation.

Class III and IV Certified Systems

Certified systems are required for any form of charge by weight requirements. These systems are similar to On-Board systems in their use of loadcells and installation, but they are tested to a required specific accuracy and repeatability. Please see the advice elsewhere in this guide with regard to certified systems.

We are the UK distributors for Welvaarts, who are a market leading company producing certified weighing systems throughout Europe. Often the certified solution is bespoke to the vehicle in question, and we strongly recommend that you contact us directly in order to discuss your particular requirement.

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