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# Type approval for vehicles

On the 29th April this year the process of registering most 3.5 tonne vehicles in Europe changed. With further changes scheduled to bring larger vehicles into the net next year, Ed Darwin takes a look at this new type approval legislation and the different avenues of certification available, highlighting the advantages and disadvantages of each.



## What is whole vehicle type approval?

In 2007 the framework Directive covering European type approval for cars was extended to cover buses, coaches, vans, trucks, trailers and other special purpose vehicles. Introduced to ensure all new vehicles manufactured in Europe comply with specific performance, safety and environmental standards, the European Community Whole Vehicle Type Approval (ECWVTA) Directive 2007/46/EC has been gradually introduced to include varying vehicle categories, with the final set - vans and trucks over 3.5 tonne (existing type - N2, N3 and Special Purpose vehicles) - scheduled for 29th October 2014.

Whole vehicle type approval applies to all companies which manufacturer or modify vehicles, including those that mount aerial lifts, loader cranes or specialist delivery truck beds. Essentially, once the legislation is fully implemented, all new vehicles will be subject to testing, certification and production conformity by a third party. Failure to obtain the correct certification for a specific vehicle will almost certainly prevent it from being registered or entering into service.

## Which equipment is exempt?

The requirement for type approval is not retrospective and only applies to new vehicles. The following list of vehicles will however remain exempt – at least in the UK – from needing type approval, although they will undoubtedly have to comply with other legislation.

- Vehicles designed for use by the armed services, the police and civil defence, including fire engines.
- Tracked vehicles.
- Vehicles designed and constructed principally for use on construction sites, quarries, ports or airports.
- Mobile machinery - for example most mobile cranes and telehandlers.
- Vehicles with maximum design speed below 25km/h – such as road sweepers, prototypes and pedestrian controlled vehicles.

## How to attain type approval?

There are four potential avenues available to obtain the certification needed:

- European Community Whole Vehicle Type Approval (ECWVTA)
- European Community Small Series Type Approval (ECSSTA)



- National Small Series Type Approval (NSSTA)
- Individual Vehicle Approval (IVA) - (UK specific)

It is worth noting that while the first two apply throughout Europe, NSSTA is country-specific. Each country may also have its own individual vehicle approval system similar to the UK's IVA scheme.

## Approval Authorities

For each European member state a single designated type approval authority has been appointed, for example in the UK the approved authority is the Vehicle Certification Agency (VCA). Only the VCA can Type Approve vehicles and their

component parts to EU standards, however the Vehicle and Operator Services Agency (VOSA) is able to test and certify individual vehicles (IVA).

Generally speaking, companies that apply for the European wide type approvals can carry out the necessary tests at their own facilities (once appraised and approved) in front of a witness from the appointed authority. In the UK, IVA tests can either be carried out at a VOSA test facility or at a privately owned/on-site test facility. We attempted to contact VOSA regarding the official number of test centres it operates, but had still not

## Vehicle categories explained

GOODS VEHICLES			
N <sub>1</sub>		Light vans and trucks	3.5t or less
N <sub>2</sub>		Mid size vans and trucks	Over 3.5t and not more than 12t
N <sub>3</sub>		Heavy vans and trucks	Over 12t
TRAILERS			
O <sub>1</sub>		Very light trailers	0.75t or less
O <sub>2</sub>		Light trailers	Over 0.75t and not more than 3.5t
O <sub>3</sub>		Medium trailers	Over 3.5t and not more than 10t
O <sub>4</sub>		Heavy trailers	Over 10t



received an answer before going to print. Information published in 2011 showed that it had a total of 86 centres with 61 in England, 20 in Scotland and five in Wales.

### Costs

It is impossible to accurately calculate the cost of approvals under each scheme, as they vary depending on the number and complexity of the tests required and the time taken to undertake them. The fees will also vary depending upon the complexity of initial consultation with the manufacturer to decide what testing and inspections will be required, and the review of the test reports resulting from the tests and inspections.

Additional costs may also be incurred in preparing the vehicle to undergo the testing – including the time and cost of any further changes and alterations should it fail its inspection. Depending on the size of a company's operation the type approval process will more than likely need a dedicated employee - which obviously comes at a cost.

Which certification route is most suitable depends on the manufacturer's plans for a vehicle in terms of production volumes, its distribution network and intended markets. The choice is far from straightforward and requires careful consideration. With advantages and disadvantages aplenty, it is likely that adopting more than one will be the best solution. Below we outline the key points to each process.

### European Community Whole Vehicle Type Approval (ECWVTA)

ECWVTA is best suited to manufacturers which produce large numbers of the same vehicle, especially if it intends to export them across Europe.

For this process a single production vehicle is tested as being representative of the 'type', ensuring it meets all European

environmental, safety and security requirements which extend not only to the vehicle's chassis but also the bodywork. A number of performance requirements will apply to a given vehicle type, ranging from tyres through to exhaust emissions and braking systems. Once all of the system and component approvals are in place, the vehicle will be considered as a whole by the designated approval body. Once approved, the manufacturer can produce a Certificate of Conformity (CoC) for each vehicle manufactured on an unlimited basis and vehicles can be registered throughout the EU without further approvals.

This assessment can take place at a manufacturer's/installation company's facility, providing it has the appropriate equipment and its manufacturing processes have been approved and given a Conformity of Production (CoP) certification. Obtaining this is greatly simplified if the company is already ISO certified.

### EC Small Series Type Approval (ECSSTA)

EC Small Series Type Approval (ECSSTA) has been created for lower volume car, light van and truck producers only. Although it is still subject to European type approval standards, the technical and administrative requirements are reduced, making it more suitable for smaller businesses. The most noticeable difference is that it has a limit of 1,000 units a year for each type. As such, this will be an attractive option for crane and aerial lift manufacturers.

### National Small Series Type Approval (NSSTA)

Manufacturers and installers which produce moderate numbers each year and/or have a limited export market, will probably find the European type approvals an unnecessary expense and



*Picking the most suitable type approval route depends entirely on the manufacturer's plans for the vehicle in terms of production volumes, its distribution network and intended markets*

will prefer a National Approval. NSSTA allows manufacturers to produce up to 500 vehicles of a similar specification each year and although it is still a 'type' approval the requirements and costs are more modest. The Conformity of Production (CoP) requirements will also be proportionate to the scale of the manufacturer's operation. Once a vehicle is approved it is the responsibility of the manufacturer to issue NSSTA certificates for each vehicle produced as part of the series and to record and maintain the details of vehicles produced. There is a limited requirement for

other EU member states to accept National Approvals, so an individual vehicle test may be required when exporting a vehicle.

Steve Couling, managing director of Versalift UK, said: "As the UK's leading van mount producer, we have the volume to make type approval worthwhile. Production some of our models mounted on a 3.5 tonne Ford Transit run to around 150 units a year. Small series approval is a considerable cost upfront and quite bureaucratic putting all the technical files together, however, once approved we are able to use our approval



*Versalift has adopted the same under-run method as its sister company Time Export (Denmark) in order to comply with specific legislation*



*Versalift's NSSTA sticker of conformity*





*King's 14 metre GSR 140TJV which the company claims is the first rear wheel drive 3.5 tonne Ford Transit to be type approved. Because of the UK specific IVA procedure there was no need for items such as the under-run at the rear of the vehicle*

tonne chassis. In the UK this is not possible."

Under the latest type approval rules a vehicle is required to be tested with a full tank of fuel and a 75kg allowance for every seat. With zero tolerance on Gross Vehicle Weight in several countries, including the UK, all individually approved vehicles will need to prove that they comply before they can be registered. With the imminent arrival of Euro 4 and 5 engines and with aerial lifts already stretching the capabilities of 3.5 tonne chassis, something has to give. An interesting and equally complicated subject this is something we will look to address in another issue of C&A.

**Things will get worse before they get better**

Given the current financial climate this legislation has undoubtedly come as an additional and unwelcome burden for many. With margins already tight, any extra costs will have to be passed on to customers and with VCA and VOSA inspectors already in short supply, testing is likely to add further delays to what is already a lengthy process. Therefore it is more important than ever to communicate with customers, educating and advising them on what to expect. Engaging with the process as early as possible is also crucial to avoid delays further down the line.

It is likely that on a national basis most companies will choose IVA in order to comply with the new rules as it allows them to maintain extensive ranges and continuing to offer specialist and one-off vehicles for customers. It will obviously take time before companies, approved bodies and customers alike fully understand the implications however with the introduction of large vehicles next year it is likely to get worse before it gets better.

number time and time again."

"In the past a van mount's fly boom and bucket was not considered to be part of a vehicle in the UK," says Couling. "Under the European Whole Type Approval it is part of the vehicle, obliging us to consider rear under-run protection – something that was already required in some other markets. We have had to extend the rear step to comply, but have been able to combat the extra weight by mounting it on a front-wheel drive vehicle."

"In a typical year prior to whole type approval we might do on average 15 aerial lifts mounted on Opel Movanos and maybe a few on Renault chassis. To do that now requires each individual vehicle to be tested (see the IVA process on opposite page). You are very much at the mercy of what dates are available and getting a test date can take up to 10 to 12 weeks from submitting the application. There is also the issue and costs of transporting the vehicle to the nearest testing facility - I recently heard of a case in which a company had to drive all the way from Scotland to Cumbria! All in all the combined cost of transport and the test fee can add around £600 to each vehicle individually tested."

"It is easy to see how customers might become frustrated when they cannot take delivery of a finished vehicle just because it is waiting on a test date. Unfortunately the ability to satisfy customers one-off requests is not as easy and straightforward as it used to be. We have been warning customers for almost 18 months that this new approval was coming and that it

would lead to significant changes. Hopefully they understand that if they want a certain boom on a specific chassis it now involves extra costs and more than likely with a longer wait time."

**Individual Vehicle Approval (IVA)**

If you are making just a single unit or limited number of the same type, the one off IVA scheme is the way to go. While it is the least onerous of the approval routes, it involves an inspection of each and every vehicle and only applies within the respective country.

**Carrington on IVA/GGR and its test facility.**

Mark Carrington, managing director of King Highway, which produces transport trailers, truck beds and mounts GSR aerial lifts, said: "Given that small series approval is for the production of up to 250 trailers and 500 3.5 tonne vehicles a year we have adopted the policy to individually approve each vehicle. A lot of what we do is low volume production of vehicles intended solely for the UK market. It is therefore far more cost effective for us to apply for IVA than any other routes available."

**Test facility**

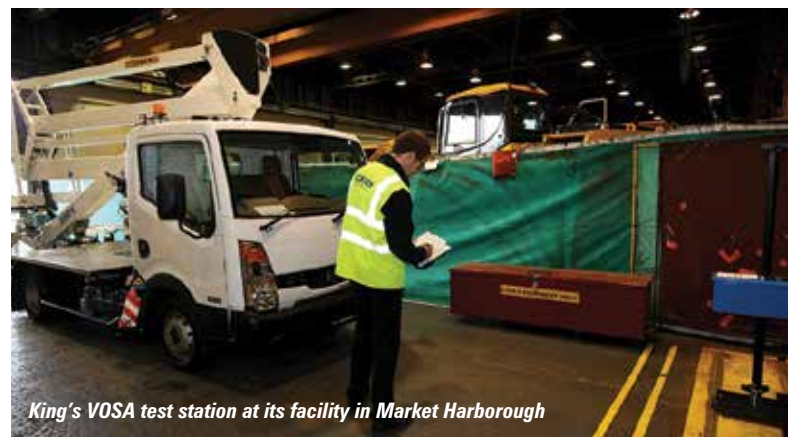
"One of the largest costs with this process tends to be transporting vehicles to a testing station. We established our own testing facility - originally for our trailers - making us the first company to do so in the UK. The facility now allows up to five vehicles a day to be inspected, however as it is not a self-certification process, we still require a VOSA inspector on site to

physically inspect each vehicle."

"We have had to make a number of changes to our facility, with a designated VOSA testing bay and working area, along with a range of requirements including the installation of a head lamp tester, calibrated weighing pads and waiting bays, to name a few. The company is gradually reaching a point where, in theory, it could become a MOT test station."

**Is that a 3.5 or 3.6 tonne chassis?**

"Varying tolerances and requirements in each European country means that it is possible to get a vehicle type approved in one country but not another," adds Carrington. "As the UK distributor of GSR we have fully assessed and tested its range of truck mounted lifts and are able to supply its entire range bar one or two of the larger models mounted on a 3.5 tonne chassis. The reason for this is that some countries allow a 10 percent tolerance on the gross weight of a vehicle, which permits larger booms to be mounted on a 3.5



*King's VOSA test station at its facility in Market Harborough*