

<b>Title:</b> Examining the maximum weights of agricultural trailers and combinations <b>IA No:</b> DfT00246 <b>Lead department or agency:</b> Department for Transport  <b>Other departments or agencies:</b> Department for the Environment, Food and Rural Affairs	<b>Impact Assessment (IA)</b>		
	<b>Date:</b> 25/09/2013		
	<b>Stage:</b> Consultation		
	<b>Source of intervention:</b> Domestic		
	<b>Type of measure:</b> Secondary Legislation		
	<b>Contact for enquiries:</b> Katherine Lancaster, katherine.lancaster@df.t.gsi.gov.uk		

<b>Summary: Intervention and Options</b>	<b>RPC:</b> RPC Opinion Status
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Cost of Preferred (or more likely) Option				
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCB on 2009 prices)	In scope of One-In, Measure qualifies as One-Out?	
£701.73m	£701.73m	-£65.00m	Yes	Out


**What is the problem under consideration? Why is government intervention necessary?**  
 The maximum weight of agricultural trailers and combinations is 18.29t and 24.39t. It has been suggested by a group of stakeholders who formed the Farming Regulation Task Force that the current weight limits are too low, and cause unnecessary costs to vehicle operators. Weight limits are set by Government to balance the private benefits of larger payloads with the social cost of heavier vehicles, particularly increased accident severity and road damage. Government intervention is required as weight limits are a regulated activity.

**What are the policy objectives and the intended effects?**  
 The policy objective is to maximise the productivity and economic performance of the agricultural sector by considering a change to the current combination and trailer weight limits. The intention is to reduce time spent on the road for tractor drivers and increase productivity for farmers in GB. The industry perceives the current weight limits to be outdated. The intention is also to level the playing field for businesses, as vehicles which weigh above the existing limits currently have a competitive advantage over those that are adhering to the maximum limits.

**What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)**  
 Do nothing. This is the baseline for comparison.  
 Option 1: Allow agricultural vehicle operators to volunteer for an annual vehicle test which if they passed would enable them to drive with increased maximum trailer *and* maximum combination weights (i.e. maximum weight of trailers - 21t and maximum weight of combinations - 31t.)  
 Option 2: Allow agricultural vehicle operators to volunteer for an annual vehicle test which if they passed would enable them to drive with increased maximum combination weights (while keeping the same maximum trailer weight). (i.e. maximum weight of trailers remains at 18.29 and maximum weight of combinations increases to 31t.)  
 Option 1 is the preferred option. It reduces time spent driving for tractor drivers and increases productivity for farmers.

<b>Will the policy be reviewed?</b> It will be reviewed. <b>If applicable, set review date:</b> October 2019					
Does implementation go beyond minimum EU requirements?			Yes / No / N/A		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	<b>Micro</b> Yes	<b>&lt; 20</b> Yes	<b>Small</b> Yes	<b>Medium</b> Yes	<b>Large</b> Yes
What is the CO <sub>2</sub> equivalent change in greenhouse gas emissions? (Million tonnes CO <sub>2</sub> equivalent)			<b>Traded:</b> 0	<b>Non-traded:</b> NQ	

*I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.*

Signed by the Minister responsible:  Date: 04/11/2013

## Summary: Analysis & Evidence

## Policy Option 1

Description: Allow agricultural vehicle operators to volunteer for an annual vehicle test which if they passed would enable them to drive with increased maximum trailer *and* maximum combination weights (i.e. increase the maximum weight of trailers to 21t and increase the maximum weight of combinations to 31t.)

### FULL ECONOMIC ASSESSMENT

Price Base Year 2013	PV Base Year 2014	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)			
			Low: 23.89	High: 1379.58	Best Estimate: 701.73	
<b>COSTS (£m)</b>	<b>Total Transition (Constant Price) Years</b>		<b>Average Annual (excl. Transition) (Constant Price)</b>		<b>Total Cost (Present Value)</b>	
Low	0.0		15.0		<b>128.7</b>	
High	0.0		22.4		<b>193.1</b>	
Best Estimate	0.0		18.7		<b>160.9</b>	
<b>Description and scale of key monetised costs by 'main affected groups'</b>						
Agricultural vehicle operators will experience testing costs should they volunteer for the scheme (£187m over 10 years).						
<b>Other key non-monetised costs by 'main affected groups'</b>						
Increased vehicle maintenance costs for tractor operators volunteering for the scheme. Publicity costs to Government and the private sector.						
<b>IMPACT UNCERTAIN:</b>						
Possibly increased fuel costs as tractors carry heavier loads. Possibly increased fuel duty as more fuel is consumed (transfer). There could be an increase in Greenhouse Gas (GHG) emissions and a deterioration in air quality. Government may take in less fuel duty revenue if fuel consumption falls (transfer). There may be an increase in road maintenance costs. There could be an increase in noise. Possible road safety costs.						
<b>BENEFITS (£m)</b>	<b>Total Transition (Constant Price) Years</b>		<b>Average Annual (excl. Transition) (Constant Price)</b>		<b>Total Benefit (Present Value)</b>	
Low	0.0		25.3		<b>217.0</b>	
High	0.0		176.1		<b>1508.3</b>	
Best Estimate	0.0		100.7		<b>862.6</b>	
<b>Description and scale of key monetised benefits by 'main affected groups'</b>						
Time savings for drivers who can carry the same total daily payload as before but in fewer trips (£1.01b over 10 years).						
<b>Other key non-monetised benefits by 'main affected groups'</b>						
Farmers will experience a reduction in non-fuel operating 'costs' - heavier payloads will lead to savings as vehicles become more productive. More level playing field for businesses and increased respect for GB tractor and trailer weight limits.						
<b>IMPACT UNCERTAIN:</b>						
Possibly decreased fuel costs as tractors undertake fewer trips. Possibly decreased fuel duty as less fuel is consumed (transfer). There could be a decrease in Greenhouse Gas (GHG) emissions and a deterioration in air quality. Government may take in more fuel duty revenue if fuel consumption increases (transfer). There may be a decrease in road maintenance costs. There could be a decrease in noise. Possible road safety benefits.						
<b>Key assumptions/sensitivities/risks</b>					<b>Discount rate (%)</b>	3.5

The analysis considers the impact on farms operating during peak months only. Where aggregated data has been provided for certain inputs, these values are assumed to apply on a disaggregated level. For instance, figures showing average distance travelled have not been provided for England and Wales separately: so it has been assumed that these values are the same for both countries. There is 100% compliance with the law, (all legal requirements are met by all participants at all times).

#### BUSINESS ASSESSMENT (Option 1)

<b>Direct impact on business (Equivalent Annual) £m:</b>			<b>In scope of OIOO?</b>	<b>Measure qualifies as</b>
<b>Costs: 14.9</b>	<b>Benefits: 79.9</b>	<b>Net: 65.0</b>	Yes	OUT

## Summary: Analysis & Evidence

## Policy Option 2

Description: Allow agricultural vehicle operators to volunteer for an annual vehicle test which if they passed would enable them to drive with increased maximum combination weights, (while keeping the same maximum trailer weight). (I.e. The maximum weight of trailers remains at 18.29 and the maximum weight of combinations is increased to 31t.)

#### FULL ECONOMIC ASSESSMENT

Price Base Year 2013	PV Base Year 2014	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -14.71	High: 699.38	Best Estimate: 342.33

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0.0	15.0	128.7
High	0.0	22.4	193.1
Best Estimate	0.0	18.7	160.9

#### Description and scale of key monetised costs by 'main affected groups'

Agricultural vehicle operators will experience testing costs should they volunteer for the scheme (£187m over 10 years).

#### Other key non-monetised costs by 'main affected groups'

Increased Vehicle maintenance costs for drivers volunteering for the scheme.  
Publicity costs to Government and the private sector.

#### IMPACT UNCERTAIN:

Possibly increased fuel costs as tractors carry heavier loads.  
Possibly increased fuel duty as more fuel is consumed (transfer).  
There could be an increase in Greenhouse Gas (GHG) emissions and a deterioration in air quality.  
Government may take in less fuel duty revenue if fuel consumption falls (transfer).  
There may be an increase in road maintenance costs.  
There could be an increase in noise.  
Possible road safety costs.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0.0	20.8	178.4
High	0.0	96.7	828.1
Best Estimate	0.0	58.8	503.2

#### Description and scale of key monetised benefits by 'main affected groups'

Time savings for drivers who can carry the same total daily payload as before but in fewer trips (£588m over 10 years).

### Other key non-monetised benefits by 'main affected groups'

Farmers will experience a reduction in non-fuel operating 'costs' - heavier payloads will lead to savings as vehicles become more productive.

More level playing field for businesses and increased respect for GB tractor and trailer weight limits.

#### IMPACT UNCERTAIN:

Possibly decreased fuel costs as tractors undertake fewer trips.

Possibly decreased fuel duty as less fuel is consumed (transfer).

There could be a decrease in Greenhouse Gas (GHG) emissions and a deterioration in air quality.

Government may take in more fuel duty revenue if fuel consumption increases (transfer).

There may be a decrease in road maintenance costs.

There could be a decrease in noise.

Possible road safety benefits

#### Key assumptions/sensitivities/risks

Discount rate (%)

3.5

The analysis considers the impact on farms operating during peak months only.

Where aggregated data has been provided for certain inputs, these values are assumed to apply on a disaggregated level. For instance, figures showing average distance travelled have not been provided for England and Wales separately: so it has been assumed that these values are the same for both countries.

There is 100% compliance with the law, (all legal requirements are met by all participants at all times).

### BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 14.9	Benefits: 46.6	Net: 31.7	Yes	OUT

### Background

1. The maximum weight of agricultural trailers is 18.29. The maximum weight of agricultural combinations (tractor and trailer) is 24.39 tonnes. These are contained in the Road Vehicles (Construction and Use) Regulations 1986 regulation 75 and 76 respectively, and cover GB.<sup>1</sup> Commercial vehicle enforcement is carried out by the police and the Vehicle and Operator Services Agency (VOSA).<sup>2</sup>
2. Advances in technology have introduced more sophisticated and more multi-tasking machinery for tractors to tow, and so tractors have become heavier – and many argue, safer - over the years since the current weight limits were set. However while larger and more capable equipment is being used, payload<sup>3</sup> limits have not changed. This has resulted in reduced load sizes that have made farming less efficient. Increasing the maximum tractor and trailer weights could mean that farming equipment is utilised better, and meets its potential.
3. The industry perceives the current weight limits (set in 1986) to be outdated and feels they do not reflect technological developments over the last quarter-century. For example the Agricultural Engineers Association (AEA) has reported that in the ten years between 1998 and 2008, the average horsepower of tractors increased by nearly 25%.
4. The Heavy Goods Vehicle (HGV) has to comply with many regulations to ensure safe and robust design and construction standards. Prior to entering service all HGV motor vehicles and trailers have to pass an inspection where these design and construction standards are verified and recorded. All HGV operators are required to have an 'O' licence to record all the motor vehicles and trailers they are permitted to use. An additional requirement of the 'O' licence is that an accurate record of vehicle repairs and maintenance is kept, including a six weekly examination and a 12 monthly roadworthiness test.
5. However apart from lifting equipment, there is no statutory inspection regime for agricultural vehicles and trailers, although regulations require vehicles used both on and off the highway to be properly maintained (roadworthy).
6. The reason there is no regular or periodic testing is historical. Agricultural vehicles have not traditionally been road-bound vehicles, but used within the confines of the farm. This is primarily for two reasons. Firstly, certain categories of vehicle are excluded from the definition of road vehicles,

<sup>1</sup> <http://www.legislation.gov.uk/uk/si/1986/1078/made>

<sup>2</sup> The current weight limits are based on the standards of agricultural vehicles of about 40 years ago.

<sup>3</sup> The weight of cargo.

and can therefore use tax rebated fuel (red diesel). These include tractors, light agricultural vehicles, agricultural material handlers, agricultural engines, agricultural processing vehicles, and vehicles used between different parts of the land.<sup>4</sup> The purpose of the regulations surrounding rebated fuel use is intended to restrict its use to vehicles that use the public road incidentally and spend the majority of their time off road. Secondly, the Goods Vehicle (Licensing of Operators) Regulations 1995 include an exemption for agricultural tractors from being listed on an Operators "O" Licence, although in order to be eligible for this exemption there are limitations on their use. These regulations permit crops to be hauled over any distance from the field to a store or up to 15 miles as produce.<sup>5</sup>

7. More recently however, evidence suggests that larger agricultural vehicles and more sophisticated machines mean agricultural vehicles are doing more haulage work (on public roads).<sup>6</sup>
8. The Farming Regulation Task Force (which is made up of members whose experience covers farming and growing, retail, food processing, conservation, private and public sector management, and regulatory implementation and enforcement), reported to Government on ways of reducing regulatory burdens on farmers and food processors on 17 May 2011.<sup>7</sup> The Report recommended 200 ways of reducing unnecessary "red tape" and challenges the Department for Environment, Food and Rural Affairs (DEFRA), its agencies and delivery partners to change the way they approach regulation for the industry. The Task Force recommended a new approach to regulation based on trust, responsibility and partnership between Government and industry.
9. The Task Force made a large number of recommendations about how individual regulations and processes could be improved without reducing standards. The issue of weight limits are the responsibility of the Department for Transport and the subject of this impact assessment.
10. We are also publishing a separate IA examining the speed limit for tractors on public roads.

### **Problem under Consideration**

11. Weight limits are set by Government to balance the private benefits of carrying load with the social cost of the presence of heavy vehicles on the roads. Government regulates weight limits because road users do not take the full social costs of operating heavy vehicles into account when loading them and might overload vehicles, leading to negative effects on road safety and road damage. Therefore a weight limit is set and penalties laid down for exceeding it. Road safety issues include the fact that the heavier a vehicle is, the harder it is to stop that vehicle, and the more damage it would do if it hit something.
12. However, there have been significant technical improvements to agricultural tractors since the current weight limits were set, in particular around braking and other safety related items. In some cases their braking performance can be similar to a heavy lorry of comparable weight. Many consider the current limits to therefore be unnecessarily burdensome given these advances.
13. Government intervention is required as vehicle weights are regulated by government.

### **Policy objective**

14. The policy objective is to maximise the efficiency of the agricultural industry by considering a change to the current weight restrictions for these vehicles so they can be better utilised. Increasing the maximum weights could generate lower costs for the agricultural industry, improve productivity and facilitate economic growth.

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[http://customs.hmrc.gov.uk/channelsPortalWebApp/channelsPortalWebApp.portal?nfpb=true&pageLabel=pageLibrary\\_ShowContent&id=HMCE\\_CL\\_000164&propertyType=document#P181\\_16924](http://customs.hmrc.gov.uk/channelsPortalWebApp/channelsPortalWebApp.portal?nfpb=true&pageLabel=pageLibrary_ShowContent&id=HMCE_CL_000164&propertyType=document#P181_16924)

<sup>5</sup> Ibid

<sup>6</sup> Note that – while the policy under consideration is aimed at improving the efficiency of tractor travel – in the analysis that follows it is assumed that the lower generalised cost of tractor travel (arising from farmers being able to make less trips to move a given payload) does not make farmers substitute from moving produce using other modes into using tractors, (i.e. tractor travel does not increase as a result of this proposal). However, because there is some degree of uncertainty surrounding this assumption (and it would be undesirable to see a big shift from travel using other modes into tractors), we will ask in the consultation the extent to which consultees view this as a risk.

<sup>7</sup> <https://www.gov.uk/government/publications/independent-farming-regulation-task-force-report>

15. We intend to consult on the proposals in order to seek further evidence and views from additional parties.
16. An IA considering a change to the current speed restrictions for these vehicles, to see if they can be increased, is being published separately.

### Roadworthiness Testing

17. Agricultural vehicle owners have a legal duty to maintain these vehicles properly,<sup>8</sup> and non-regulatory advice is provided to help them comply with the requirements.<sup>9</sup> However, a recent study by HSE showed 68.6%% of tractors and 56.3% of trailed appliances were not roadworthy. Details of the report can be found in Annex 4.
18. Analysis of accidents involving tractors mentions their roadworthiness as a factor. A 2007 Health and Safety Executive report recommended that agricultural vehicles need to be better maintained and that the weight limits for agricultural vehicles should not be relaxed unless the industry can significantly improve the maintenance and mechanical condition of its vehicles, either voluntarily or via a statutory scheme.”<sup>10</sup> This recommendation aligns with Options 1 and 2 in this IA.
19. The Farming Task Force believe that if vehicles passing a test are legally allowed to carry a larger payload, this will create an incentive for voluntary roadworthiness testing to be successful, and in turn raise standards for a sizable proportion of the existing fleet of agricultural vehicles, as the present sanctions-based approach to maintaining roadworthiness seems to be ineffective. It offers farmers and contractors an incentive to improve the safety and roadworthiness standards of their agricultural trailers, which the evidence shows to be frequently inadequate.
20. Stakeholders who support this regular voluntary testing scheme believe maintaining high standards of road safety to be of key importance, whilst also permitting farmers to take advantage of modern equipment, which is already used to its full potential in other EU member states. There has been no call for an increase in weight limits without such a testing regime.
21. The farming industry envisages the voluntary testing scheme to be self-funding and operated and supported by the industry itself and should thus be represented as a recurring direct cost to this group. Examples of where a non-government body have delivered statutory-based provisions are: OffQual; the National Sprayer Testing Scheme; Skills for Logistics, and; RSPCA.
22. The Farming Regulation Taskforce has proposed that the industry pay for the administration of the scheme through an annual fee for trailer testing. Stakeholders have suggested that vehicles could be examined every 12 months under an industry-led approval programme; however we will consult on the frequency of inspections. The consultation will include questions regarding the cost and funding of the voluntary testing scheme and we would work further with the farming industry on their suggestions for the scheme.

### Description of options considered

23. **Do nothing.** This is the baseline for comparison.  
**Option 1:** Allow agricultural vehicle operators to volunteer for an annual vehicle test which if they passed would enable them to drive with increased maximum trailer *and* maximum combination weights (i.e. maximum weight of trailers increased to 21t and maximum weight of combinations increased to 31t.)

<sup>8</sup> Regulations do exist that require vehicles used both on and off the highway to be properly maintained (roadworthy). Drivers of all vehicles, whether they are subject to MOT testing or not, must comply fully at all times with the requirements of the Road Vehicles (Construction and Use) regulations 1986, as amended, when they are using a motorised vehicle on a public road. These regulations set the standards that must be met in terms of the safety of the tyres, braking, steering and other equipment on the vehicle. Agricultural vehicles, trailers and trailed appliances are also covered by the Health and Safety at Work Act 1974 (HSW Act), which places a duty on companies/individuals to ensure precautions are taken to make work as safe as practically possible. The Provision and Use of Work Equipment Regulations 1988 apply to any equipment that is used at work; this can include tractors. The regulations require that equipment must be suitable for the task, properly maintained and guarded, and that adequate training and information about the equipment is available for employees. Regulation 100 of the Road Vehicles (Construction & Use) Regulations 1986 (SI 1986 No. 1078) requires a motor vehicle, and all its parts and accessories ... and the weight, distribution, packing and adjustment of the load of a vehicle, to be at all times such that no danger is caused, or is likely to be caused, to any person in or on a vehicle or on a road.

<sup>9</sup> To encourage better maintenance of agricultural vehicles, DfT, along with the Health & Safety Executive (HSE), supported the publication of a leaflet titled the “Farm Vehicle Health Check Scheme” produced by the British Agricultural & Garden Machinery Association (BAGMA). This leaflet is targeted at the operators of agricultural vehicles and other machinery and reminds them of their vehicle maintenance responsibilities.

<sup>10</sup> <http://www.hse.gov.uk/research/rrpdf/rr554.pdf>, p. 13.

**Option 2:** Allow agricultural vehicle operators to volunteer for an annual vehicle test which if they passed would enable them to drive with increased maximum combination weights, (while keeping the same maximum trailer weight). (I.e. maximum weight of trailers remains at 18.29 and maximum weight of combinations increases to 31t.)

Option 1 is the preferred option. It maximises the economic performance of the agricultural sector, eases time delays for tractor drivers and increases the productivity of farmers.

Alternatives to regulation have not been considered because weight limits are set by government regulation and only regulations can amend it.

We would review the change five years after implementation, to assess whether the limit has been set at the right level. DfT accident statistics will help us assess whether there has been a change in road accidents involving agricultural tractors as a result of this proposal.

### **Do nothing – the reference case against which other options are considered**

24. The 'do nothing' case is the counterfactual against which the benefits and costs of the other options are compared and appraised. In this case the 'do nothing' case is retaining the maximum weight of agricultural trailers and combinations at 18.29t and 24.39t.
25. There may be consequences from maintaining the status quo. Stakeholders say the current rules do not reflect the capabilities of modern farm machinery and in turn cause delay for farmers, and even encourage dangerous practice; the current regulations are said by stakeholders to create a perverse incentive to operate lighter tractors (6t) to maximise the laden trailer weight, (i.e. payload) and poses a risk to safety through more time on the road, a poorer level of control, and potential damage to the smaller towing vehicle.
26. Under these regulations, as tractors have got larger and heavier, the resulting payload has had to decrease in order for farmers to stay within the requirements for maximum laden weight, and stakeholders tell us that some farmers feel forced into putting smaller, less safe, tractors onto larger trailers to remain within the regulations, potentially decreasing handling ability and compromising safety. Many modern trailers are now manufactured with a capacity in excess of 16t which combined with the weight of the tractor and trailer body of 13-15t, leaves farmers with a choice to either:
  - Not fill the trailer to its capacity and make more journeys
  - Tow a full trailer with a small tractor to fit under the gross train weight (GTW)
  - Run illegally
27. If current regulation is maintained, productivity could continue to decline as effective permissible payloads decrease whilst tractors get heavier. However as we have no way of estimating to what extent this would occur it is assumed in the calculations which follow that effective payload constraints remain constant through time.

### **Monetised and non-monetised costs and benefits of each option (including administrative burden);**

#### **Costs and benefits of Option 1: Allow agricultural vehicle operators to volunteer for an annual vehicle test which if they passed would enable them to drive with increased maximum trailer and maximum combination weights**

28. For option 1, existing regulations would be changed to increase the maximum trailer weight *and* the maximum GTW, which is the total weight of the tractor unit plus trailer plus load.
29. The policy objective for Option 1 is to aid the efficiency of agricultural operations, and create a more level playing field for businesses.

30. The intention is that a regular voluntary testing scheme to enable increased maximum weights would raise standards for a proportion of the current fleet of agricultural vehicles and verify that the tractor and trailer are operating as intended when travelling. The relaxation would therefore be limited to those vehicles that have undergone both initial approval and roadworthiness testing. If either the tractor or trailer has not been approved, restrictions would be a GTW of 24.39t and a trailer weight of 18.29t, as at present. Should the tractor and trailer receive approval under the scheme, those maximum weights could be raised to 21t and 31t.<sup>11</sup>

### Monetised Benefits

31. The only monetised benefits that have been estimated for Option 1 are the time savings accruing to tractor drivers. This is because farmers, by being permitted to load more in their trailers, will need to make fewer trips overall in order to transport their materials, resulting in time savings.

32. The method used for estimating and monetising the time savings is shown below. Before beginning however, it is important to note the distinction between ‘Peak Months’, ‘Non-Peak Months’, ‘Peak Days’ and ‘Non-Peak Days’: Table A5 (in Annex 2), shows the proportion of farmers responding to a survey<sup>12</sup> who stated that the month in question was a ‘Peak Month’ for their trailer activity (accordingly, those who did not list the month in question as a ‘Peak’ one are assumed to have stated that this month for them was a ‘Non-Peak’ one). However, the analysis also assumes there is variation in trailer activity within a ‘Peak’ month (i.e. there are ‘Peak Days’ and ‘Non-Peak Days’).

33. The method used for estimating and monetising the time savings is as follows:

- First – to fill gaps in the data – we work out the amount of payload moved on average on a ‘Non-Peak day’ in a ‘Peak Month’. This is done using the first assumption listed in Annex 1.
- Next we calculate the number of trips required to move the payloads in question, (on both ‘Peak Days’ and ‘Non-Peak Days’) in the do nothing scenario. This is done by recognising that farmers are maximising the payload they are able to transport around the following three constraints: the laden trailer weight constraint (18.29 tonnes), the laden combination constraint (24.39 tonnes) and the trailer capacity constraint, (which is the maximum amount that can physically be loaded onto the trailer). These calculations are shown below for 16 tonne trailers, (in the “High Estimate” scenario)<sup>13</sup>:

### Trip Savings for Trailers with an average capacity of 16 tonnes

#### HIGH ESTIMATE

#### PEAK DAY IMPACT

Do Nothing

#### NON-PEAK DAY IMPACT

Do Nothing

#### MAXIMISING PAYLOAD AROUND TRAILER CONSTRAINT

Trailer Constraint	18.29		
Total Train weight	Tractor Weight	Implied Trailer weight	Max Payload
14.4	8.3	6.1	12.19

<sup>11</sup> These weight limits were recommended by members of the farming and agricultural engineering sector in the Independent Farming Regulation Task Force Report.

<sup>12</sup> The survey was conducted by the National Farmers’ Union.

<sup>13</sup> Note that these calculations are done four times: for 16 tonne trailers (“High” and “Low” scenarios) and for 12 tonne trailers (“High” and “Low” scenarios).



**MAXIMISING PAYLOAD AROUND COMBO CONSTRAINT**

Combo Constraint 24.39

Total Train weight	Tractor Weight	Implied Trailer weight	Max Payload
14.4	8.3	6.1	9.99

**MAXIMISING PAYLOAD AROUND TRAILER CAPACITY CONSTRAINT**

Capacity Constraint 19.2

19.2

**Payload Constraint**

9.99

**Peak Day Payload**

420

**Trips required to move Peak Day Payload**

42.04204

**Non-Peak Day Payload**

52.20343

**Trips required to move Non-Peak Day Payload**

5.225568

- These calculations are then repeated for the do something scenario (i.e. by increasing the trailer and combination weight limits to 21 and 31 tonnes, respectively), subtracting the original number of trips by the new number of trips, we obtain the number of trips saved:

**Do Something**

**MAXIMISING PAYLOAD AROUND TRAILER CONSTRAINT**

Trailer Constraint 21

Total Train weight	Tractor Weight	Implied Trailer weight	Max Payload
14.4	8.3	6.1	14.9

**MAXIMISING PAYLOAD AROUND COMBO CONSTRAINT**

Combo Constraint 31

Total Train weight	Tractor Weight	Implied Trailer weight	Max Payload

**Do Something**

14.4      8.3      6.1    **16.6**

**MAXIMISING PAYLOAD AROUND TRAILER CAPACITY CONSTRAINT**

Capacity Constraint      19.2

**19.2**

**Payload Constraint**

**14.9**

**Peak Day Payload**

**420**

**Non-Peak Day Payload**

**52.20343**

**Trips required to move Peak Day Payload**

**28.18792**

**Trips required to move Non-Peak Day Payload**

**3.503586**

**TOTAL TRIPS SAVED PER PEAK DAY**

**13.85412**

**TOTAL TRIPS SAVED PER NON-PEAK DAY**

**1.721983**

- We then proceed to calculate the distance saved per trailer by multiplying the number of trips saved by the figures in table A7 (Annex 2). This gives us the following:

**Distance Savings for Trailers with an average capacity of 16 tonnes**

**HIGH ESTIMATE**

**Distance Saved (miles) per PEAK DAY for...**

Arable & Mixed Farms

**126.3496**

'Other' Farms

**204.4868**

**Distance Saved (miles) per NON-PEAK DAY for...**

Arable & Mixed Farms

**15.70448**

## 'Other' Farms

25.41646

- Dividing these figures by the assumed average speed of 20mph (the current limit is 20mph) gives us the time saved per trailer.
- We subsequently scale the time saved per trailer in relation to the number (and types) of farms in each country, the proportion of farms we think this will apply to and the average number of trailers per farm. Then using the information contained in Table A5 (Annex 2), we scale these figures to obtain the total number of hours saved per year.
- Finally, using our estimates of the values of tractor driver time we calculate the value of time saved. The results for all trailer types are shown below:

### Total Value of Time Savings (2013 Prices, Non-Discounted)

#### HIGH ESTIMATE

2014	£160,960,793
2015	£164,662,891
2016	£168,499,537
2017	£172,088,577
2018	£174,893,620
2019	£177,761,876
2020	£180,677,171
2021	£184,019,698
2022	£187,258,445
2023	£190,572,919

#### LOW ESTIMATE

2014	£23,155,239
2015	£23,687,810
2016	£24,239,736
2017	£24,756,042
2018	£25,159,566
2019	£25,572,183
2020	£25,991,566
2021	£26,472,410
2022	£26,938,325
2023	£27,415,133

### Non-Monetised Benefits

#### Non-Fuel Operating Costs:

34. Farmers will experience a reduction in non-fuel operating costs as tractors are able to carry more per trip. The elements making up non-fuel vehicle operating costs include oil, tyres, maintenance, depreciation and vehicle capital savings. However, as the Department does not have a standard set of parameters regarding the non-fuel operating costs of agricultural tractors; it has not been possible to quantify these savings.

#### Competition benefits:

35. There is a potential benefit associated with changes whereby increasing the weight limits would level the playing field for businesses. We have anecdotal evidence obtained through informal dialogue with industry suggesting that at present a proportion of businesses are breaching these limits. Those farmers and operators currently have a competitive advantage over those who adhere to the maximum weight limits: a change in these limits could ensure that the latter group are not unfairly disadvantaged in this manner.
36. Furthermore the changes proposed could help to bring the GB industry more into line with the limits for weight in other EU member states such as France, which has a GTW limit of 38t for twin axle trailers with an effective maximum trailer weight of 31t, or Germany which has a GTW limit of 40t - although we are not currently certain of the caveats and conditions which apply to these countries - it's certainly true to say that because GB rules have not changed since 1986, we have not kept pace.

### Monetised Costs

#### Tractor and Trailer Testing costs:

37. As tractor drivers would only be able to take advantage of the new weight limits if they pass a test (which they would take voluntarily)<sup>14</sup>, there will be costs to drivers associated with taking the test. At present, we estimate that the test for a tractor and a trailer would be around £157<sup>15</sup>, that the test would be taken yearly and that – if a fault were identified – it would be fixed at the testing site and therefore a subsequent test would not be required. Our “High” and “Low” estimates of the annual test costs are shown below:

### HIGH ESTIMATE

Number of Trains	Arable & Mixed	Other
England	51,072	46,368
Wales	3,320	18,084
Scotland	12,093	11,942

<b>TOTAL</b>	142,878
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#### Total Spent on tests per year

£22,431,832
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### LOW ESTIMATE

Number of Trains	Arable & Mixed	Other
England	34,048	30,912
Wales	2,213	12,056
Scotland	8,062	7,961

<b>TOTAL</b>	95,252
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#### Total Spent on tests per year

£14,954,555
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### Non-Monetised Costs

#### Maintenance costs:

38. As there is too much uncertainty at this stage regarding the additional tractor and trailer maintenance costs associated with these proposals, they have not been included in the Monetised Costs section. However, we have tried to estimate a representative range for these costs.
39. It is worth noting that even though our “High” estimates of these costs is substantial (far outweighing the time saving benefits associated with this intervention); it is likely to be on over-estimate of the true costs for the following reason: the maintenance costs are calculated using the percentage failure rates cited in the HSE report referenced in Annex 4. These failure rates were obtained by sampling a number of tractors and trailers and assessing whether or not they would be passed or failed on certain items. However, it is likely that – if these proposals are implemented – then tractor drivers will ensure that obvious faults on their vehicles are repaired in advance of the test<sup>16</sup>. Secondly, it is reasonable to assume that if a major fault is found on the vehicle (and it is then repaired), when the vehicle is tested in the subsequent year it is much less likely to be faulted for the same item: the calculations below do not take this into account as we have no way of numerically accounting for these adjustments.
40. The method used to estimate this representative range is shown below, using the information contained in Annex 3.
- First – for both the “High” and “Low” scenarios – we calculate the total amount we expect drivers will spend repairing their trailers per year, with an assumption used to estimate the distribution of trailers failed per item.<sup>17</sup>
  - The relevant proportions of failure rates calculated above are then multiplied by the estimated costs associated with fixing the repairs.

<sup>14</sup> There is a question here about how enforcement would work: at present, if the authorities identify a loaded train which they believe might be exceeding the legal weight limit, they can pull the driver over and take them to a weighing bridge. This system could be maintained in future if these proposals take effect. However, this may be difficult to enforce in practice as it might be more challenging to identify which vehicles are marginally above the limit and which are below. Furthermore, the authorities would need a way of identifying which vehicles had passed the test and which ones hadn't. The consultation will ask consultees how they envisage these new limits would be enforced.

<sup>15</sup> We have used VOSA's HGV test fees from 1 April 2012 to estimate this figure:

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/193245/HGV\\_fees\\_poster\\_2012.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/193245/HGV_fees_poster_2012.pdf)

<sup>16</sup> Note that – even if we knew the cost of these repairs – they would *not* be included in the costs of this IA. This is because – if a tractor driver is knowingly driving a faulty vehicle – then they are breaking the law, (as they have a duty to maintain their vehicle).

<sup>17</sup> The assumption is the following: a trailer which is failed for an item with the lowest failure rate (i.e. “Number Plate Light”), is assumed to fail all other items on the list. Then – for the remaining trailers – a trailer which fails the test with the second lowest failure rate is assumed to also fail the test with the highest failure rate, (Tyre Condition / Pressure O/S)

- These figures are then scaled against the total number of trailers in questions.
- Finally, the calculations above are then repeated for tractors using the information in Table A16 (Annex 3). Our estimates of the “High” and “Low” annual maintenance costs are shown below:

### TOTAL REPAIR COSTS PER YEAR (2013 Prices)

#### HIGH ESTIMATE

Tractors	£431,594,165
Trailers	£71,309,794
<b>Total</b>	<b>£502,903,960</b>

#### LOW ESTIMATE

Tractors	£51,452,527
Trailers	£19,074,963
<b>Total</b>	<b>£70,527,490</b>

#### Implementation costs:

41. There would be the direct transition cost of implementation, as yet un-monetised, accruing to both government and the private sector, as a result of a weight limit changes. Government would incur some publicity costs and costs will also arise where literature and publications will need to be updated to reflect the new weight limits. We will seek views in the consultation regarding these costs.

#### **Non-monetised: Direction of Impact Uncertain**

#### Road Maintenance:

42. At present, we are unable to quantify the impact of this proposal on road maintenance costs. This is because whilst it is true that for a given axle configuration a heavier vehicle will be more damaging to the road than a less heavy one, this proposal is expected to reduce the number of trips made by tractor drivers, and the tractors themselves will be better maintained. As the net impact of these two effects is unknown (there is no standard unit of measurement for road damage caused by agricultural tractors), we cannot assess the direction of this impact.
43. We will seek to gather evidence of the impact of this proposal on road maintenance throughout the consultation.

#### Fuel Consumption:

44. At present, we are unable to quantify the impact of this proposal on fuel consumption. This is because – whilst increasing the weight limits would result in fewer trips for tractor drivers – it could be argued that these vehicles will use more fuel per mile as they are more heavily laden. As the net impact of these two effects is unknown, we cannot assess the direction of this impact. We will seek to gather evidence of the impact of this proposal on fuel costs throughout the consultation.

#### Fuel duty:

45. As we are unable to establish the impact on fuel consumption of this proposal, it is impossible to assert what the impact on fuel duty paid by tractor drivers will be. In any case, the net impact of the change can be treated as a transfer between tractor drivers and tax payers: a cost to one and a benefit to the other depending on whether fuel consumption increases or decreases.

#### Greenhouse Gas (GHG) and Air Quality impacts:

46. As GHG emissions and impacts on air quality are a function of fuel consumption – and we don't know the impact on fuel consumption – we are unable to determine how these items will be affected in response to the speed limit change. However, if we are able to quantify the effect on fuel consumption at final stage then we will be able to establish the impacts on GHGs and air quality.

#### Noise impacts:

47. It is possible that – as tractors become heavier – the amount of noise they make will increase, (as more energy is required to accelerate and they make harder landings when travelling over a bump in the road). The impact of this additional noise will depend upon the number of people living in areas closest to the roads which tractors travel on. However – whilst they may make more noise per trip – the main impact of this proposal is that tractors will make fewer trips. As the net impact of these two

effects is unknown, we cannot assess the direction of this impact. We will seek to gather evidence of the impact of this proposal on noise throughout the consultation.

### Road safety: Potential Benefits

48. It can be argued that maintaining the status quo where these vehicles are not tested poses a risk to safety through more time on the road, a poorer level of control, and potential damage to the smaller towing vehicle. Option 1 could enhance the safety of agricultural transport operations by incentivising the agricultural industry to maintain better standards of vehicle maintenance. Regular or periodic testing could result in a reduction in the frequency of accidents through better maintenance of tractors and trailers. 'A review of accidents involving agricultural and other types of working vehicle' found that "44% of tractor and trailer combinations were suffering from some kind of defect. There were some with multiple defects... 41% of these defects were considered to have contributed towards the accident."<sup>18</sup>
49. Furthermore, while we were not able to access quantitative data on stopping distances or safety features, we understand from industry that larger tractors tend to have more control and be more stable on the road due to being 6-cylinder vehicles and having longer chassis. The Heavy Vehicle Crash Injury Study (HVCIS) Project Report found that between July 1998 and December 2005 an agricultural vehicle overturned in 159 accidents resulting in 16 fatalities.<sup>19</sup> It can be argued that a proportion of these 159 accidents, and therefore a proportion of the fatalities, could have been prevented by testing previously untested vehicles, or prevented by the use of safer combinations such as those outlined in Option 1. However it is not possible to determine from the accident descriptions what proportion of deaths could have been avoided by these measures.
50. Between 2005 and 2012, the number of accidents involving all vehicles other than agricultural vehicles was 1,043,366. For the same accidents, five "Vehicle Defects"<sup>20</sup> were cited as a factor contributing to these accidents 17,972 times, (meaning that – if there is a maximum of one defect listed per accident – these defects contributed to 1.72% of all accidents).<sup>21</sup> The same percentage for agricultural tractors is 5.03%, suggesting that vehicle defects are disproportionately contributing to accidents involving agricultural tractors relative to other vehicles.
51. The fact that Option 1 means that these vehicles will spend less time on the road could also contribute to road safety benefits.
52. We welcome any sources of information on the effects of increased weights on accident rates and casualties in the consultation.

### Road safety: Potential Costs

53. While there is an argument that Option 1 could enhance the operation of tractors on public roads, there is also a risk that this option could have negative implications for road safety, as heavier loads could mean greater accident risk and increased severity of accidents (when they occur). As mentioned above, we welcome any sources of information on the effects of increased weights on accident rates and casualties in the consultation.

### **Costs and benefits of Option 2: Allow agricultural vehicle operators to volunteer for an annual vehicle test which if they passed would enable them to drive with increased maximum combination weights, (while keeping the same maximum trailer weight).**

54. For option 2, existing regulations would be changed to increase only the maximum combination weight (with the maximum trailer weight kept constant). All costs and benefits are exactly as outlined for option 1 above, except for the time savings.
55. The procedure to calculate the time savings accruing to tractor drivers through Option 2 is the same as with Option 1: the only difference is that the trailer constraint is kept the same in the do something scenario as in the do nothing scenario, (i.e. 18.29 tonnes). The results for the "High" and "Low" estimates of these time savings are shown below:

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<sup>18</sup> 'A Review of Accidents Involving Agricultural and other Types of Working Vehicle, 1996 – 2001' by TL Smith, (TRL) and R Gard (Richard Gard Associates), p. 36 (2002).

<sup>19</sup> The Heavy Vehicle Crash Injury Study (HVCIS) Project Report by Iain Knight, Phillip Massie & Tanya Smith (TRL) and Richard Gard (Richard Gard Associates), p.35.

<sup>20</sup> This list includes: "Tyres illegal, defective or under inflated", "Defective lights or indicators", "Defective brakes", "Defective steering or suspension" and "Defective or missing mirrors".

<sup>21</sup> DfT STATS 19

**Total Value of Time Savings (2013 Prices, Non-Discounted)**

**HIGH ESTIMATE**

**LOW ESTIMATE**

2014	£88,372,165	2014	£19,035,834
2015	£90,404,725	2015	£19,473,658
2016	£92,511,155	2016	£19,927,394
2017	£94,481,643	2017	£20,351,848
2018	£96,021,693	2018	£20,683,583
2019	£97,596,449	2019	£21,022,793
2020	£99,197,031	2020	£21,367,567
2021	£101,032,176	2021	£21,762,867
2022	£102,810,342	2022	£22,145,894
2023	£104,630,085	2023	£22,537,876

56. The time savings for Option 2 are smaller than for Option 1 because – in the do something scenario for Option 2 – the trailer weight is more likely to act as a binding constraint, (as it is kept constant).
57. As stated earlier, all other impacts for Option 2 are identical to those outlined above for Option 1. Therefore, they are not discussed further here.

**Direct costs and benefits to business calculations (following OITO methodology);**

58. As the monetised costs and benefits arising from this proposal accrue entirely to business and the proposal is clearly deregulatory, this measure is an ‘Out’ with an Equivalent Annual Net Cost to business of -£65.00m, (i.e. an annual net benefit to UK business of £65.00 million).<sup>22</sup>

**Impact Assessment examining the maximum speed limits of Agricultural Tractors**

59. As mentioned earlier, we are publishing a separate IA examining the speed limits of agricultural tractors alongside this one. As with this proposal, the core benefits associated with that intervention take the form of time savings for tractor drivers. We cannot know prior to consultation when or if these proposals will come into force. However – if they are both introduced – then the sum of the benefits listed in the Impact Assessments associated with the time savings will be an over-estimate of the actual total time savings to tractor drivers arising from the proposals. This is because – as in the calculations for each Impact Assessment it is assumed that the other proposal will not come into effect – the sum of the numbers doesn’t take into account that there are decreasing returns associated with the extra interventions. We will endeavour to accurately quantify the total size of the time savings at final stage if both proposals are to come into effect.

<sup>22</sup> This figure was obtained using the latest version of the Impact Assessment calculator (Available here: <https://www.gov.uk/government/publications/impact-assessment-calculator--3>)

# Specific Impact Tests

## Small and Micro Business Assessment (SMBA)

1. This proposal will affect small firms, but as it is beneficial to business it would be counter-productive to not apply these changes to them. We will ask in the consultation how the proposals impact on small firms.

## Competition Impact Test

2. The Office of Fair Trading (OFT) indicate that four questions should be considered to examine whether there would be significant impacts on competition. Would the proposal:
  - Directly limit the number or range of suppliers?
  - Indirectly limit the number or range of suppliers?
  - Limit the ability of suppliers to compete?
  - Reduce suppliers' incentives to compete vigorously?
3. We have considered all four questions in turn. The proposal would in no way, directly or indirectly, limit the number or range of suppliers for road transport of goods on tractor and tractor trailers. Neither would it limit the ability of suppliers to compete – in fact we consider that it would create a more level playing field between those who currently obey the law and those who carry more, than legally permitted. We also consider that there would be no reduction in suppliers' incentives to compete vigorously.
4. As the answer to each of the four questions is 'no', there is no need to complete a full competition assessment.

## Equalities Impact Test

5. Any negative impacts on equalities have been considered. These include negative impacts on race, sexual orientation, religious belief, transgender/transsexual persons, disability, gender, maternity, age, etc. The new weight limits would apply to all tractor drivers regardless of these factors, and we therefore believe that there are no impacts on equalities arising from these proposals.

## Carbon Impact Test

6. As mentioned earlier, we are unable to establish at this stage what the impact of this proposal will be on fuel consumption. We will seek to gather evidence on the impact of this proposal on fuel consumption during the consultation.



## Annex 1: List of assumptions used in the analysis

- The tonnage carried on a non-peak day in a peak month is calculated as follows: first, we calculate the number of trips required to carry a payload on a peak day. Second, we work out the number of trips required on a NON peak day to keep the "high" and "low" estimates of the weighted average number of trips per day in a peak month constant. Finally, we multiply this value by the do nothing payload constraint to get the non-peak daily payload. These figures are computed for "High" and "Low" estimates for both 16t and 12t trailers, giving us 4 separate payloads.
- The number of non-peak days in a peak month is equal to 30 minus the number of peak days in a peak month.
- The high and low estimates of the train weights provided by NFU are applied such that the high is assumed to carry trailer with 16t capacity (and consequently carry the heavier Tractor), and the lighter train is assumed to use the lighter tractors (and have a trailers with an average capacity of 12 tonnes).
- All Tractors travel 20mph on average (the current speed limit).
- Where aggregated data has been provided for certain inputs, these values are assumed to apply on a disaggregated level. For instance, figures showing average distance travelled have not been provided for England and Wales separately: so it has been assumed that these values are the same for both countries.
- The changes examined here do not apply to farms operating during non-peak months. Therefore the changes only matter during peak and non-peak DAYS in a peak month.
- Driver values of time grow in line through time with forecast changes in real gdp per capita.
- The number of farms does not vary through time. Also, all ratios are the same through time (e.g. the ratio of Arable and Mixed farms to 'other' farms in England is constant, as is the number of trailers with a capacity of 16t per farm).
- Nobody replaces their tractors or trailers in response to changes in legislation.
- Take up in England, Scotland and Wales by farm type is equal to the % of respondents who agreed in a recent NFU survey that the weight limits should be increased divided by two.
- There is 100% compliance with the law (all legal requirements are met by all participants at all times).
- For all farms in scope, there is one tractor for every trailer.
- Test costs are computed on the assumption that - if a vehicle fails - the faults are repaired on site. Therefore, every year a tractor driver only incurs the cost of the test once.
- Except for non-peak day payloads, where sensitivity testing is conducted and a range has not been provided the "high" and "low" estimates of the inputs are calculated as 20% above and below the values provided.
- The Best Estimate is equal to the average of the "high" and the "low" estimates of the policy.
- All travel time saved is spent working.
- The lower generalised cost of tractor travel does not make farmers substitute from moving produce using other modes into using tractors (i.e. tractor travel does not increase as a result of this proposal).

## Annex 2: Data used in the analysis

Key:

Centre-Point estimate

Range<sup>23</sup>

Table A1: Speed Limit (mph)

20
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Table A2: Average Trailer Capacity (tonnes)

		High	Low
Small Trailer	12	14.4	9.6
Large Trailer	16	19.2	12.8

Table A3: Average Tractors Weights (tonnes)

Used to carry a Small Trailer	6.9
Used to carry a Large Trailer	8.3

Table A4: Cost of Employing Farmer for 8 hour day

	High	Low
£103.82	£124.59	£83.06

Table A5: Peak Months for using Trailers

Jan	9.2%
Feb	8.8%
Mar	9.2%
Apr	11.2%
May	14.0%
Jun	20.0%
Jul	68.8%
Aug	87.2%
Sep	79.6%
Oct	41.2%
Nov	19.6%
Dec	14.0%
No Peaks	8.8%

Table A6: Average number of trips per day

		High	Low
PEAK 12 tonnes	3.5	4.2	2.8
PEAK 16 tonnes	6.4	7.68	5.12

<sup>23</sup> As stated in the Assumptions (Annex 1), except for non-peak day payloads where sensitivity testing is conducted and a range has not been provided, the "high" and "low" estimates of the inputs are calculated as 20% above and below the values provided.

**Table A7: Average Distance Travelled per Journey (miles)**

	Arable & Mixed	High	Low	Other	High	Low
PEAK 12 tonnes	6.6	7.92	5.28	7.3	8.76	5.84
	Arable & Mixed	High	Low	Other	High	Low
PEAK 16 tonnes	7.6	9.12	6.08	12.3	14.76	9.84

**Table A8: Average daily Payload moved on Peak Month in Peak day (tonnes) (per trailer)**

	High	Low
350 <sup>24</sup>	420	280

**Table A9: Number of 'peak' and 'non-peak' days in a peak month**

Peak	Non-Peak
2	28

**Table A10: Average Train Weights (Unladen Tractor and Trailer, tonnes)**

For a trailer with 12t capacity	11.5
For a trailer with 16t capacity	14.4

**Table A11: Proportions of Farm Types in different countries**

	Arable & Mixed	Other	Total Number of Farms
England	0.4	0.6	50000
	Arable & Mixed	Other	Total Number of Farms
Wales	0.1	0.9	13000
	Arable & Mixed	Other	Total Number of Farms
Scotland	0.38	0.62	12462

**Table A12: Take up estimates by Farm Type**

Arable & Mixed	High	Low	Other	High	Low
0.38	0.456	0.304	0.23	0.276	0.184

**Table A13: Average Number of Trailers per Farm**

Average number of Trailers with 12t capacity	2.9
Average number of Trailers with 16t capacity	2.7

**Table A14: Test Cost**

£157
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<sup>24</sup> This figure may seem high, especially when considered in relation to the maximum payloads listed above. However, stakeholders have indicated that there will be a few days during harvest time when farmers will work every hour of the day and into the night to move their produce.

## ANNEX 3: Figures used to calculate the representative range of potential vehicle maintenance costs

**Table A15: Items, Failure Rates and repair costs for Trailers**

Item	Failure Rate	Low Cost (£)	High Cost (£)
Tyre Condition / Pressure O/S	0.2535	400	1000
Tyre Condition / Pressure N/S	0.2394	400	1000
Number Plate Light	0.1549	20	40

**Table A16: Items, Failure Rates and repair costs for Tractors**

Item	Failure Rate	Low Cost (£)	High Cost (£)
Front Tyres & Pressures	0.256	500	800
Rear Tyres & Pressures	0.236	1200	2100
Performance, parking & service brakes	0.087	1000	20000
Headlights Dip / Main Beam	0.198	10	450
Rear Side Light	0.227	3	40
Rear Work Light	0.194	3	40
Wing Mirrors	0.306	10	40
Front Windscreen	0.008	300	500
Front Windscreen Wipers & Washers	0.438	15	30
Trailer Hook Wear & Lock	0.178	150	2500

# ANNEX 4: Details of HSE report on the mechanical condition of agricultural vehicles

## 'Evaluation of the Mechanical Condition of Agricultural Vehicles':

1. The Health and Safety Executive's (HSE) report 'Evaluation of the Mechanical Condition of Agricultural Vehicles'<sup>25</sup> was carried out to provide a meaningful sample of data on the mechanical condition of agricultural vehicles. The report highlighted the mechanical and safety issues for owners of vehicles which were not safe to be used either on road or off road.
2. Trained agricultural engineers examined 242 tractors and 71 agricultural trailed appliances. An inspection for a tractor took approximately 1 hour including a dynamic brake test when appropriate facilities were available on the farm.
3. The results were analysed to provide information on the scale and nature of defects found according to vehicle age, region, horsepower and main farm activity.<sup>26</sup>
4. Only 35 tractors were found without any significant mechanical faults. 166 (68.6%) tractors and 40 (56.3%) of the trailed appliances inspected did not meet highway requirements according to the Construction and Use Regulations 1986. Reasons for this were wide ranging from minor and easily correctible issues such as replacing light bulbs, to brake performance, tyre wear and pressures and vision through the front window. Among the highest cause of failures were driver vision items such as the windscreen wiper/washers (43.8%) and wing mirrors (30.6%).<sup>27</sup>
5. Substantial numbers of faults were also found in the trailer hitch items. These were prominent in the older tractors. Faults like these increase the risk of trailer detachment and also expose the driver to risk during tipping, (i.e. when significant weight transfer occurs and the trailer drawbar can be forced upwards and forwards through the rear of the cab.) Examiners recorded that just over 56% of trailed appliances were not roadworthy.
6. The report stated that feedback from customers who had their vehicles examined was mixed. Some thought it was a good idea and long over due, others thought it was more regulation and added extra pressure on to farmers.
7. The report did however receive feedback from farmers who wanted mechanical faults highlighting before a problem arose. The report authors believe that checks will mean small faults do not escalate and would be more cost-effective for customers in the long term. By carrying out effective maintenance, operators can have deficiencies identified that, if left unchecked, may lead to further damage or inefficiency. This would mean advantages to the owner such as increased resale values, reduced instances of vehicle breakdown, and a more comfortable environment for the operator resulting in higher performance.
8. The report concluded that "A substantial proportion of the tractor fleet does not meet legal requirements for highway use due to poor maintenance and lack of repair. There are issues relating to safety critical items, which should always be maintained to a high standard. In addition there were a number of faults detected of a purely mechanical nature that contribute to increased running costs and inefficiency."<sup>28</sup>
9. This conclusion echoes VOSA's 'Agricultural Vehicles: An Examiners Guide'. It says "The roadworthiness of this vehicle type is often found to be below the required standards...The vehicle category does not fall into the Operator Licensing scheme. The roadworthiness standards

<sup>25</sup> <http://www.hse.gov.uk/research/rrpdf/rr554.pdf> Prepared by BAGMA for the Health and Safety Executive, 2007.

<sup>26</sup> The inspections were carried out between April 2006 and November 2006.

<sup>27</sup> When considering the 'driver vision' faults in these vehicles, it can be argued that less emphasis should be placed on lighting defects; the 2002 report 'A Review of Accidents Involving Agricultural and other Types of Working Vehicle, 1996 – 2001' by TL Smith, (TRL) and R Gard (Richard Gard Associates) stated that "agricultural vehicles are working vehicles that are mainly used during working hours and seasonally throughout the year" (p.19). The report found that "large proportions of accidents occurred during late summer/autumn" (p. 8.) and that all but one of the accidents occurred between the hours of 5am and 10pm (and 84% between 8am and 8pm), (p. 9.) Lights are not required on a tractor which is only used on the road during the hours of daylight in conditions of good visibility.

<sup>28</sup> <http://www.hse.gov.uk/research/rrpdf/rr554.pdf>, p.13.

applied to the vehicles are the most basic...With this in mind the roadworthiness standards of vehicles as encountered at the roadside are often far below that expected of a HGV.”<sup>29</sup>

10. The 2002 report ‘A Review of Accidents Involving Agricultural and other Types of Working Vehicle, 1996 – 2001’ also states as part of its recommendations that, “Consideration should be given to how the roadworthiness of [vehicles falling under the category Other Motor Vehicles] could be improved, particularly agricultural vehicles...”<sup>30</sup> “Findings indicate that tractors are not as roadworthy as other vehicles.”<sup>31</sup>
11. The views of these reports support our proposals to require agricultural vehicle operators to volunteer for an annual test in order to be able to operate with higher weights.

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<sup>29</sup> <http://www.dft.gov.uk/vosa/repository/Agricultural%20Vehicles%20-%20An%20Examiners%20Guide.pdf>, 2008, p. 4.

<sup>30</sup> ‘A Review of Accidents Involving Agricultural and other Types of Working Vehicle, 1996 – 2001’ (2002), p. 38.

<sup>31</sup> *Ibid*, p. 12.