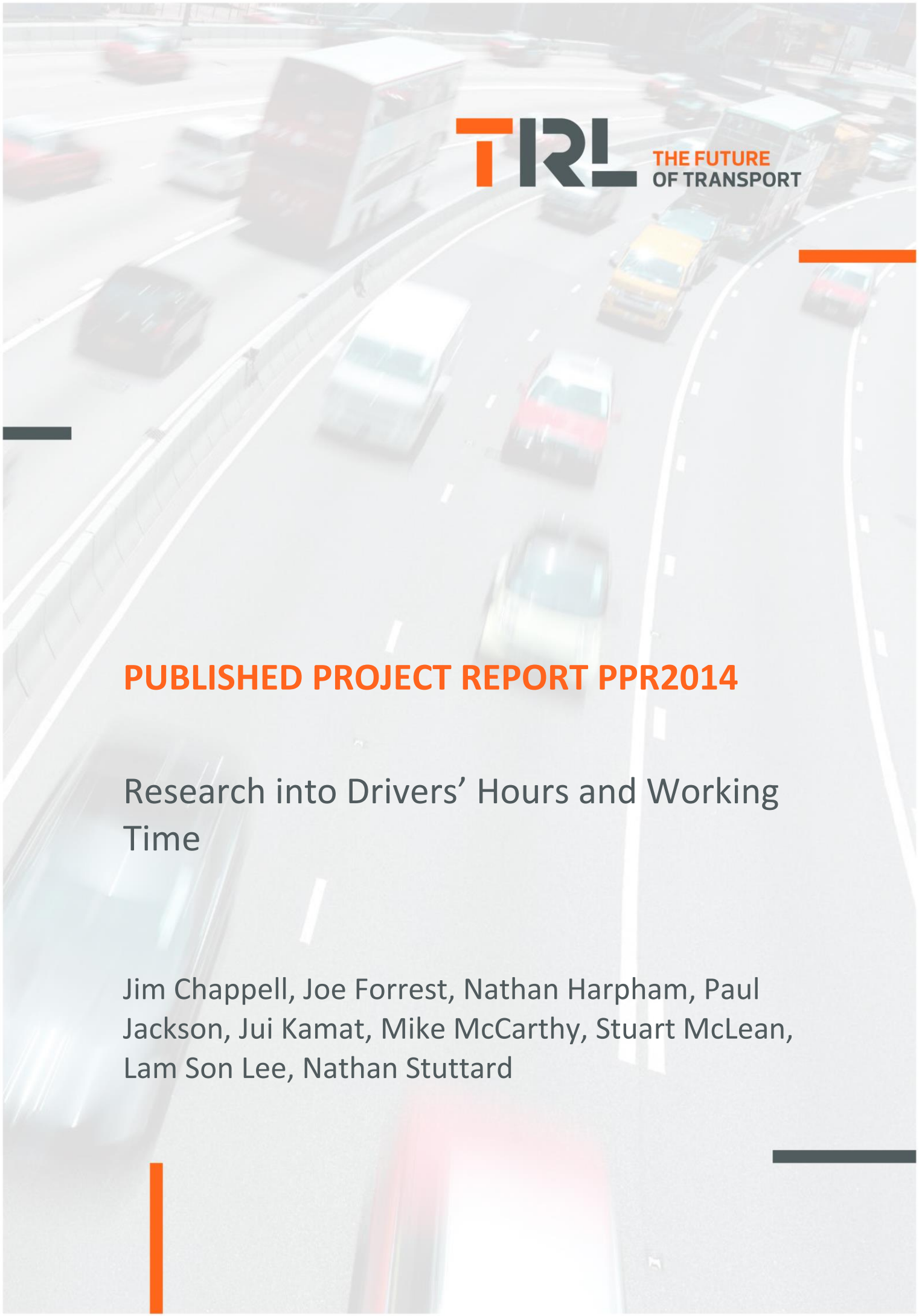

THE FUTURE OF TRANSPORT

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Research into Drivers' Hours and Working Time

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ABBREVIATIONS

C&U – Construction and Use Regulations
CPC – Certificate of Professional Competence
DfT – The Department for Transport
EU – European Union (Regulations that still apply to HGV drivers in the UK)
GB – Great Britain (England, Scotland and Wales)
HGV – Heavy Goods Vehicle (goods vehicles over 3.5tonnes)
POA – Period of Availability
RTWTR – Road Transport (Working Time) Regulations
STGO - Special Types General Orders
TRL – Transport Research Laboratory
UK – United Kingdom (England, Scotland, Wales and Northern Ireland)

Executive Summary

Background

The fatigue of drivers of Heavy Goods Vehicles (HGVs) is managed, from a regulatory perspective, through a combination of legislation which includes limits on the number of hours that a driver may drive, tasks a driver may undertake other than driving, and which imposes requirements for the duration and frequency of rest breaks. In exceptional circumstances, for example where time is critical and impacts will be severe if relaxation is not permitted, a temporary relaxation of driving time limits and/or rest drivers' hours regulations can be considered.

However, to date, there has been no co-ordinated research conducted to assess the benefits and disadvantages that have resulted from these relaxation periods, or the impact they have had on driver fatigue. Using a combination of research activities, this project aimed to address this weakness.

Project Objectives

The specific objectives of the research project were to understand:

- The impact that drivers' hours regulations have on cumulative driver fatigue.
- The impact that drivers' hours regulations have on cumulative driver fatigue during periods of regulation relaxation.
- The impact of drivers' hours regulations on road safety, driver welfare, and attractiveness of the occupation, including during periods of regulation relaxation.
- The perceived effectiveness of the current processes for industry requests for driver relaxations, including existing guidance, and how this may be adapted for future relaxations.

Tasks

The project addressed these research objectives through four distinct workstreams:

1. **A literature review** of existing research to find evidence on factors contributing to commercial freight vehicle driver fatigue.
2. **Quantitative analysis** that compared road traffic collisions and casualty data between periods of normal drivers' hours rules and the periods of relaxation from 2015 to 2021, to investigate the relationship between HGV incidents (on the GB Road Network) and periods of relaxations of the retained EU Rules.
3. **Qualitative interviews** which were conducted with a wide range of stakeholders to understand views on the current drivers' hours regulations, and the benefits and disbenefits on periods of relaxation.
4. **A review of the DfT's existing guidance** for road freight operators to request drivers' hours relaxations.

Five research questions were addressed.

What impact do drivers' hours regulations have on cumulative driver fatigue?

The predominant finding from the literature review was that there is a link between safety risk and driver fatigue which is only partially managed by the working and driving time regulations. Driver fatigue is still reported in driver surveys by those working under the current regulatory regime. Potential interventions include fatigue risk management plans, ensuring drivers take enough breaks and that there are enough parking places for HGV drivers.

Qualitative analysis indicated that both European Union (EU) drivers' hours regulations and Great Britain (GB) Domestic drivers' hours regulations were broadly viewed as effective at preventing drivers from working excessive hours unsafely, although differing views were provided on details such as maximum driving time and minimum rest periods (daily, weekly, and fortnightly).

What impact drivers' hours regulations have on cumulative driver fatigue during periods of regulation relaxation?

The literature review did not identify any studies which related to the impacts of relaxing driver hours regulations on fatigue or fatigue-related safety.

Little direct experience of excessive fatigue was reported by drivers when they had previously used the relaxations. However, most drivers and freight operators viewed the relaxations negatively. The underlying view was expressed that prolonged periods of relaxation would most likely lead to cumulative fatigue. Stakeholders also noted that relaxations could cause confusion to drivers as to how many hours they could work each day, and in extreme cases could open the door for drivers to be exploited.

Are the driver's hours regulations, for drivers for whom driving does not constitute their main work duties appropriate?

Qualitative research suggested that whilst the vehicles used by construction industries (e.g. volumetric concrete mixers, commercial waste collectors, scaffolders' vehicles) make them suitable for provisions within EU drivers' hour regulations, the nature of the driver's role could make them better aligned with the GB Domestic hours regulations. However, one stakeholder noted that in cases where drivers switch between different categories of vehicles, and where this means the driver being bound by GB Domestic hours regulation on some instances and EU drivers' hours' regulations on other instances, would be excessively confusing for the driver.

The impact of drivers' hours regulations on road safety, driver welfare, and attractiveness of the occupation, including during periods of regulation relaxation.

Due to the limited identified evidence on the effect of drivers' hours regulation on fatigue from the literature review, there was limited identified evidence on the effect of drivers' hours regulation on fatigue from the lit review. Improved enforcement of the existing legislation was a recommendation of one European Union study.

Quantitative analysis did not identify any evidence of a relationship between the relaxation periods and an increase in fatigue-related HGV road traffic collisions or casualties. Statistical evidence of an association between the relaxation periods and HGV collisions or casualties

was inconclusive due to uncertainties in how well the model accounted for the impacts of the Covid pandemic and differences in traffic levels.

Driver welfare was not specifically covered in the literature, but a greater level of fatigue is likely to have a negative impact on driver wellbeing, family relationships and overall health. A limited number of additional interventions that affect driver welfare were identified within the literature and qualitative research. These included the development of fatigue risk management plans as an addition or alternative to relying on prescriptive driver's hours limitations; more frequent and better use of rest breaks; and better provision of rest areas and facilities for commercial truck drivers.

What is the perceived effectiveness of the current processes for industry requests for driver relaxations, including existing guidance, and how this may be adapted for future relaxations?

Qualitative research suggested that regulatory relaxations were felt to be challenging to administer. HGV drivers' expressed concerns around welfare, particularly with respect to the potential for cumulative fatigue during periods of relaxation.

Stakeholders noted that if any future relaxations are implemented, they should aim to lift the weekly / fortnightly driving limits, rather than increase the daily driving limit, to minimise the likelihood of fatigue.

Regarding changes to DfT's existing guidance for the use of drivers' hours relaxations, the main conclusions of TRL were:

- It is recommended that the guidance be updated to be based on analysis and evidence in terms of the effect on road safety and cumulative fatigue. However, the quantitative evidence has shortfalls, and we have included the type of data that would be required for more robust statistical results in Appendix B.
- The evidence base is not strong enough to recommend limits on drivers' hours relaxations by duration (week, month, year) or sector.
- The evidence is not available to permit the level of granular decision making needed to recommend limits for either extra hours of driving or reductions in weekly rest.
- A risk-based approach should be taken to the safety risk to road users and the impact of not implementing a regulatory relaxation. A broad range of stakeholders including drivers' representatives should be formally consulted with, regarding limits in terms of increased driving and working time / reduced rest.

1 Introduction and Background

1.1 Introduction

The DfT has commissioned TRL to conduct research with the overarching aim to assess:

- The effectiveness of existing regulations on drivers' hours and working time in mitigating the road safety risk of fatigue-related incidents for HGV drivers.
- The impacts of relaxations to aspects of the drivers' hours rules on both drivers and haulage operators.
- The appropriateness of the rules for drivers of HGVs for whom driving does not constitute their main work duties, with a particular focus on volumetric concrete mixers and abnormal indivisible loads.

This research addressed the above aims, and consisted of the following tasks:

- A literature review of previous research into fatigue associated with drivers' hours.
- Analysis of HGV incident data on the road network, comparing periods of drivers' hours relaxation with periods of non-relaxation.
- qualitative research through interviews with drivers, operators, industry representatives and Government departments to gain their views on the current regulations and experiences of periods of relaxation.
- a review of the current regulations.
- focus groups to further discuss views on drivers' hours and periods of relaxation and to obtain views on sectors that might benefit from changing from EU Driver Hour Regulations to GB Domestic Regulations.

1.2 Definitions

1.2.1 Current Regulations

Drivers of most HGVs operating in the UK are covered by legally binding regulations that govern the amount of time that one is permitted to drive whilst at work, undertake other non-driving work, the number and regularity of breaks drivers are required to take during the working day (or shift), and the minimum amount of rest between working days or shifts. Some specific HGV drivers, such as those in the Armed Forces, are exempt from these regulations but do have their own regulations in place as a substitute. This research did not include such exemptions.

1.2.2 EU Drivers' Hours Regulations

The retained EU Regulation (EC) No 561/2006[1] ("EU Drivers' Hours Regulation") provides a common set of rules for maximum daily and fortnightly driving times, breaks from driving taken during the working day, and rest periods for drivers between shifts. As part of this regulation, record keeping is required via onboard tachographs, the vast majority of which are digital. These regulations are required by law to be followed by the majority of HGV drivers in the UK, with exemptions for specific vehicle types, in which case GB Domestic Regulations apply[2] .

1.2.3 GB Domestic Regulations

GB Domestic Rules[3] are more commonly used by drivers of light commercial vehicles and local service passenger carrying vehicles (which are out of scope for this project) but are occasionally used for HGVs such as door-to-door refuse collection vehicles. It is required that records of driving time are kept either by tachograph or manually.

1.2.4 The Road Transport (Working Time) Regulations 2005

The Road Transport (Working Time) Regulations 2005[4] ("RTWTR") place limits on the total working time (driving and other work that a driver undertakes) for drivers operating under either sets of regulation (EU and GB Domestic Regulations). These regulations (applicable in Great Britain to users of either EU or GB Domestic Regulations) present another level of management to safeguard HGV drivers from undertaking driving duties when they have been undertaking other work for significant periods of their shift. They specify a number of conditions to be observed, in particular when performing mixed duties (driving and loading/unloading for example). Under these circumstances the requirement to take a break from continuous driving takes precedence over taking a break from continuous work as the time is shorter.

1.2.5 Relationship and Interaction Between Regulations

Drivers are required to adhere to either the EU or GB Domestic regulations in conjunction with the RTWTR, as HGV drivers may undertake a variety of work-related duties. The vast majority of HGV drivers are required to follow EU regulations. Due to the legal requirement to adhere to a combination of the regulations above (i.e. either EU Drivers' Hour Regulations and RTWTR, or GB Domestic Regulations and RTWTR), it is required that road freight operators must have a qualified transport manager to manage HGVs and driver working and driving time records. Transport managers must hold one of a number of Operators' Certificates of Professional Competence (CPC), Goods Vehicle (Operator Licensing)

[1] EUR-Lex - 32006R0561 - EN - EUR-Lex (europa.eu)

[2] https://www.gov.uk/drivers-hours/eu-rules

[3] https://www.gov.uk/drivers-hours/gb-Domestic-rules

[4] https://www.legislation.gov.uk/uksi/2005/639/contents/made

Regulations and the Passenger Vehicle (Operator Licensing) Regulations set both the requirement of needing a transport manager, and the powers to enforce regulations/convict if transport managers do not follow regulations.

Table 1: Summary of Regulations Driving Time/Breaks/Rest Periods

Drivers' hours rules Regulation (EC)561/2006	**Drivers' hours rules GB Domestic**	**Working time rules Directive 2002/15/EC**
Driving 9 hours daily driving limit (can be increased to 10 hours twice a week) outside of periods of relaxation of regulations Maximum 56 hours weekly driving limit Maximum 90 hours fortnightly driving limit	**Driving** 10 hours maximum daily driving	**Working time (including driving)** Working time must not exceed average of 48 hours a week (no opt out) Maximum working time of 60 hours in one week (provided the 48-hour average is not exceeded over a 17-week reference period) Maximum working time of 10 hours if night work performed)
Breaks 45 minutes break after 4.5 hours driving A break can be split into two periods, the first being at least 15 minutes and the second at least 30 minutes (which must be completed after 4.5 hours driving)	**Breaks** 30 minutes break after 5.5 hours driving, if working day is less than 8.5 hours 45 minutes break after 7.75 hours driving, if working day is 8.5 hours or more	**Breaks** Cannot work for more than 6 hours without a break. A break should be at least 15 minutes long 30-minute break if working between 6 and 9 hours in total 45-minute break if working more than 9 hours in total

Drivers' hours rules Regulation (EC)561/2006	Drivers' hours rules GB Domestic	Working time rules Directive 2002/15/EC
Rest 11 hours regular daily rest, which can be reduced to 9 hours no more than three times a week 45 hours weekly rest, which can be reduced to 24 hours, provided at least one full rest is taken in any fortnight. There should be no more than six consecutive 24-hour periods between weekly rests	**Rest** 10 hours regular daily rest, which can be reduced to 8.5 hours up to 3 times a week At least one period of 24 hours rest every 2 weeks	**Rest** Same rest requirements as EU drivers' hours rules

1.3 Periods of Relaxation of Regulations

The EU Drivers' Hours Regulation includes powers to temporarily relax and introduce relaxations to driver hours (extending the permitted working hours in a week and reducing the requirements from breaks) in urgent cases for up to 30 days. Transport operators make the request for relaxations which is authorised by DfT.

There have been recent examples of periods of relaxation from the EU Drivers Hours Regulation, allowing HGV drivers to drive longer and reduce their rest periods between shifts. DfT has relaxed the rules on eight occasions between 2015 and 2022 totalling 196 days. Two recent high-profile occasions where relaxations have been used were:

- In March 2020 (for 21 days), the rules were relaxed in relation to deliveries of Liquid Petroleum Gas due to fuel shortages in strategic refineries in England and Wales.
- In 2020/21, unprecedented pressures on local and national supply chains resulted in the EU Drivers' Hours Regulation being relaxed on several occasions for the whole freight sector.

Although there have been recent periods of exemptions from the EU Drivers Hours Regulation, there has to date been no co-ordinated research conducted to determine whether these periods have resulted in additional incidents involving large goods vehicles on the GB Road Network, or to seek stakeholder views on the benefits and disadvantages resulting from relaxation periods.

1.4 Research Questions

The research addressed the following research questions:

- What impact do drivers' hours regulations have on cumulative driver fatigue?

- What impact do drivers' hours regulations have on cumulative driver fatigue during periods of regulation relaxation?
- Are the driver's hours regulations for drivers for whom driving does not constitute their main work duties, with a particular focus on volumetric concrete mixers and abnormal indivisible loads appropriate – this objective was widened to any industry sector using HGVs?
- What is the impact of drivers' hours regulations on road safety, driver welfare, and attractiveness of the occupation, including during periods of regulation relaxation?
- What are the perceived effectiveness of the current processes for industry requests for driver relaxations, including existing guidance, and how this may be adapted for future relaxations?

1.5 Project Workstreams

The project has addressed these research objectives through four distinct workstreams, which are set out below:

Literature Review
A literature review of existing research was conducted to find evidence on factors contributing to commercial driver fatigue. The purpose behind this activity was to update research evidence since the last major review on this issue was conducted, in 2011[5]. This consisted of a systematic literature search which identified 52 sources that assessed safety and fatigue risks published after 2011. After screening, 19 were identified as relevant. A lack of existing literature on the topic meant that much of the evidence reviewed was from outside of Europe. Examples were selected from countries where regulations are in place that broadly reflect those in the UK; namely, the EU, US, Canada, Australia, and India.
Quantitative Research
Quantitative analysis was conducted to investigate the relationship between HGV incidents (on the GB Road Network) and periods of relaxations of the retained EU Rules. This analysis involved statistical modelling to determine if the relationships were statistically significant. Data used was taken from STATS19, Road Traffic Data, and National Highways Fatals Data. Data on HGV-related incidents was baselined during periods of normal driving hours regulatory operation; and compared to data on HGV-related incidents during periods of relaxation from these regulations, taking into account the number of vehicles permitted to exceed normal drivers' hours. This also took into account traffic levels where available.

[5] Jackson, P., Hilditch, C., Holmes, A., Reed, N., Merat, N., & Smith, L. (2011). *Fatigue and road safety: a critical analysis of recent evidence.* Department for Transport.

Qualitative Research
The qualitative strand consisted of 38 interviews and 2 focus groups. This research strand explored stakeholder views on the current drivers' hours regulation, benefits and disbenefits of relaxation periods, how much the current regulations regulate against the chances of driver fatigue resulting in an incident, and the potential to expand the range of sectors which could be governed under GB Domestic drivers hours regulation. In total, 38 interviews were conducted. This includes three Government Departments and Agencies, five Industry Groups (including a Trade Union), 10 transport managers and 20 HGV drivers from a variety of industry sectors.
Potential Transfer from EU to GB Domestic Regulations
Two focus groups and an interview were conducted which included discussion to identify sectors that might benefit from transferring from EU Driver Hour Regulations to GB Domestic Regulations.
Review of Regulations
A review of the DfT's existing guidance for road freight operators to request drivers' hours relaxations was conducted. It reviewed in full both the existing guidance on drivers' hours relaxations and normal restrictions on drivers' hours and working time, as governed by both EU and GB regulations. The current full and simplified guidance documents were consulted as part of this. Concerns raised by external stakeholders such as unions and HGV drivers due to these extended relaxations, as recorded in responses to calls for evidence, consultations, and debates in the House of Lords, were also reviewed.

2 Literature Review

2.1 Literature Review Summary

The purpose of this literature review was to assess current literature in the public domain in respect to the current regulations on both driving time and working time for UK HGV drivers. To this end a systematic literature search was conducted which identified 52 sources that assessed road freight safety and fatigue risks published since 2012. These sources were screened to find articles that could be used to answer our research questions. After screening, 19 papers from the UK, Europe, North America, Australia and India were used to assess the research questions. The full process is described in detail in the below method section.

A summary of the findings, and the research questions these relate to, are shown below. Due to limited evidence being found, the findings below should be treated carefully, and future research may be required to confirm these findings due to some instances when results are derived from one study:

Research Question 1: How effective are the existing regulations on mitigating fatigue-related incidents for commercial freight vehicle drivers?

The review revealed that, in keeping with what is permitted by the current EU regulations, some drivers are working consecutive 60-hour weeks. Many drivers said they feel fatigued on duty, with 60% of the drivers in one study feeling fatigued whilst working, while in another study – in which drivers were asked to indicate the number of shifts during which they experienced severe sleepiness – drivers reported they felt severe sleepiness during 18% of these shifts. The literature review found that enforcement of the regulations is not always ensured, with some drivers working during breaks. Another report identified drivers having near misses or falling asleep due to fatigue whilst operating under the normal driver hour regulations.

Together this evidence suggests that the current EU Driver Hour regulations (or enforcement of these) may not be fully effective at mitigating fatigue and the risk of fatigue-related incidents for commercial freight vehicle drivers.

Research Question 2: What is the impact of relaxing drivers' hours and working time on the welfare of drivers, fatigue, and road safety?

Relaxations to drivers' hours regulations could lead to longer daily driving hours, periods of reduced rest and a greater time driving per week. The research suggests that all of these could result in increased fatigue-related road risk. Two studies showed that driving for a greater amount of time each day led to a greater chance of a collision, with the chance of a collision in the 11th driving hour being up to three times more likely than in the 1st hour of driving. A reduction in daily rest from 11 to 7 hours led to a decrease in driving skill and greater chance of fatigue, suggesting that reducing the daily rest requirement may further lead to a greater chance of a collision. Finally, a greater driving time per week led to a greater chance of fatigue.

These results suggest that relaxations to the drivers' hours regulations would lead to a greater chance of fatigue and a decreased level of road safety. Whilst driver welfare was not

specifically covered in the literature, a greater level of fatigue is likely to have a negative impact on driver wellbeing, family relationships and overall health.

Research Question 3: What additional interventions have been proposed to better manage commercial driver fatigue?

A few interventions were identified within the literature. One study showed that using a fatigue risk management plan increased sleep duration and reduced feelings of sleepiness. Another study found that having a greater number of longer (i.e. 21-30 minute) breaks also increased the chance of mitigating fatigue-related risks. Finally, an increase in the number (and decrease in the cost) of resting areas was identified to be a further intervention. The research showed that an increase in safe locations for drivers to park would likely lead to a better quality of sleep due to HGV drivers not being worried about the contents of their truck being stolen during the night.

Research Question 4: Does the evidence support the need for a change in legislation?

Due to the limited identified evidence on the effect of drivers' hours regulation on fatigue, the evidence did not support the need for a change in legislation. However, a suggestion was made in one study that working hours are capped at less than 60 hours a week to avoid drivers working consecutive 60-hour weeks. Another study noted that the ferry and train rest concession (whereby time spent on a ferry or train is counted as a daily rest period) was a potential aspect of legislation to review, as the time on-board was rarely restful.

2.2 Method

The first action was to develop a list of search terms that could be used to identify literature to include in the review. The search terms allowed for variations of a term to be covered in a single search (i.e. in the 3rd level of Table 2, the asterisk next to 'effect' generated search results for 'effect', 'effects', 'effecting', 'effective', and 'effectiveness'). The words in each level were used to find variants on a topic or theme in the database. For example, the 4th level checked to see if any of the papers within the database contained the search terms "Rules" OR "Regulation" (i.e. to ensure that only papers relating to regulations were included). Search terms were used sequentially to filter out irrelevant results. Note that not all of the search terms were used to find each paper, with one paper being found using the search term "Driving time" OR "hours of service" AND "regulation".

Table 2: Search terms for the literature review

1st Level		2nd Level		3rd Level		4th Level		5th Level
"Driv* time" **"Driv* hours"** **"Work* time"** **"Work* hours"** **"Driv* breaks"** **"hours"** **"hours of service"**	AND	**Fatigue** **Tired*** **Rest*** **Sleep*** **Alert*** **Drowsiness** **Recruitment** **Retention** **Safety** **Welfare** **Wellbeing** **Mental Health** **Occupational Health**	AND	**Effect*** **Impact*** **Risk*** **Hazard***	AND	**Rules** **Regulation**	AND	**HGV**

After generating the search terms (Table 1), they were entered systematically into the following databases to identify relevant literature:

- Accident Analysis and Prevention
- Health and Safety Executive (HSE)
- Transport Research International Documentation (TRID)
- ScienceDirect
- Google Scholar
- Bielefeld Academic Search Engine (BASE)

In order to ensure that only literature of sufficient relevance and quality was included in the review, specific inclusion criteria were developed and employed to assess the suitability of identified sources before the final review. These included scoring factors of relevance, quality, and timeliness (these inclusion criteria are shown in Table 3). Timeliness was applied to ensure that the research had been completed since 2012. References which scored 2 or more on each criterion were included as options for a full review. It should be noted that a review was made of each study selected and emphasis was placed on individual robustness and quality. This resulted in most weight being placed on Vitols and Voss (2021) and the Welsh Parliament Study (2021).

Table 3: Inclusion criteria for the literature review

	Score = 1	Score = 2	Score = 3
Relevance	Not relevant to the project research questions	Some indirect relevance to the objectives of the review	Directly relevant to the objectives of the review
Quality	Non-scientific article (e.g. online source, newspaper, or magazine article)	Evidence review / case study investigation	Randomised controlled trial / before-after comparison of real-world data
Timeliness	Published over 10 years ago	Published between 5-10 years ago	Published within the past 5 years

After initial searches, a literature log was created with each identified piece of literature occupying a row and relevant details (e.g. country, study purpose, study approach, study findings) being summarised in columns. This standardised approach allowed for a comprehensive summary of all relevant information to be collected in a single place and contributed to a more stream-lined approach to reporting. The inclusion criteria were then applied to identify which research to include for the full review.

The literature review found 52 papers, 14 of which were proposed by DfT. It was noted that many of the articles proposed by DfT were not on any of the databases that were used for the literature review; these were located using a direct search using the Google search engine. The search criteria was altered, in an iterative fashion, to focus on key words included in the titles of the papers proposed by the DFT. Although this process did not find any new papers, it meant that the literature review was thorough in applying key search terms and confirmed that any key papers had not been missed.

After applying the exclusion criteria and reading papers' abstracts for relevance, 18 articles were rejected due to the paper being published before 2012 or the paper being irrelevant (i.e. the paper focused on bus regulations, car drivers or suggested a proposed study rather than an actual study – these articles scored poorly on one of the three criteria as shown in Table 3). Six of the articles proposed by the DfT provided background and contextual information that has been incorporated into the introduction, but had no study conducted so these were not fully reviewed. Six papers were not reviewed due to not having enough time to conduct a full review (i.e. although the papers looked like they might have some value, other papers were viewed as more important to review within the time constraints of the project). Appendix A shows the full list of papers found for the literature review.

This left 22 papers to be fully reviewed for the project. After a full review, three papers were rejected due to duplication of reporting on information already held in other papers, or because the study merely noted the regulations and did not aim to assess their efficacy.

Originally, the intention had been to prioritise research conducted in the EU or the UK. However, many of the relevant research papers found were not from the EU or the UK and so the search was extended to include research from the US, Canada, Australia and India (see Table 4 for a summary of both the driving and working Hours of Service (HoS) regulations in these countries). These countries were chosen as it was felt that either the driver hour regulations (the US and India) or the culture (Australia and Canada) was similar enough to be of value to understanding the UK's regulations. Note, however, that the findings from these latter countries need to be taken with caution given the differences in regulation (in particular, Canada and Australia), road environment (all non-EU countries) and socio-economic characteristics and culture (particularly, India). Note that socio-economic characteristics are important as HGV drivers from poorer countries may work longer hours to achieve a living wage, particularly if the driver is the only wage earner in a family.

Table 4: Difference in HoS regulation between EU and other countries (in hours)

Country/Union	EU	US	Canada	Australia	India
Driving time between two rest periods	9-10	11	13	12[6]	8 -10
Duration of rest period	9-11	10	8	7	9
Driving time within 6 days	56	60	70	72	54
Working time within 6 days	60	60+	70+	72	54

The reviewing process consisted of appraising each piece of literature for the robustness and limitations of the methods it employed, the number and diversity of participants which took part, and performing analysis of the key findings and conclusion. The screening process is illustrated in Figure 1.

[6] If basic fatigue risk management is in place this increases to 14 (Australian driving hours)

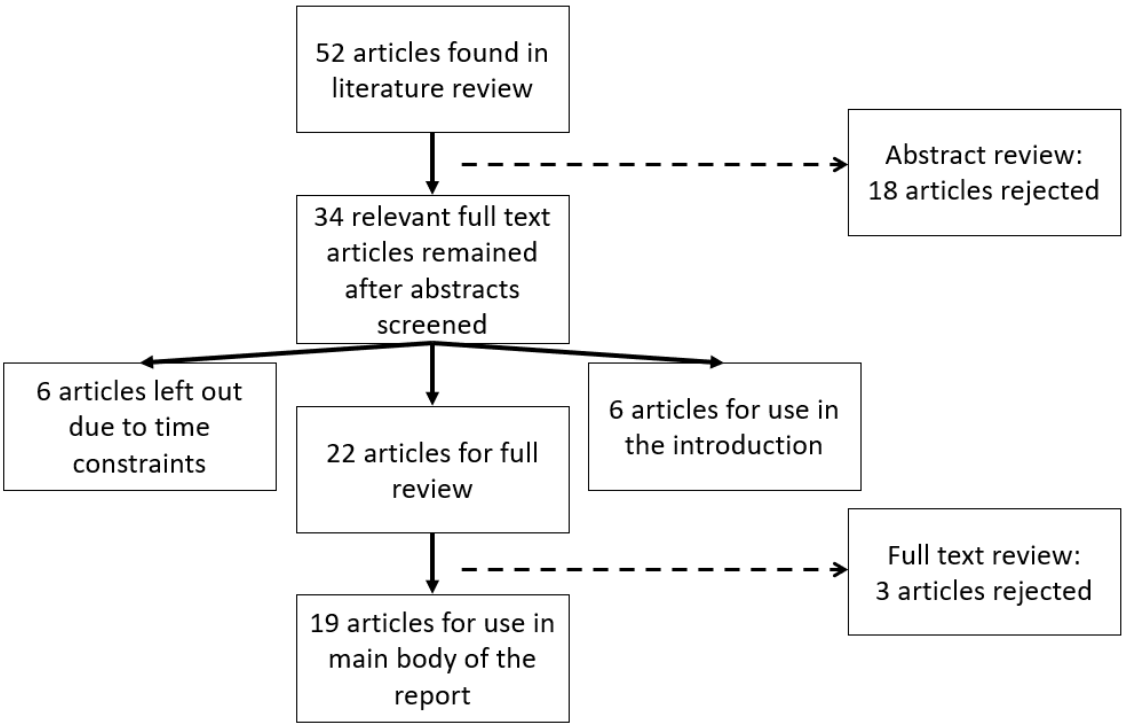

Figure 1: Diagrammatic view of screening process for literature review

The literature review revealed very few papers that directly investigated our research questions. Therefore, to address the questions, we examined the following:

- Research question 1 – How effective are the existing regulations on mitigating fatigue-related incidents for commercial freight vehicle drivers?
- Research question 2 – Have any papers assessed the effects of working for longer hours per day or per week, and reducing rest on HGV driver performance?
- Research question 3 – What additional interventions have been proposed to better manage commercial driver fatigue?
- Research question 4 – Does the evidence support the need for a change in legislation? (The answer to this question was based on the previous 3 questions).

2.3 Findings

Findings are set out below for each of the research questions. Note that for each research question a set of bullet points denotes the high level findings. This is then supplemented by detailed descriptions of the studies found.

2.3.1 RQ1 – How effective are the existing regulations on mitigating fatigue-related incidents for commercial freight vehicle drivers?

The studies reviewed used a combination of methods, including surveying drivers at truck stops, asking drivers to complete surveys at regular periods during their normal day and

conducting interviews with drivers. The effectiveness of the regulations is examined from the perspective of sleepiness, fatigue, and the level of enforcement used.

The main findings are as follows:

- According to one European study, under the current regulations, some drivers are working 60-hour weeks.
- The same study showed that 60% of HGV drivers regularly feel fatigued whilst driving.
- Enforcement of the regulations is not always ensured, with some drivers working longer than hours of service limits or working during breaks.
- Some drivers report having near misses or falling asleep whilst driving due to fatigue.

2.3.2 European Findings (Including GB)

2.3.2.1 Current experiences during regulations

Although all EU and UK drivers are subject to either the EU or GB HoS (GB only) regulations, the literature review found that the regulations may have room for improvement, and therefore could be more effective. For example, although the EU regulations state that a driver must have a minimum of nine hours rest between shifts, they do not state what a driver should be doing during this time (Mansfield & Kryger, 2015). One study evaluating the experiences of over 2,000 European HGV drivers noted that many HGV drivers have a daily commute of up to two hours (Vitols & Voss, 2021) and therefore some HGV drivers questioned only slept for five hours during a 9-hour rest period, suggesting that a large proportion of rest time may be spent not resting (i.e. it includes commuting to and from work).

In addition, another study assessing the experiences of 16 Welsh HGV drivers found that some of the drivers surveyed worked consecutive 60-hour weeks (Welsh Parliament, 2021). Due to the 48-hour working time requirement being averaged across a 17-week reference period, many drivers were then asked not to work towards the end of the 17-week period to ensure that they complied with the 48-hour weekly average. Note that only one study showed this finding, and therefore the review did not show whether this practice has increased or decreased either before or after 2021.

Research also identified in the review suggested that some drivers are encouraged by their employers to perform working tasks during their break times, meaning that these periods are not as effective as they should have been (Vitols & Voss, 2021; Welsh Parliament, 2021).

Overall, this evidence suggests that the EU driving hours and UK working hours regulations may not be fully effective at mitigating fatigue (which is partially due to a lack of enforcement) if they can still lead to periods of intense work, sleep deprivation and lack of restful break periods.

2.3.2.2 *Effects of regulations on fatigue*

Vitols and Voss (2021) surveyed 2,159 HGV drivers and found that 60% of drivers surveyed, who adhere to the EU driving hours regulations[7], reported regularly feeling tired whilst driving. Moreover, 30% of the same sample of drivers said they had fallen asleep whilst driving at least once in the previous 12 months and 26% had almost been in a collision due to fatigue.

In a similar study (Welsh Parliament, 2021) where HGV drivers were interviewed about their experiences of driving, the drivers noted that working according to the GB Domestic drivers' hour regulations of 60 hours for consecutive weeks was physically draining and resulted in fatigue and stress. These working conditions were viewed as leading to an inability to both recruit and retain new HGV drivers.

Finally, a study of 52 Long-Haul HGV drivers from Finland asked drivers operating under the EU regulations to rate their alertness or sleepiness using the Karolinska Sleepiness Scale[8] (Onninen, et al., 2021). The results showed that severe sleepiness (KSS scores $\geq$7) was prevalent in 18% of all shifts.

These studies demonstrate that driver fatigue occurs within the limits of the current EU and GB drivers' hours regulations, suggesting that they may not be fully effective at eliminating fatigue and fatigue-related incidents.

2.3.3 Non-European findings

Although not directly related to the UK or European context, articles from the USA and India were included as these showed the effectiveness of similar regulations at mitigating fatigue and the risk of safety incidents.

2.3.3.1 *Working time and regulations*

The findings from the USA and India showed that, under these countries' current HoS regulations, many drivers are in infringement of the rules by working longer than the regulations allow. The reasons for these infringements are not clear. In India, drivers were found to work for an average of 13.5 hours a day (Mahajan et al., 2019) with many in infringement of the daily HoS rule of 12 hours' work. In one US study, a survey of 260 HGV drivers carried out at a truck stop (Hege, et al., 2015) found that 43% of US HGV drivers surveyed were noted as being in violation of the daily working hour regulations at least sometimes, and this combined with fluctuating work hours led to a decrease in self-reported sleep quality. Notably, this is not the only study to report a high level of non-compliance, as Chen et al (2015) found that 37% of 1,265 US drivers surveyed at a truck stop also reported

[7] Although the HGV drivers were not explicitly noted as all being subject to EU regulations, they were all from EU nations, suggesting that a large number of the drivers surveyed would have been subject to EU regulations.

[8]Link to the Karolinska sleepiness scale here: https://www.med.upenn.edu/cbti/assets/user-content/documents/Karolinska%20Sleepiness%20Scale%20(KSS)%20Chapter.pdf

exceeding HoS regulations (although it was not noted what aspect was violated). It is important to note however that the working patterns of truck drivers within the US may be different from the UK (i.e. US drivers complete far more miles a week and are away from home 85% of the time, albeit on larger and less congested roads), so this evidence should be treated with caution.

2.3.3.2 Fatigue-related incidents

More than half of US drivers (53%) in one study reported having a near miss or collision due to sleepiness (Hege, et al., 2015). Similarly, Chen et al. (2015) found that 24% of 1,263 US drivers (the total sample) surveyed had had a near miss within their last week and 24% of the total sample continued despite fatigue, poor weather, or heavy traffic due to tight delivery schedules. In a study of 453 Indian long-haul truck drivers, Mahajan et al (2019) found that 90 of these drivers (c.20%) reported having fallen asleep while driving in the last 5 years. Of these 90 drivers, 18% reported crossing the centre line of the road while driving asleep and 49% reported running off the road. Although these samples only assessed the effects of the US and Indian regulations, these findings demonstrate that fatigue has a negative effect on safety and the importance of compliance with drivers' hours regulation.

2.4 RQ2 – What is the impact of relaxing drivers' hours and working time on the welfare of drivers, fatigue, and road safety?

- Increased driving time has been shown to lead to a greater level of fatigue amongst drivers and level of fatigue-related incidents.
- Having a decreased rest period has been shown to lead to worse driver performance.

With regards to research question two, the literature review did not reveal any studies which related to the impacts of relaxing drivers' hours regulations on welfare, fatigue or fatigue-related safety. For this reason, the research therefore looked for any papers which investigated the effect of working long daily hours, or taking short rest periods, as any relaxation of the regulations may lead to longer hours and shorter periods of rest. Note that the evidence was not split into UK and EU and non-EU evidence due to a lack of relevant research found.

2.4.1 Longer working hours

A number of studies investigated the effect of increasing the number of hours that drivers can work for each day on the amount of sleep, fatigue and fatigue-related incidents. In a study of 260 US HGV drivers at a truck stop, Hege et al (2015) found that HGV drivers "always" working for a greater number of hours than the regulations allowed (which would be the case under a EU's drivers' hours relaxation, although not unlimited) reported reduced sleep quality compared to drivers who "sometimes" worked longer than the regulations allowed. Similarly, in their study of over 2,000 European drivers, Vitols and Voss (2021) found that a greater amount of driving is associated with more fatigue; whilst 48% of

drivers[9] who drove for 31-40 hours per week reported being affected by fatigue, this increased to 69% of drivers who drove for more than 50 hours per week. This evidence suggests that both driving and working more per day and per week (which would occur under a relaxation of the EU drivers' hours regulations) could lead to reduced shorter sleep duration, and a greater likelihood of fatigue whilst driving.

Evidence also showed that working for a greater number of hours also leads to a greater likelihood of a collision. For instance, Chen and Xie (2014) modelled both crash and non-crash data from US HGV drivers at each hour of driving to assess when the greatest likelihood of a collision is. The authors found that starting from the 11th driving hour, the odds of a collision became significantly higher and was more than three times greater than the odds of a collision in the first driving hour for US drivers.

Moreover, a US study (Soccolich et al., 2013) investigated the effects of both working and driving for long periods on the chance of a serious collision event in 96 US drivers. Supporting the results of Chen and Xie (2014), the authors also found that the likelihood of a collision in the 11th hour was significantly more likely than in the first and second hour of a drive. This evidence suggests that driving for a greater period of time (i.e. working for 11 hours rather than a maximum of 10, which could occur under relaxation of the EU's drivers' hours regulations) may lead to a greater likelihood and chance of collisions.

2.4.2 Shorter rest breaks

A relaxation of the EU drivers' hour regulations could also result in a reduction in the length of time a driver is required to take for major rest breaks. Although no studies were identified that specifically looked at the effect of reducing rest breaks, research from Australia provides some useful evidence of the possible impact of such a change. Cori et al (2021) examined whether extending the major rest break between shifts for Australian HGV drivers from 7 hours (Australian industry standard) to 11 hours, improves drivers' sleep, alertness, and driving performance. To this end, the authors asked 13 HGV drivers to complete their normal 13-hour driving shift, and then the participants entered a dimly lit bedroom for either 7 or 11 hours where they could sleep, eat or watch TV. 11 participants completed both the 7- and 11-hour conditions (on separate days), 1 completed only the 7-hour and 1 completed only the 11-hour condition. The next day participants were asked to complete a driving task in a driving simulator and then to complete a driving task whilst ocular tests designed to measure fatigue (such as the driver's blink rate and average distance between the upper and lower eyelids) were captured. The study found that participants who completed the 11-hour rest break condition had a greater quantity of sleep than participants who completed the 7-hour rest break condition (6.59 hours vs 5.07 hours respectively), and also reported fewer feelings of tiredness during the driving task. During the driving task after the 7 or 11-hour rest period, almost all of the ocular and vehicle metrics were improved for participants when they were in the 11-hour condition.

Although proposed rest periods have previously only been reduced from 11 to 9 (rather than 7) hours during relaxations to the EU driving hour regulations, the results from this

[9] The drivers were subject to EU regulations (i.e. where the maximum they could drive in a week was 56 hours)

study suggest that reducing the amount of rest time provided to drivers could reduce the amount of sleep obtained, with a consequent negative impact on driver fatigue (and therefore wellbeing) and also safety level. However, it is important to consider the limitations of the study when interpreting its findings. For instance, the impact of *consecutive* 7-hour rest breaks was not considered as participants only rested on the one night that they were with the researchers. The authors mentioned that many of the HGV drivers in the 7-hour rest break condition "prepared themselves by having greater sleep" in the week preceding the trial, which may have diminished some of the effects of the shorter rest period. It is possible therefore that the effect of having shorter rest periods over consecutive weeks (without a possibility of sleeping for longer in the preceding week) may exacerbate fatigue and impact negatively on safety.

Overall, the limited evidence suggests that working more hours each week and having shorter rest periods (due to a relaxation of the HoS regulations) could lead to a decrease in sleep quality and duration. This may also lead to a decrease in driving performance, and an increased likelihood of a collision.

2.5 RQ3 – What additional interventions have been proposed to better manage commercial driver fatigue?

- Interventions included using a fatigue risk management plan, having more breaks and better resting areas for drivers.

A number of interventions (other than the number of hours driving or working) were noted that could be used to ensure that drivers are at a lower risk of suffering from fatigue and fatigue-related incidents.

2.5.1 Using a fatigue risk management plan

Within the UK, the Health and Safety at Work Act 1974 requires employers to reduce risks to their employees so far as is reasonably practicable, which includes risks from staff fatigue. Furthermore, the Management of Health and Safety at Work Act (1999) requires employers to assess risks arising from their operations and to put in place effective arrangements for the planning, organisation, control, monitoring and review of these controls.

In keeping with this risk-based approach, one intervention that could help to reduce the level of fatigue-related incidents is to give operators the option to implement a fatigue risk management plan. This approach has been implemented by the Australian government, with operators given the flexibility of either complying with standard hours requirements or being permitted to implement a more flexible system depending on formal accreditation to a basic or advanced fatigue management plan (National Heavy Vehicle Regulator, 2022).

Creating a fatigue risk management plan could help to both reduce the incidence of fatigue and mitigate the effects of fatigue in the event that an individual experiences such impairment (see IPIECA[10]; International Association of Oil and Gas Producers, 2019). Fatigue

[10] Formerly the International Petroleum Industry Environmental Conservation Association

risk management schemes involve first identifying the contributors to fatigue associated with the organisation's operational practices, and then establishing policies, procedures, and data collection to monitor, measure and manage the fatigue risk associated with these contributory factors. Although fatigue risk management schemes are required by law in the aviation industry (and in the rail industry for safety-critical workers), they are not currently required for UK haulage operators.

One study of HGV drivers across 26 EU countries, including the UK, was unable to identify any road transport operators currently using these schemes to ensure that their drivers are not fatigued (Vitols & Voss, 2021). However, 76% of 2,159 HGV drivers in the same study believed that increasing their employers' awareness of the effects of fatigue (which could be achieved by a fatigue risk management plan) would be a useful countermeasure to prevent themselves from becoming regularly fatigued. Although an Australian study suggested that it may be challenging to implement a fatigue risk management plan when resources are less available, such as in the haulage industry (Sprajcer et al., 2021), the authors suggested that if such a plan were to be implemented it is likely that they would provide many safety benefits. This is a relatively new initiative, hence why no studies have examined this in a HGV setting.

Although not related to HGVs, one study assessed the effects of a fatigue risk management plan for firefighters, by asking 17 fire stations to create a fatigue risk management plan, and compared these with another 17 stations (that did not develop a plan) as a control group. The study found that self-reported sleep quality was significantly increased for the fatigue risk management participants compared to the control group. Participants in the fatigue risk management group also reported a greater duration of sleep, and fewer feelings of sleepiness (Barger et al., 2017), with this evidence suggesting that fatigue risk management plans could lead to a decrease in fatigue.

2.5.2 Taking breaks

Whilst there is a legal requirement for HGV drivers to take regular breaks, little guidance exists on how best to use breaks to have the most positive impact on fatigue and alertness. Moreover, as shown above, some studies have shown that although HGV drivers in the EU are meant to take regular breaks, they are sometimes encouraged to perform work activities during these periods (e.g. Mansfield & Kryger, 2015; Welsh Parliament, 2021), meaning that the driver is unable to fully rest. Out of 2,159 European HGV drivers surveyed in one study 67% reported that having too few breaks was an important risk factor that led to fatigue (Vitols & Voss, 2021). Hence, another intervention that could help to reduce fatigue-related incidents would be to ensure that HGV drivers are taking their regular breaks and are using these to rest.

The value of rest breaks is shown by two studies from North and South America. A US study found that taking a break of at least 30 minutes has been shown to reduce the likelihood of a serious collision event by between 28-50% compared to the one-hour window immediately preceding the break, with breaks associated with the largest reduction in the likelihood of a serious collision event (Soccolich et al., 2013). Furthermore, a survey of 387 HGV drivers in Colombia (which assessed the number of breaks and chance of a collision) showed that having two or more breaks for HGV drivers has been shown to reduce the

likelihood of a crash (Torregroza-Vargas, Bocarejo, & Ramos-Bonilla, 2014). Another study found an 83% reduction in crashes for US HGV drivers taking two rest breaks compared to none during a seven to eleven-hour drive (Chen & Xie, 2014).

It is important to note however, that whilst asking drivers to take more breaks can reduce the likelihood of a driver being involved in a collision, there may come a point where having too many breaks might stop decreasing the likelihood of a collision. For example, although having two breaks decreased the likelihood of a crash by 83% during an 11-hour drive (Chen & Xie, 2014), having a third break during that same time period did not further significantly reduce the likelihood of a crash. This study also noted that drivers taking breaks between 20-30 minutes were over 2.5 times less likely than those taking breaks of 10-20 minutes to have a collision, suggesting that shorter breaks may not be fully effective at reducing fatigue (Torregroza-Vargas, Bocarejo, & Ramos-Bonilla, 2014). Alternatively, having many longer breaks could increase the total length of time that a driver is working, which has the potential to increase safety risks during both working and non-working hours (e.g. fatigue risks whilst commuting to and from work).

2.5.3 Increasing the number and safety of stopping facilities

Research suggests that increasing the number of parking spaces for HGVs, and ensuring that parking is free of cost would be a valuable and popular intervention. A report by the Department for Transport (2022) found that within 5 kilometres of the strategic road network there are roughly 4,473 fewer overnight HGV parking spaces (16,761 spaces) than the number of HGVs parked overnight (21,234). This is exacerbated by the cost of some of these parking spaces, with overnight parking costing up to £35 for one night (Welsh Parliament, 2021; Department for Transport, 2022).

The research suggests that some employers put pressure on their drivers not to pay for overnight parking, so some HGV drivers have to either pay for parking themselves or resort to stopping their vehicle in unsuitable areas like lay-bys (Welsh Parliament, 2021). Many of the 15 drivers interviewed reported getting a far worse quality of sleep when parking in such a location due to fears that their HGV will be subject to crime. If there were a greater number of overnight parking and suitable resting locations (and these locations were free to use) then drivers would be likely to receive a better quality of sleep and rest due to less fears as to being subject to crime. This would likely lead to a reduction in fatigue, and therefore a potential reduction in fatigue-related incidents. (Welsh Parliament, 2021). These concerns were echoed by the drivers surveyed across 26 European countries by Vitols and Voss (2021), where 93% of HGV drivers suggested that more resting locations were important to counter fatigue. This was viewed as the most important countermeasure by drivers.

2.6 RQ4 – Does the evidence support the need for a change in legislation?

- The evidence did not support the need for a change in legislation.

The literature review conducted has not provided robust evidence supporting changes to legislation in either driving hours or working time but has highlighted that driver fatigue is reported by drivers even when they are fully compliant with existing EU and GB regulation.

Two studies (based in Wales and the EU) reviewed suggested a change in regulation or improvements in the way in which they are enforced.

Welsh study: At present, HGV drivers are allowed to work for up to 60 hours a week according to GB Domestic drivers' hours regulations, as long as their average time working over a 17-26 week period is capped at 48 hours. The 16 HGV drivers in the Welsh Parliament study suggested that the GB Domestic drivers' hours regulations should be capped at far fewer hours than 60 a week, to avoid employers being permitted to schedule drivers for consecutive 60-hour weeks (Welsh Parliament, 2021).

EU Study: In their study of driver fatigue as experienced by HGV drivers across Europe, Vitols and Voss (2021) also suggested that the EU drivers' hours regulations should be more consistently enforced by more roadside checks (i.e. to ensure that drivers do not work in their rest periods). Furthermore, they suggested tougher penalties for those that are found to break the rules and to remove the ferry/train rest concession (where time spent on a ferry or train is counted as a rest period).

However, it should be noted that the evidence for both suggested changes in regulation was noted by one just study in each case. Although a potential mitigation for these issues caused would be to take legislative action to change the permissibility of their use, more evidence on the scale and impact of these issues is first required.

2.7 Conclusions

Our key findings from the literature review conducted are:

- The current EU and GB regulations, based on prescriptive limits on driving and working hours, can cause driving conditions which lead to fatigue for some HGV drivers even where they are compliant with the regulations. As a result, compliant drivers may still be involved in fatigue-related near misses and collisions.
- No information was found on the consequences of relaxing the regulations. However, longer shift periods and shorter daily rest periods (as would likely happen during a period of relaxation) would likely lead to a decreased amount of sleep for the drivers, leading to a greater chance of fatigue and a greater risk of a collision when working for longer hours.
- Potential mitigations include:
    - Implementing a fatigue risk management plan to actively manage fatigue instead of, or alongside, a time-based specification.
    - Preventing drivers working consecutive 60-hour weeks as is currently allowed under GB drivers' hour regulations.
    - Ensuring that drivers do not work during breaks.

- Providing a greater number of parking locations (especially free parking, and overnight locations where drivers are able to obtain quality sleep, as well as washing and eating facilities).

2.8 Limitations

This review found few studies that assessed the effectiveness of HoS regulations, and even fewer that assessed these regulations in the EU or the UK. Given the lack of studies, findings from the USA, Colombia, Australia, Canada, and India were used to inform our understanding. Although the HoS regulations are similar to the HoS from the EU and UK in these countries, differences in the regulations, road infrastructure, driving conditions and environment mean that the findings may not be fully representative of the situation experienced by HGV drivers within the EU and UK.

Finally, the findings of this review should be interpreted with caution, particularly around the cause-and-effect relationship of drivers' hours and safety incidents. Driving for an extended period of time may increase the chance of a collision through increased fatigue, however, it is also possible that an increase in driving time could lead to an increase in collisions due to more time on the road rather than fatigue, and therefore greater exposure to potential risks. In addition, consideration needs to be given to the fact that many of the studies contained a small sample size and were based on driver recall.

3 Quantitative Analysis

3.1 Key findings

Using a combination of key data sources (STATS19[11], road traffic statistics[12] and National Highways Fatals[13] data) collisions on the GB road network involving HGVs from 2015 to 2021 have been analysed to give the following key findings:

There is inconclusive evidence of an association between periods when regulations were relaxed and collisions involving HGVs.

- There is no clear evidence of a different proportion of collisions involving HGVs in the relaxation periods compared with the same periods (of normal driver hour regulatory operation) in adjacent years.
- Statistical modelling indicates a small decrease in the number of daily collisions involving HGVs (13% decrease) during the relaxations relative to non-relaxation periods, when accounting for other factors, such as the general downwards trend in collision numbers. However, these results should be treated as inconclusive due to uncertainties as to how well the impacts of the COVID pandemic are captured in the model and the fact that traffic was only accounted for using proxy variables (for example 'month' and 'holiday period').

There is inconclusive evidence of an association between the relaxation periods and KSIs (Killed and Seriously Injured casualties) in collisions involving HGVs.

- Statistical modelling indicates a small decrease in the number of daily KSIs in collisions involving HGVs (8% decrease) during the relaxations relative to non-relaxation periods, when accounting for other factors, such as the general downwards trend in collision numbers. However, the uncertainty in this estimate is high and, combined with the modelling limitations linked to the COVID period and a lack of traffic data, these results are insufficient to conclude a relationship between the relaxations and KSIs.

There is inconclusive evidence of an association between fatigue-related collisions involving HGVs and the relaxation periods.

- There are some notable increases in the proportion of fatigue related collisions in the relaxation periods from 2015 to 2018 compared with adjacent years, however the number of collisions in the sample is small making this conclusion less reliable.

[11] STATS19 is a database of reported injury collisions on the GB road network – see section 3.3.1

[12] Road traffic statistics from the Department for Transport provides estimates of the vehicle miles travelled in GB each year – see section 3.3.2

[13] The National Highways Fatals database captures in-depth collision data on the events of fatal collisions on the Strategic Road Network – see section 3.3.3

- There are minimal differences comparing the longer relaxation periods in 2020 and 2021 with non-relaxation periods in 2019 and, when accounting for traffic changes, there is a relative decrease in the proportion of fatigue-related HGV collisions during the relaxations. However, as above the impacts of the COVID pandemic on this result are uncertain, making this result unreliable.

There is no evidence from the National Highways Fatals data of any association between the relaxations and fatal collisions involving a fatigued HGV driver.

- Only one fatal collision was identified between 2015 and 2019 for which being over the drivers' hours limit appears to have been a significant contributor. This was not during a relaxation period.

3.2 Quantitative Analysis Methodology

The aim of this analysis was to understand the relationship between the relaxations of the EU HGV drivers' hours rules and road safety (in terms of traffic collisions and casualties), and to consider any other evidence from collision data that might inform future relaxation decision making.

To achieve this, road traffic collisions and casualties were compared between periods of normal drivers' hours rules and the periods of relaxation from 2015 to 2021 (see Table 5) by analysing relevant existing datasets (see section 3.3 below). As 2022 collision data was not available at the time of writing, the last relaxation period listed is analysed up to 31st December 2021.

Table 5: Periods of relaxation of the EU drivers' hours rules between 2015 and 2021

Relaxation start date	Relaxation end date	Length of relaxation (days)
30th July 2015	30th August 2015	32
8th December 2015	6th January 2016	30
12th January 2016	15th February 2016	35
21st August 2017	17th September 2017	28
9th February 2018	22nd February 2018	14
8th March 2020	31st May 2020	85
23rd December 2020	31st March 2021	99
12th July 2021	23rd January 2022	196

3.3 Data sources

The data sources used in this analysis are outlined below:

3.3.1 STATS19

STATS19[14] is a database of reported injury collisions on the GB road network. This data is collected by police at the roadside or when reported to them by a member of the public. Once collected, records are sent to the DfT for overall compilation after further validation from local authorities. STATS19 data has been analysed from 2015 to 2021 to determine differences between the relaxation periods and non-relaxation periods in terms of the number and proportion of collisions involving HGVs and those collisions with a fatigue contributory factor (a proxy measure for the impact of drivers' hours changes).

For each collision recorded in STATS19, up to six factors are recorded which the police believe contributed to the collision. Not all collisions are attended by the police and have contributory factors recorded. Therefore, when considering fatigue-related collisions (as an absolute number or proportion of collisions), only the subset of collisions where the police were in attendance and at least one contributory factor was recorded are included in the sample. This applies to Figure 9, Figure 10, Figure 11 and Figure 12 later in this section.

It is important to note that, as contributory factors are recorded by the police after the collision, there is some subjectivity in the data and some factors may not be recorded because these cannot be assigned without in-depth collision investigation.

3.3.2 Road traffic statistics

Road traffic statistics from the DfT provide estimates of the vehicle miles travelled in GB each year by vehicle type. The following estimates have been used for this analysis, to accompany the collision and casualty data in STATS19:

- Quarterly traffic[15] on the road network by vehicle type.
- 5-year-average traffic[16] (relative to the overall average traffic for this entire 5-year period) by month from 2015 to 2019 by vehicle type.
- Monthly traffic[17] in 2020 and 2021 relative to the same months in 2019 by vehicle type.

Absolute traffic data was only available at a quarterly level. As a proxy for monthly traffic by vehicle type, relative monthly traffic was used to cover the 2015 to 2021 period. The data sources were split as a 2015 to 2019 average and then 2020 and 2021 baselined to 2019, as in the published DfT tables.

[14] See here for further guidance on the STATS19 data: https://www.gov.uk/government/publications/stats19-forms-and-guidance.

[15] Data available here: Quarterly traffic estimates (TRA25) - GOV.UK (www.gov.uk). More granular (e.g. monthly or daily) absolute traffic on the network was not available.

[16] Data available from file TRA0305 here: Road traffic statistics (TRA) - GOV.UK (www.gov.uk).

[17] Data available from file TRA0305 here: Road traffic statistics (TRA) - GOV.UK (www.gov.uk).

3.3.3 National Highways Fatals data

The National Highways Fatals database captures in-depth collision data on the events of fatal collisions on the Strategic Road Network[18] (SRN). Data from 2015-19 was analysed to extract detailed case study assessments on fatigue related collisions and casualties. For a detailed description of the data analysed from this source see Appendix B.

3.4 Key elements of the approach

To ensure comparisons between relaxation periods and non-relaxation periods are as robust as possible, the overall trend in collision numbers over time has been accounted for. As the total number of collisions (and HGV collisions) on the network has been reducing yearly over time, potentially due to factors such as improvements in the safety features of vehicles and road infrastructure, the **proportion** of certain collision types (for example, the proportion of collisions that involved an HGV) is a more useful metric than the absolute number of these collisions. This proportion is considered alongside the proportion of HGV vehicle types on the road, to determine whether an increase in the proportion of HGVs involved in accidents is due to a proportional increase in HGVs on the road relative to other road users, or is due to another factor (for example, relaxation in the drivers' hours rules). Figure 2 shows the number of collisions involving an HGV on the road network from 2015 to 2021. As well as a general downwards trend, there is variation within each year by quarter, with quarter 2 (April to June) typically having a lower number of collisions.

[18] The Strategic Road Network is the 4,300 miles of motorways and major A roads in England that are managed by National Highways

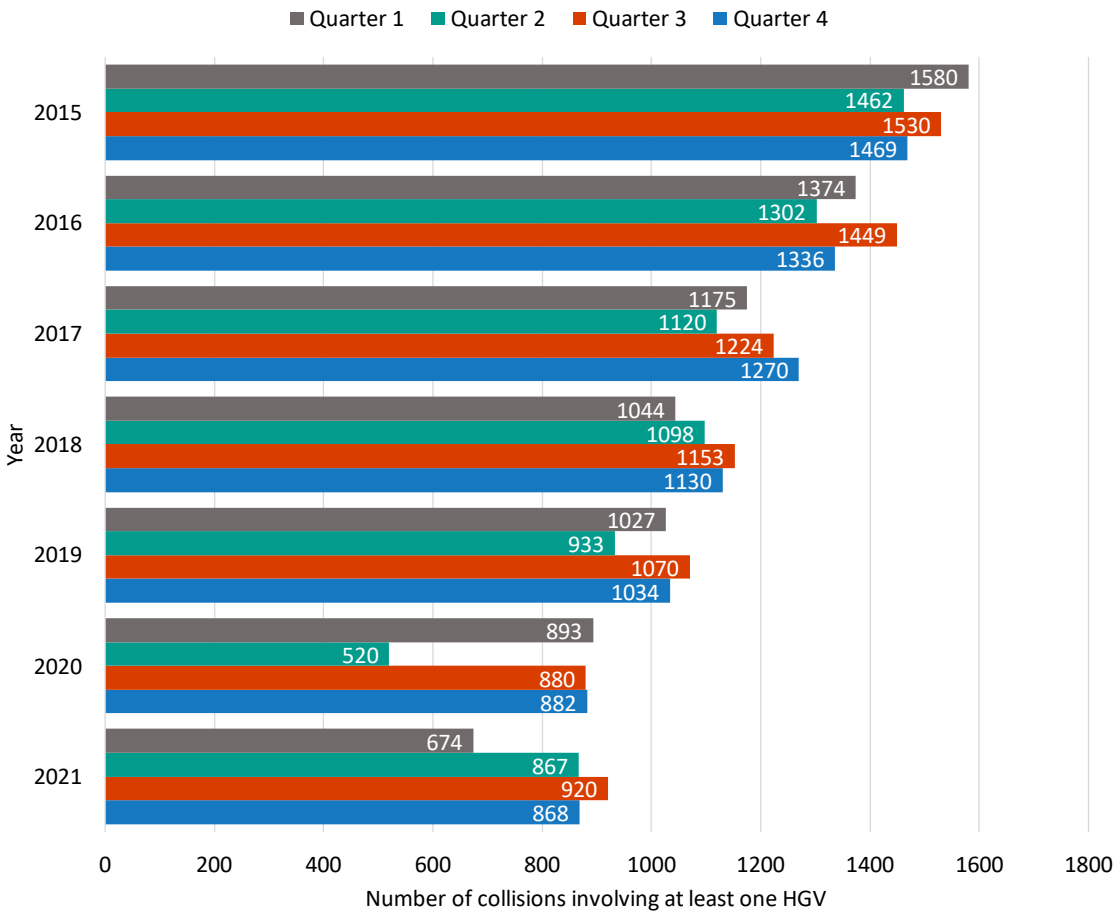

Figure 2: **Number of collisions on the road network involving at least one HGV, from 2015 to 2021, by quarter (data source: STATS19)**

Variation in traffic levels has been considered using road traffic statistics. There is noticeable seasonal variation in both HGV traffic and total traffic on the network (for example, traffic levels are higher in June than January). Figure 3 illustrates this monthly variation, presenting the average daily traffic flow each month from 2015 to 2019 (as a percentage of the average traffic over the 5-year period, which is marked with a grey dotted line), for HGVs and all motor vehicles. Furthermore, during the COVID pandemic traffic decreased substantially and the proportion of HGV traffic on the roads increased. Figure 4 shows the average daily traffic flow for each month in 2020 and 2021 relative to the same months in 2019 (represented by the dotted line at 100). To account for traffic variation in the analysis, collision rates are presented, and the relaxation periods are compared with the same period in adjacent years, where traffic levels are typically very similar.

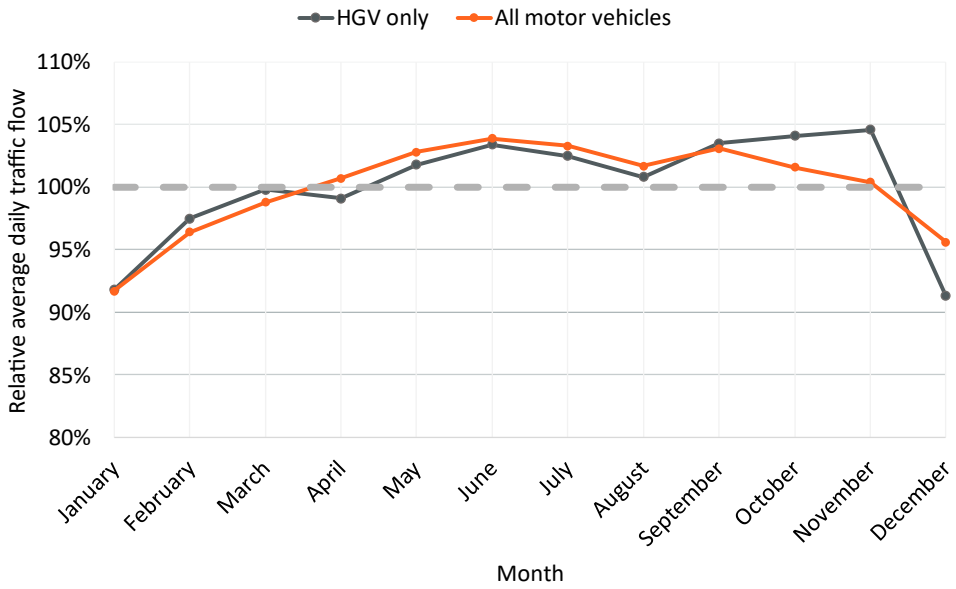

Figure 3: Average daily traffic flow by month, from 2015 to 2019, relative to the average for the entire period (data source: DfT Road Traffic Statistics)

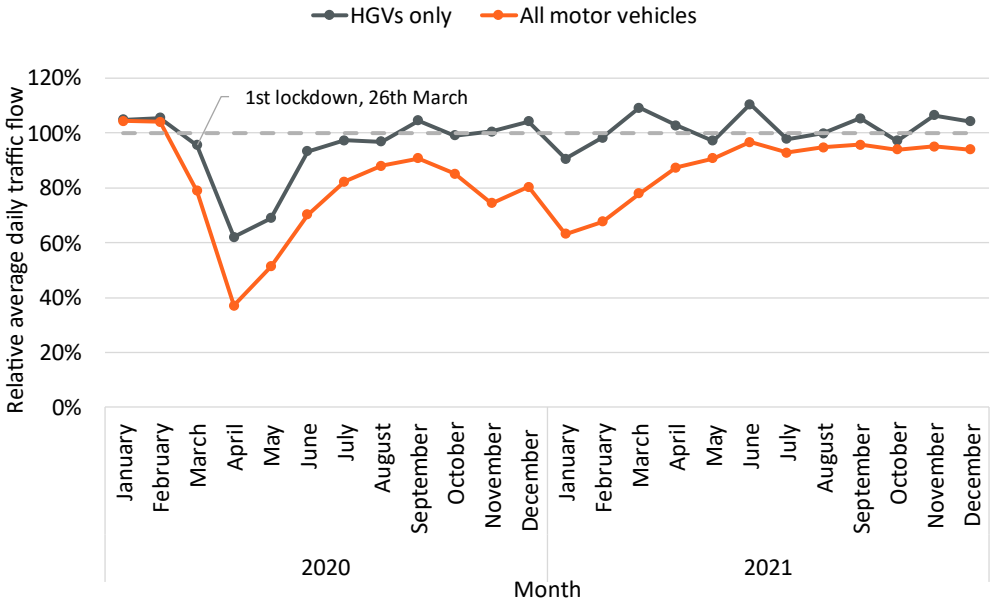

Figure 4: Average daily traffic flow by month, 2020 and 2021, relative to the same months in 2019 (data source: DfT Road Traffic Statistics)

Two statistical models were built to compare the relaxation periods and periods of normal hours' rules. These models aim to isolate the association between the relaxations and collisions by accounting for other factors such as seasonal variation in traffic levels and the general downwards trend in collision numbers.

3.5 Limitations of the analysis

- Whilst STATS19 is a substantial and informative source on road traffic accidents in GB, there are some limitations which should be accounted for when interpreting the data. It is known that casualties are underreported as there is no obligation to report them[19]. This analysis assumes that the rate of underreporting has not changed since 2015, which may not be the case, if for example, there have been changes in the level of resourcing for police forces. There may also be some subjectivity in the contributory factors recorded by the police after the collision, as these are based on initial assessment rather than in depth investigation.
- As monthly or daily absolute traffic data was not available, traffic rates are only calculated at the quarterly level. At a more granular level, relative monthly traffic data provides useful context and the same months of the year have been compared to account for differences in seasonal traffic levels.
- Noting that whilst this analysis provides evidence of differences between periods of relaxation and periods of normal drivers' hours rules, it does not aim to imply or explain causation. Where possible, the impact of other factors such as seasonal and temporal variations are accounted for so that the association between the relaxations and collisions can be isolated. However, this analysis does not answer the question of why collision rates or proportions might be different during the relaxations.
- There are a number of external factors that may impact the collision levels, some of which have been directly accounted for in the analysis, such as seasonality differences (using proportions) and traffic levels (using rates). However, it is more difficult to account for other factors. For example, the relaxation of the hours rules usually taking place when there is a shortage of drivers, and hence during relaxation periods there may be fewer HGVs on the road with each HGV driver doing more driving than normal. These factors are discussed alongside the findings where relevant.

[19] See: https://www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2021/reported-road-casualties-great-britain-annual-report-2021

3.6 Results

3.6.1 Collisions involving HGVs

Year	Quarter	Number of relaxation days within quarter	Rate of collisions involving at least one HGV (number of collisions per hundred billion vehicle miles travelled by HGVs)	Proportion of all collisions that involved at least one HGV	Proportion of HGV traffic on the network
2015	Quarter 1	0	3.95	5.26%	5.32%
	Qtr2	0	3.48	4.78%	5.16%
	Qtr3	31	3.56	4.71%	5.17%
	Qtr4	23	3.42	4.53%	5.33%
2016	Qtr1	40	3.44	4.67%	5.12%
	Qtr2	0	3.03	4.47%	5.16%
	Qtr3	0	3.29	4.85%	5.18%
	Qtr4	0	3.11	4.41%	5.28%
2017	Qtr1	0	2.87	4.41%	5.20%
	Qtr2	0	2.60	4.27%	5.06%
	Qtr3	27	2.78	4.53%	5.13%
	Qtr4	0	2.95	4.59%	5.17%
2018	Qtr1	13	2.55	4.53%	5.24%
	Qtr2	0	2.49	4.41%	5.12%
	Qtr3	0	2.62	4.66%	5.10%
	Qtr4	0	2.63	4.44%	5.13%
2019	Qtr1	0	2.50	5.73%	5.11%
	Qtr2	0	2.12	4.99%	5.08%
	Qtr3	0	2.43	5.54%	5.01%
	Qtr4	0	2.40	5.21%	5.13%
2020	Qtr1	23	2.13	5.72%	5.50%
	Qtr2	60	1.58	5.37%	7.19%
	Qtr3	0	2.00	5.42%	5.76%
	Qtr4	8	2.05	5.69%	6.40%
2021	Qtr1	89	1.64	6.14%	7.32%
	Qtr2	0	1.93	5.01%	5.67%
	Qtr3	0	2.04	5.14%	5.42%
	Qtr4	89	1.97	4.84%	5.56%

Table 6: Rate and proportion of collisions involving an HGV, from 2015 to 2021, by quarter (data sources: STATS19 and road traffic statistics)

Table 6 shows the variation in the rate and proportion of collisions involving HGVs on the GB road network from 2015 to 2021 by quarter. The collision rate is calculated by dividing the absolute number of collisions involving an HGV by the total miles travelled by HGVs on the GB road network. The rate is presented per hundred billion vehicle miles travelled for ease of comparison. The proportion of collisions involving an HGV is calculated as a percentage of all collisions involving a motor vehicle and the proportion of HGV traffic on the network is calculated as a percentage of all motor vehicle traffic. The number of days in each quarter with relaxed drivers' hours rules is also presented.

The rate of collisions was not noticeably different comparing the quarters containing relaxation periods with other quarters between 2015 to 2019. The rate was lowest during quarter 2 of 2020 and quarter 1 of 2021 which were mostly or entirely under relaxed hours rules. However, this was during periods of COVID lockdown where there was a lower proportion of non-HGV traffic on the roads, which presents different driving conditions for HGVs. Absolute traffic for all motor vehicles was also at least 10% lower for each quarter from quarter 2 of 2020 to quarter 4 of 2021, relative to quarter 1 of 2020. It should be noted that as the collision rate is decreasing gradually over time, caution should be taken when comparing quarters that are two or more years apart. Statistical analysis (see section 3.6.3) aims to isolate the impact of the relaxations accounting for this downwards trend.

There are four quarters (Q1, Q3 and Q4 of 2019, and Q1 of 2020) where the proportion of collisions involving an HGV was greater than the proportion of HGV traffic on the road network. One of these contains days with relaxed rules (Q1, 2020) and the rest were during quarters without relaxed rules in 2019. Overall, comparing quarters does not provide clear evidence of differences in collision rates between the quarters with relaxation days and those without.

The proportion of HGV traffic on the road network was consistently between 5% and 5.33% from 2015 to 2019. Thus, when making comparisons between relaxation periods and the same time periods in adjacent years, traffic proportions were likely to be similar for HGVs. The proportion of HGV traffic increased during 2020 and 2021, which needs to be considered when making comparisons between the relaxation periods in these years and pre-2020.

Figure 5 below compares the proportion of collisions involving an HGV in the relaxation periods and the same time periods in adjacent years (which were not relaxation periods), for the relaxation periods between 2015 and 2019. 2020 and 2021 have been considered separately due to the impact of the COVID pandemic on (proportional) traffic levels. As previously discussed, comparing between same time periods in adjacent years goes some way to reduce the impact of other factors such as variation in weather conditions or seasonal traffic levels.

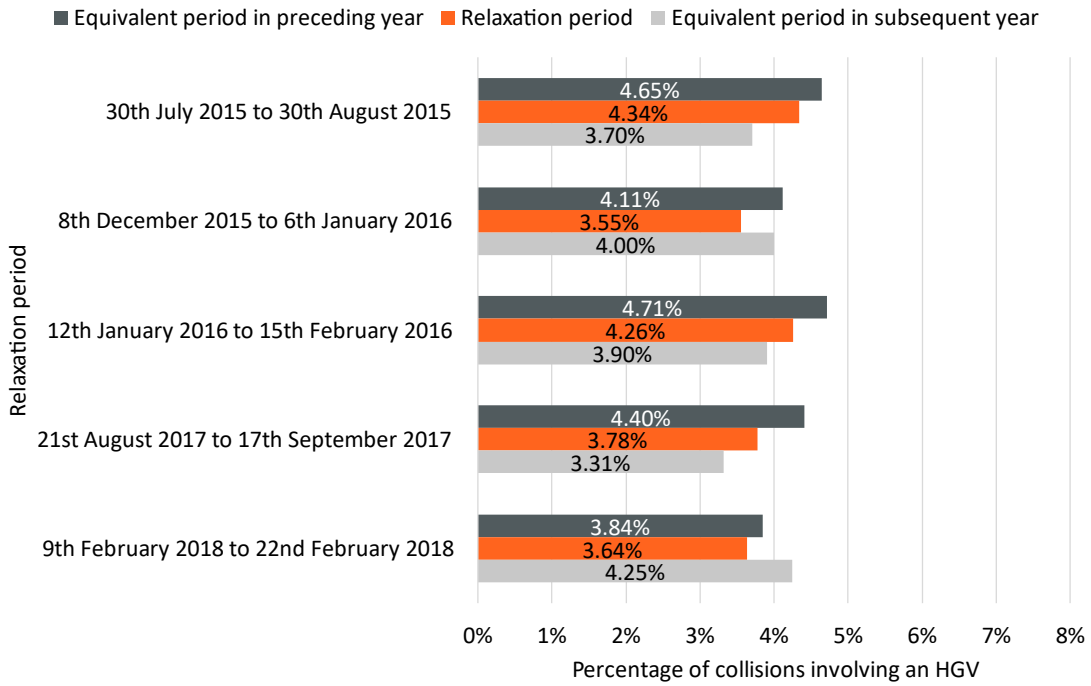

Figure 5: Proportion of collisions involving an HGV in the relaxation periods and same periods in adjacent years (data source: STATS19)

For all of the relaxation periods the proportion of collisions involving an HGV is lower in the relaxation year than the previous year. However, there is a general downwards trend yearly and for three of the five relaxation periods the subsequent year had a lower proportion of collisions. Overall, there is no clear evidence that the proportion of HGV collisions was different during the relaxation periods in comparison to non-relaxation periods.

Figure 6 shows the proportion of collisions involving an HGV in the 2020 and 2021 relaxation periods compared with the same period (a non-relaxation period) starting in 2019. To make robust comparisons with these relaxation periods, it is important to consider variation in traffic levels as overall traffic decreased and the proportion of HGV traffic increased during the COVID pandemic. Therefore, as context, Table 7 presents the average change in traffic levels between the months of the relaxation periods (calculated as the average of the percentage changes for each month in the period relative to the same month in 2019).

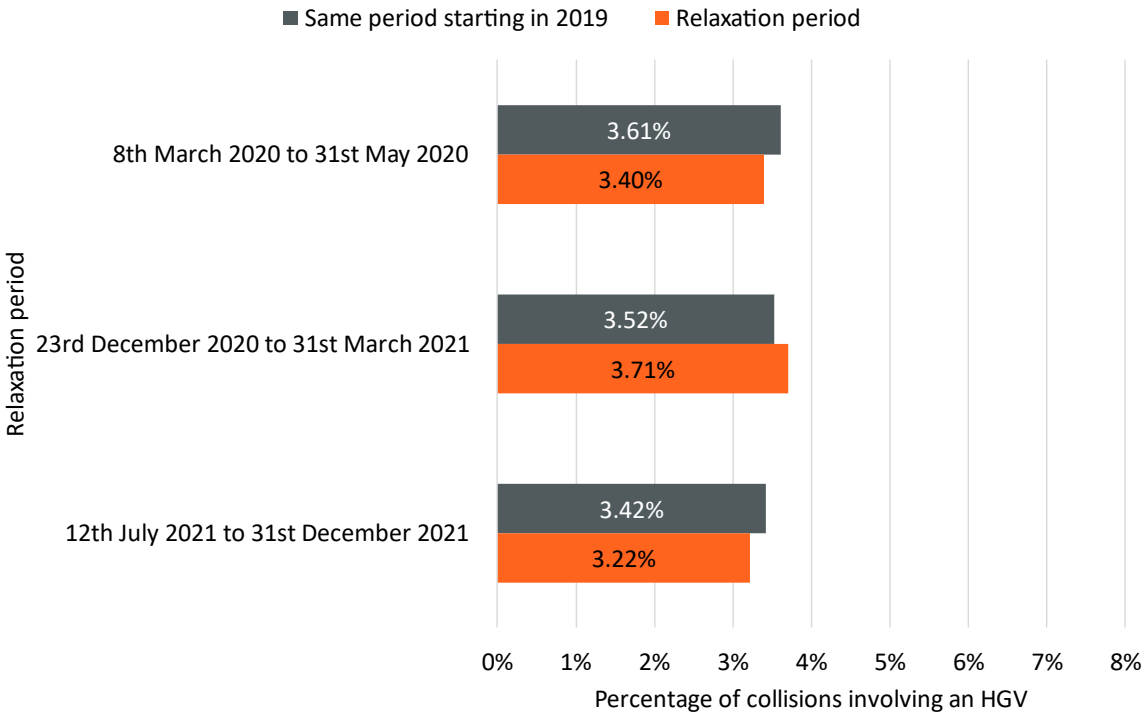

Figure 6: Proportion of collisions involving an HGV in the relaxation periods and same period starting in 2019 (data source: STATS19)

Table 7: Average monthly change in traffic levels relative to the same month in the equivalent period starting in 2019 with no driver hour regulation relaxation in effect (data source: road traffic statistics)

Relaxation Period	Average monthly change in HGV absolute traffic levels	Average monthly change in all motor vehicle absolute traffic levels
March 2020 to May 2020	-24.5%	-44.2%
December 2020 to March 2021	-0.4%	-23.8%
July 2021 to December 2021	+1.9%	-5.6%

Figure 6 shows that the proportion of collisions involving an HGV was very similar in the 2020 and 2021 relaxation periods compared with the same periods starting in 2019. The proportion of HGV traffic on the roads increased during the relaxation periods, compared with the same periods in 2019 (evidenced by the fact that motor vehicle traffic decreased

more than HGV traffic during the relaxations – see Table 7). Therefore, the proportion of HGV collisions during the 2020 and 2021 relaxations did not increase with an increase in HGV traffic proportions, relative to 2019.

3.6.2 Casualties (KSIs) in collisions involving HGVs

Every casualty listed in STATS19 has an associated severity which describes the extent of their injury: 'killed', 'serious' or 'slight'. The number of killed or seriously injured casualties (typically referred to as KSIs) is a useful metric as it helps to determine if the severity of collisions has changed (in addition to the number of collisions). Underreporting is also less prominent for KSIs than 'slight' injuries[20].

As the methods for determining the extent of an injury have varied by police force and over time, adjusted KSI figures for previous years are computed yearly by the DfT based on new adjustment factors[21]. In this analysis the adjusted KSI figures reported in the 2021 published data are used for 2015 to 2021 casualties.

The proportion of all KSIs that were in collisions involving HGVs in the relaxation periods from 2015 to 2019, compared with the equivalent proportion during the same period in adjacent years, is shown in Figure 7.

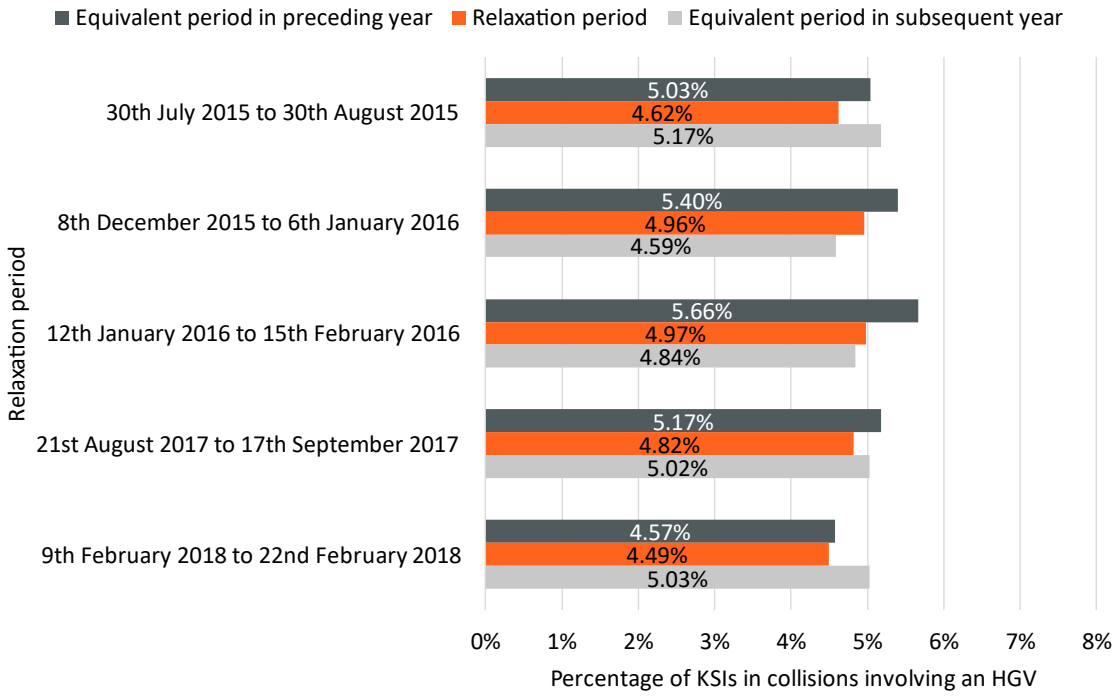

Figure 7: Proportion of all KSIs in collisions involving an HGV (data source: STATS19)

[20] See: https://www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2021/reported-road-casualties-great-britain-annual-report-2021

[21] See: https://www.gov.uk/guidance/road-accident-and-safety-statistics-guidance#severity-adjustments

As with all collisions, the proportion of KSIs in collisions involving an HGV is greater in the previous year for each of the five relaxation periods. For three of the five periods the proportion in the subsequent year is also greater. Overall, there is a very small amount of evidence of a decreased proportion during the relaxations.

Figure 8 shows the proportion of all KSIs that were in collisions involving an HGV in the relaxation periods during 2020 and 2021, compared with the same period starting in 2019. Again, for context, Table 8 presents the average change in traffic levels between the months of the relaxation periods and the same months starting in 2019.

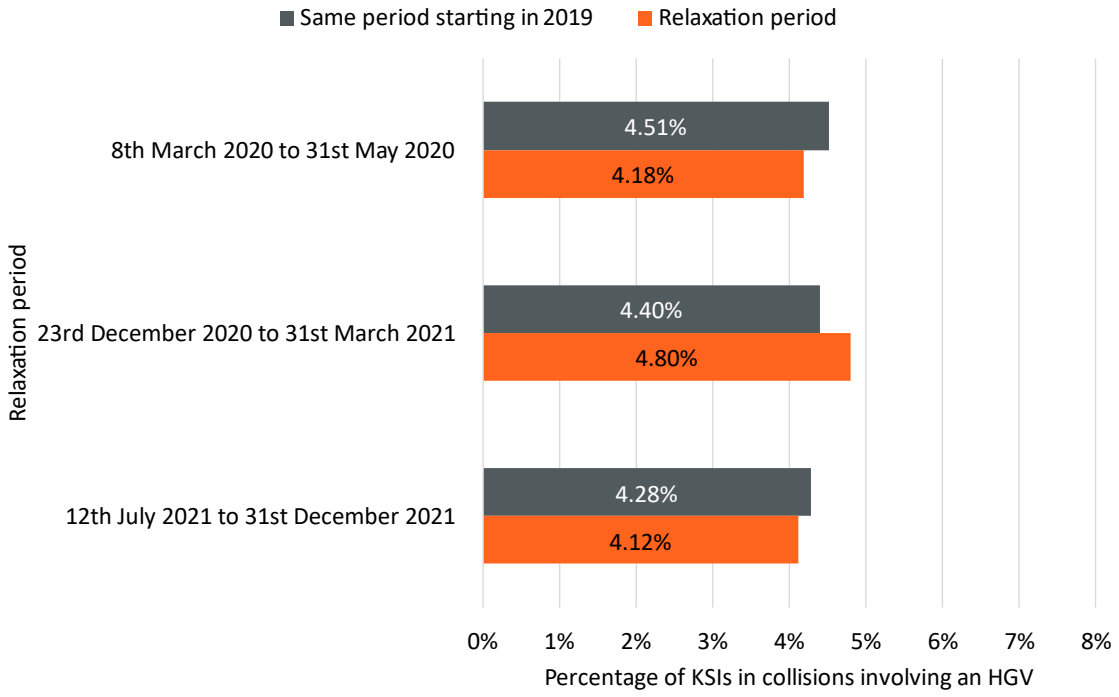

Figure 8: Proportion of all KSIs in collisions involving an HGV in the relaxation periods and the same period starting in 2019 (data source: STATS19)

Table 8: Average monthly change in traffic levels relative to the same month in the equivalent period starting in 2019 (2) (data source: road traffic statistics)

Relaxation Period	Average monthly change in HGV absolute traffic levels	Average monthly change in all motor vehicle absolute traffic levels
March 2020 to May 2020	-24.5%	-44.2%
December 2020 to March 2021	-0.4%	-23.8%
July 2021 to December 2021	+1.9%	-5.6%

As with collisions (see section 3.6.1), the proportion of all KSIs that were in collisions involving an HGV is very similar when comparing the relaxation periods with the equivalent periods starting in 2019, despite the proportion of HGV traffic on the roads increasing in the relaxation periods.

3.6.3 Statistical modelling - collisions and KSIs

3.6.3.1 Collisions

To isolate the association between the relaxation periods and collisions, accounting for other factors, such as the general downwards trend in collision numbers over time, a statistical model was built. This negative binomial regression model uses daily data from 2015 to 2021 to predict the number of collisions per day based on the explanatory variables given in Table 9. Modelling the number of collisions per day (as opposed to weekly or monthly, for example) is necessary to accurately assess the association with the relaxation periods as these partially overlap with different weeks and months. There were enough collisions involving HGVs daily to build a statistical model; only 21 days between 2015 and 2021 had zero collisions involving an HGV and the average number per day was 11. For full details of the model, including the input variables and results, see Appendix B.

Table 9*:* Explanatory variables included in the collisions and KSIs statistical models

Explanatory variable	Variable levels
Month	All months from January to December
Weekday	All days from Monday to Sunday
Year	All years from 2015 to 2021
School holiday day	'Yes' or 'No'
COVID lockdown day	'Full national lockdown', 'Partial lockdown' or 'No lockdown'
Relaxed drivers' hours rules	'Yes' or 'No'

It is important to note that traffic data was not included in the model as this data was not available at a daily level. The variables in the model for 'month', 'weekday', 'year', 'school holiday period' and 'COVID lockdown' account for some of the variation in traffic levels (for example the types of vehicles on the roads and journey purposes might be different during school holidays), therefore acting as a proxy for traffic. However, these variables do not capture all variation in traffic levels, for example due to weather conditions.

The p-value[22] and coefficient for the drivers' hours relaxation = 'yes' variable level (relative to a baseline of 'no') is given in Table 10 below. The 95% confidence interval[23] for the coefficient is also presented.

[22] The p-value for each variable represents the probability of obtaining the given data under the hypothesis there are no differences in the number of collisions for different levels of that variable. Thus, a very low p-value (close to zero) indicates that that there is a significant difference in the number of collisions for levels of the variable (for example, between the 'driver relaxation' yes and no categories). P-values less than 0.05 are considered statistically significant in this report; this is a commonly applied threshold.

[23] A 95% confidence interval represents the range in which, if one obtained many different samples, all from the same population, then the estimate of the parameter would fall between these values 95% of the time.

Table 10: Results from the collisions statistical model for the relaxed drivers' hours rule = 'yes' variable level, compared with a baseline of 'no'

P-value	Coefficient	Corresponding percentage difference	Interpretation
<0.001	-0.140; 95% confidence interval: (-0.190, -0.09)	13% reduction; 95% confidence interval: (-17%, -9%)	There is a significant difference between the relaxation days and non-relaxation days, as indicated by the very small p-value. As the coefficient is negative, there are fewer collisions per day on relaxation days. The coefficient of -0.140 in the model corresponds to a reduction of 13%. Therefore, keeping all other variables in the model fixed, relaxation days have, on average, 87% as many collisions as non-relaxation days.

The results from the statistical model indicate a small reduction in the number of daily collisions involving HGVs on relaxation days, when accounting for variation in collision numbers between different years, months, weekdays, holiday periods and, to some extent, due to the COVID pandemic.

Further (sensitivity) analysis was conducted to investigate the association between the relaxations and collisions before the COVID period (2015 to 2019) and during the COVID period (2020 and 2021) separately.

- For the pre-COVID model (2015-19), the variable for drivers' hours was not significant ($p>0.05$). Therefore, there was no statistical evidence of an association between relaxed drivers' hours rules and collisions from 2015 to 2019.
- For the 2020-21 model, the drivers' hours relaxation variable was highly significant ($p<0.001$) with a coefficient of -0.31. This indicates a 27% decrease in the number of collisions on relaxation days, keeping all other modelled variables fixed.

This further analysis indicates that the COVID period is disproportionately impacting the 2015-21 model and therefore the result in Table 10 should be interpreted with caution. Due to the uncertainties in how effectively the COVID pandemic and its impacts are accounted for in the model, there is insufficient evidence to conclude an association between the relaxations and collisions using data from only 2020 and 2021.

Overall, given the other factors that cannot be fully accounted for (notably traffic), there is inconclusive evidence on the association between collisions involving HGVs and the relaxation periods.

3.6.3.2 KSIs

To isolate the association between the relaxation periods and KSIs, a second statistical model was built. This statistical model predicts the number of KSIs per day based on the same explanatory variables as for the "collisions" model (see Table 9). There were sufficient KSIs in collisions involving HGVs daily to build a statistical model; 286 days (11% of all days) between 2015 and 2021 had zero KSIs and the average number per day is just over 3. For full details of this model see a Appendix B.

The p-value and coefficient for the 'drivers' hours relaxation = 'yes' variable level (relative to a baseline of 'no'), is given in Table 11 below.

Table 11*:* Results from the KSI statistical model for the 'relaxed drivers' hours rule = yes' variable level, compared with a baseline of 'no'

P-value	Coefficient	Corresponding percentage difference	Interpretation
0.048	-0.088; 95% confidence interval: (-0.175, -0.001)	8% reduction; 95% confidence interval: (-16%, 0%)	There is a significant difference between the relaxation days and non-relaxation days. The coefficient of -0.088 in the model corresponds to a reduction of 8%. Therefore, keeping all other variables in the model fixed, relaxation days have, on average, 92% of the collisions as non-relaxation days. However, the uncertainty in this estimate is high as the confidence interval for the coefficient is wide.

In summary, the results from the statistical model indicate a small reduction in the number of daily KSIs in collisions involving HGVs on relaxation days, when accounting for differences between months, weekdays, years, holiday periods and, to some extent, due to the COVID pandemic. However, this result is only just significant at the 0.05 threshold. Further, the 95% confidence interval is wider for this model, demonstrating more uncertainty in the estimate. As discussed for the "collisions" model, there are also other factors which could not be accounted for here, and uncertainties surrounding the impact of the COVID pandemic, so further caution should be applied in interpreting this result. Therefore, the statistical evidence for an association between relaxations and KSIs is inconclusive.

3.6.4 Collisions involving fatigue

As discussed, collisions and casualties are assigned contributory factors in the STATS19 data. These factors[24] specify any key actions or failures deemed to have resulted in the collision, for example related to the condition of the vehicles, drivers, or road. Up to six factors can be assigned to each collision. This analysis focusses on incidents where fatigue is cited as a contributory factor, as fatigue is used as a proxy for the impact of the drivers' hours restrictions. Not all collisions have associated contributory factors and not all are attended by the police. This analysis only includes collisions for which contributory factors are recorded and police officers attended the scene. This includes the majority of total collisions (71%) and collisions involving HGVs (79%) on the GB road network from 2015 to 2021.

The number of collisions with a fatigue factor for an HGV driver in each relaxation period is given in Table 12.

Table 12: Number of collisions involving an HGV driver with a fatigue contributory factor, in each of the relaxation periods (data source: STATS19)

Relaxation period	Number of days	Number of collisions involving a fatigued HGV driver	Average number of collisions involving a fatigued HGV driver per day
30th July 2015 to 30th August 2015	31	4	0.13
8th December 2015 to 6th January 2016	29	6	0.21
12th January 2016 to 15th February 2016	34	11	0.32
21st August 2017 to 17th September 2017	27	6	0.22
9th February 2018 to 22nd February 2018	13	5	0.38
8th March 2020 to 31st May 2020	84	6	0.07
23rd December 2020 to 31st March 2021	98	11	0.11
12th July 2021 to 31st December 2021	172	17	0.10

[24] There are 78 contributory factors in total. See here for a description of all the factors: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/995424/stats20-2005.pdf

The number of collisions involving a fatigue factor is small, with an average of less than 0.4 per day in each of the relaxation periods. This is important context for interpreting the following charts.

The proportion of collisions involving an HGV driver with a fatigue contributory factor during the relaxation periods from 2015 to 2019, compared with the same periods in adjacent years, as a proportion of a) all collisions, and b) all collisions involving an HGV, is shown in Figure 9 and Figure 10 respectively.

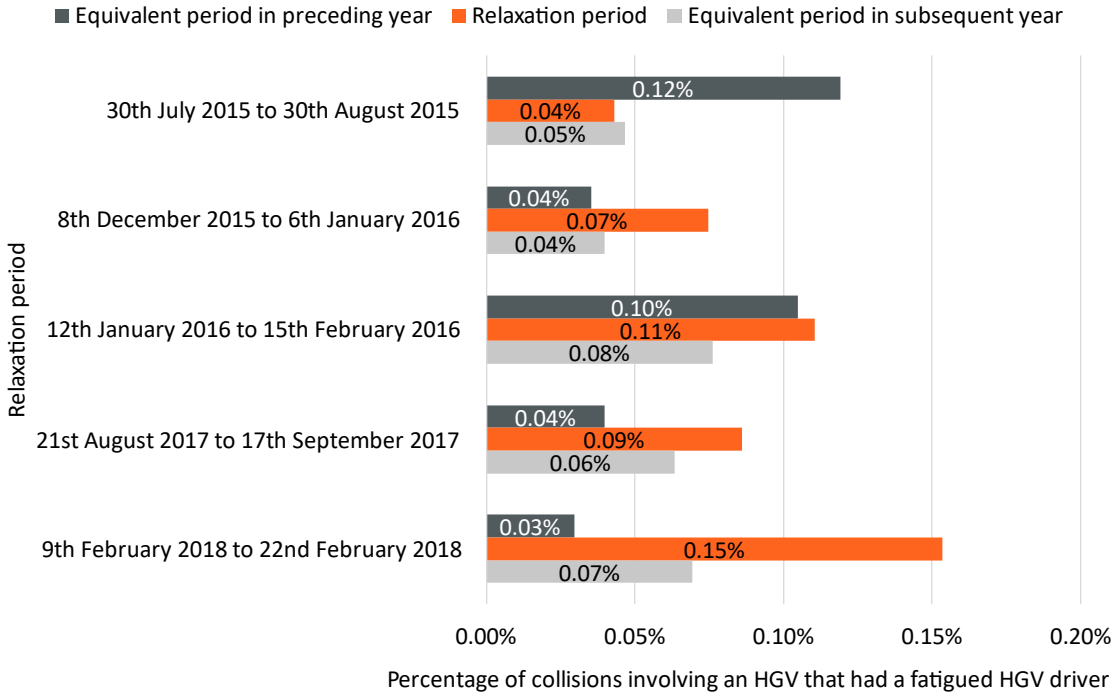

Figure 9: proportion of collisions (attended by police at the scene, and with contributory factors records) that involved an HGV driver with a fatigue contributory factor, in the relaxation periods and adjacent years (data source: STATS19)

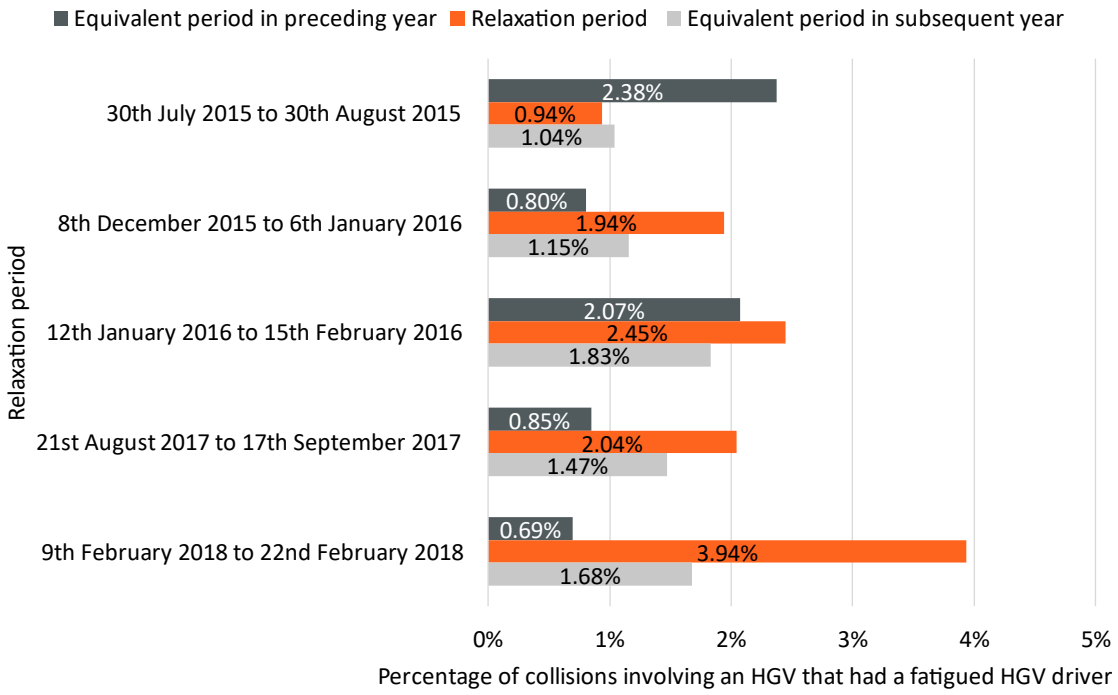

Figure 10: proportion of collisions involving an HGV (attended by police at the scene, and with contributory factors records) that had an HGV driver with a fatigue contributory factor, in the relaxation periods and adjacent years (data source: STATS19)

The proportion of collisions with a fatigue contributory factor for an HGV driver is greater during the relaxation periods than adjacent years, except for the first relaxation period. The most substantial differences are observed for the February 2018 relaxation period, where nearly 4% of all collisions involving HGVs had a fatigue contributory factor for an HGV driver, compared with 0.69% the year before and 1.68% the year after. Therefore, there is evidence of an increased proportion of fatigue-related collisions during the relaxations. However, as the relaxation periods are short, having a small sample size of fatigue-related collisions (see Table 12 - the percentages correspond to absolute differences of at most five collisions), more evidence – due to the small number - is required to conclude that the differences are not due to random variation. Other possible factors could also explain the differences, such as more rigorous reporting of fatigue during the relaxations.

The equivalent charts to the above for the 2020 and 2021 relaxation periods, comparing with the same periods in 2019, are shown in Figure 11 and Figure 12. Again, as important traffic context, Table 13 is shown.

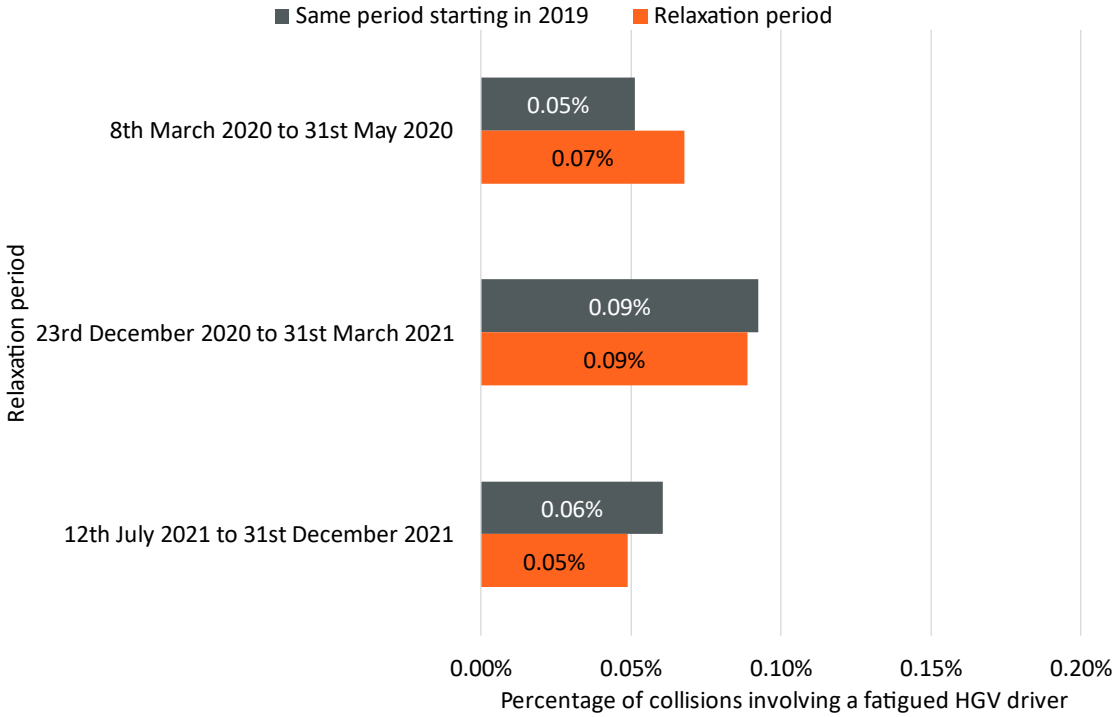

Figure 11: Proportion of all collisions (attended by police at the scene, and with contributory factors records) that involved an HGV driver with a fatigue contributory factor in the relaxation periods compared with the same period starting in 2019 (data source: STATS19)

Table 13: Average monthly change in traffic levels relative to the same month in the equivalent period starting in 2019 (3) (data source: road traffic statistics)

Relaxation Period	Average monthly change in HGV absolute traffic levels	Average monthly change in all motor vehicle absolute traffic levels
March 2020 to May 2020	-24.5%	-44.2%
December 2020 to March 2021	-0.4%	-23.8%
July 2021 to December 2021	+1.9%	-5.6%

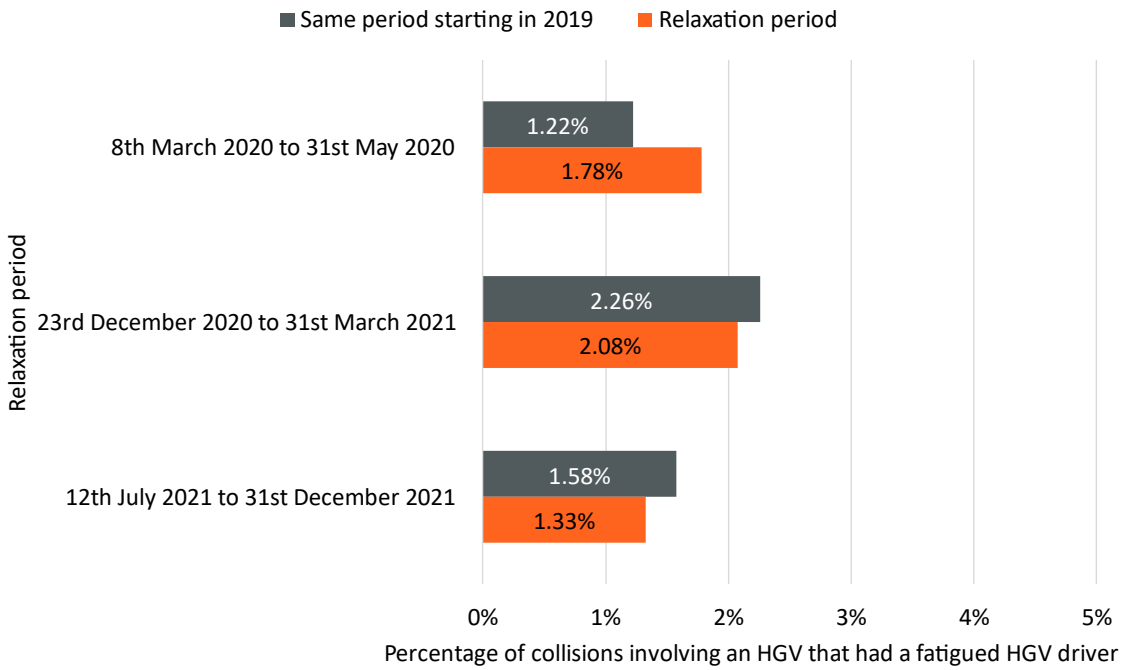

Figure 12: Proportion of all collisions involving an HGV (attended by police at the scene, and with contributory factors records) that had an HGV driver with a fatigue contributory factor in the relaxation periods compared with the same period starting in 2019 (data source: STATS19)

Whilst the proportion of HGV traffic on the roads increased during the relaxation periods compared with 2019, the proportion of all collisions that involved a fatigued HGV driver was very similar.

The proportion of all collisions that involved an HGV which had a fatigued HGV driver was larger for one relaxation period (compared with 2019), but smaller for the other two. Overall, there is little evidence that the proportion of fatigue-related collisions (as a proportion of all collisions or collisions involving HGVs) changed during the relaxation periods in 2020 and 2021.

There is a clear difference between the analysis of the 2015 to 2019 relaxation periods (where the relaxation periods almost all had higher proportions of fatigue-related collisions than adjacent years – see Figure 9 and Figure 10) and the 2020 and 2021 relaxation periods (where the proportions during the relaxation periods are not noticeably different to 2019 – see Figure 11 and Figure 12). The 2020 and 2021 relaxation periods are much longer, each at least 10 weeks, hence have a larger sample of collisions and therefore more reliable conclusions can be drawn from them. Considering all seven relaxation periods together, there is inconclusive evidence of an association between the proportion of fatigue-related collisions and the relaxation periods.

Statistical analysis was not possible for the collisions involving fatigue as there were not enough collisions; 87% of days from 2015 to 2021 had zero collisions involving fatigue and hence a similar approach to that for collisions and KSIs was not suitable. Modelling at a monthly or quarterly level is not granular enough to robustly assess the association between the relaxation periods and collision numbers.

3.6.5 National Highways Fatals data

Findings and conclusions

Data on fatal collisions on the SRN for which an HGV driver was identified as being fatigued, or over the drivers' hours limit was extracted from 2015 to 2019. Only one collision was identified during the relaxation periods. It was not possible to determine which sets of rules were in place for the drivers involved in the collisions. The main findings and conclusions are as follows:

- There were 38 collisions identified. Of these, 37 were suspected or known to have a fatigued HGV driver and four were related to a driver exceeding their applicable standard drivers' hours limit.
- One collision occurred during the relaxation periods. In this collision two HGV drivers were suspected to have been fatigued, however, alcohol use and mobile phone use were also identified as possible causation factors. Both drivers were adhering to the non-relaxed drivers' hours regulations. Overall, there was no evidence from the Fatals data of fatigue-related collisions being impacted by the relaxed hours rules.
- Of the four collisions with a HGV driver exceeding their applicable drivers' hours limits:
    - During one collision the driver was more than 5 hours over the limit over two consecutive days. Fatigue was identified as a possible cause of the collision. The driver was also using a mobile phone and failed to look properly (both identified as very likely causes of the collision).
    - For another collision the driver had recently started night driving and had many tachograph infringements recorded over an extended period, amounting to a substantial period of rest not taken and driving hours exceeded. The driver drifted off the carriageway and exceeding the hours limit repeatedly appears to have been a significant contributor to this.
    - The other two collisions involved HGVs being crashed into from behind; one HGV was parked on the hard shoulder and the other was slow moving in the inside lane. Fatigue was identified as a possible cause of both collisions.
- There were several other causation factors identified for the 38 collisions, including distraction in the vehicle (18 collisions), impairment by drugs (8 collisions), illness (7 collisions) and using a mobile phone (6 collisions). No collisions were only assigned fatigue as a causation factor. In most cases a number of factors are described as contributing to the collision.
- Countermeasures are assigned to each of the collisions to indicate what might have prevented it. These are identified by expert collision investigators based on the information received within police reports. At least one countermeasure per case is identified as 'primary'. Fatigue monitoring was identified as a countermeasure for most of the collisions (32 of 38) but a primary countermeasure for less than a third (11). Many other countermeasures were also identified, such as automated emergency braking (28 collisions, 17 primary) and distraction monitoring (19

collisions, 2 primary). One collision had a countermeasure related to a driver hours lock; this suggested preventing the driver from using the vehicle beyond their allotted driver hours with buffer hours for late deliveries to prevent fatigue.

4 Qualitative Analysis – Stakeholder Engagement

4.1 Key qualitative findings

4.1.1 Research Question 1: How effective are the existing regulations at mitigating fatigue-related incidents for commercial freight vehicle drivers?

The key stakeholder engagement findings, in terms of the effectiveness of the current regulations were as follows (referring to all interviewees, unless specified):

- Both EU drivers' hours regulations and GB Domestic drivers' hours regulations were broadly viewed as effective at preventing drivers from working excessive hours unsafely, although differing views were provided on details such as maximum driving time and minimum rest periods (daily, weekly and fortnightly). Stakeholders who held this opinion did not want the regulations to change.
- However, some stakeholders believed that the regulations should be altered to avoid confusion. Potential improvements to the EU drivers' hours regulations suggested by participants included alterations so that the aspects of the regulations around breaks matched up with the RTWTR. Currently, the regulations differ in when they state that a driver must take a break, which drivers noted was confusing and led to a greater likelihood of infringements when trying to apply both EU/GB rules and the RTWTR.
- Some participants expressed a direct preference for the EU drivers' hours regulations, compared to the GB Domestic drivers' hours regulations (although it has to be noted that none of the drivers interviewed had experience of using GB Domestic drivers' hours regulations on a regular basis).
- Drivers and freight operators noted that private healthcare and other wellbeing measures could be available to drivers, although it was an individual company decision to provide them.

4.1.2 Research Question 2: What is the impact of relaxing drivers' hours and working time on the welfare of drivers, fatigue, and road safety?

- Many freight operators saw relaxations as challenging to administer for their drivers and felt that relaxations are not as openly advertised as they had been historically.
- Little direct experience of excessive fatigue was reported by drivers when they had previously used the relaxations. However, most drivers and freight operators viewed the relaxations negatively. The underlying view was expressed that prolonged periods of relaxation would most likely lead to cumulative fatigue.
- Stakeholders noted that relaxations could cause confusion to drivers as to how many hours they could work each day, and in extreme cases could open the door for drivers to be exploited.

- Lifting the weekly/ fortnightly limits was rated by many freight operators' and drivers as being the adjustment that would affect the drivers' level of fatigue the least whilst addressing the needs of the relaxation. Conversely, reducing daily rest time was considered to be the least appropriate adjustment.
- Respondents noted that if any future relaxations are implemented, they should aim to lift the weekly / fortnightly driving limits, rather than increase the daily driving limit, to minimise the likelihood of fatigue.

4.1.3 Research Question 3: What additional interventions have been proposed to better manage commercial driver fatigue?

- Some interventions were reported to already be in place at some operators. These varied from an agreement with the driver that they could stop and take a break if they felt tired (reported by all HGV drivers) to private healthcare (one freight operator) or monitoring of the HGV driver (one freight operator).
- Many drivers felt that the period of availability (POA[25]) should be eliminated as it caused greater levels of fatigue.

4.1.4 Research Question 4: Does the evidence support the need for a change in legislation?

Stakeholders suggested that it may be apt for some delivery drivers to move from EU drivers' hours regulations to GB Domestic drivers' hours regulations. These included door-to-door refuse collection, multi-drop personnel and volumetric cement mixer workers. This is because these HGV drivers spend a large proportion of their day performing non-driving duties, and therefore it may be more appropriate to manage working hours by the amount of work undertaken, rather than time driving.

4.2 Method

The aim for the stakeholder engagement was to obtain a range of opinions and views:

- To assess the effectiveness of existing regulations on drivers' hours and working time in mitigating the road safety risk of fatigue-related incidents for commercial freight vehicle drivers.
- To explore the impacts of relaxations to aspects of the EU drivers' hours regulations on both drivers and freight operators.

[25] Generally speaking, a period of availability (POA) is waiting time, the duration of which must be known in advance. Examples of what might count as a POA are accompanying a vehicle on a ferry crossing or waiting while other workers load/unload the vehicle. (DfT)

4.2.1 Sample

The total number of stakeholders who were contacted and interviewed is shown in Table 14. Note, the results section discusses the findings according to the three groups defined below (drivers, freight operators and industry representatives). Note also that the Health and Safety Executive (HSE) refused to participate due to the topic being controversial.

Table 14: Participant recruitment for stakeholder interviews

Category	Number of stakeholders contacted	Number of stakeholders interviewed
HGV Drivers	111	20
Freight Operators	104	10
Freight Operator Associations (Industry representatives)	4	4
HGV Driver Unions(Industry representatives)	1	1
Government/Enforcement Bodies/Agencies(Industry representatives)	6	3
Total	**226**	**38**

Every effort was made to capture views and opinions across the variety of industry sectors that HGV drivers and operators cover. The research included operators and/or drivers from the following industry sectors:

- General hire and reward haulage.
- Vehicle transporters.
- Container movements.
- Wholesale food distribution.
- Retail food distribution.
- Mixed Fast Moving Consumer Goods.
- Animal by-products.
- HGV vehicle deliveries, sales support.
- Building supplies.
- Waste and recycling.

None of the interviewees were governed under GB Domestic Regulations, which reflects that they are not often governed by these regulations outside the passenger carrying sector.

4.2.2 Recruitment approach

Participants were recruited through a mixture of purposive and opportunity sampling. A selection of relevant trade bodies, government departments and agencies known to DfT and TRL were contacted. Drivers were also contacted through Unite the Union and direct approaches to freight operators and drivers via email or phone call.

4.2.3 Format of interviews

Interviews were conducted either via phone, Microsoft Teams call or face-to-face. Questions were based on the semi-structured topic guides (See Appendix D, Appendix E and Appendix F**.** Notes were made for each interview (as well as transcripts and recordings for the Teams interviews), which were used to write up the responses afterwards.

4.2.4 Format of focus groups

Following the interviews, two focus groups were conducted over Microsoft Teams with industry representatives (three in one group, and four in the other). The purpose of these groups was to test the viability of results from the earlier interviews. Industry representatives from all three of the stakeholder types (freight operator associations, HGV driver associations, enforcement bodies) attended. The focus groups were recorded and transcribed, with important points noted and added to this report.

4.2.5 Other considerations expressed

Respondents felt strongly that investing in better facilities for drivers, including parking, would be beneficial in the long term as a measure to reduce fatigue.

Period of Availability (POA – when drivers are required to stay within their vehicle and wait to be called to take part in other work) was treated very differently across the business and could lead to additional fatigue experienced by drivers.

4.3 Full qualitative findings

The key findings of the qualitative research reflect the personal views of all participants and reflect a wide range of opinions. It should be noted that where there was a majority view expressed, this is reflected and that there were several alternative views expressed by participants. Where different views were expressed, both are recorded.

4.3.1 Research Question 1: How effective are the existing regulations at mitigating fatigue-related incidents for commercial freight vehicle drivers? (EU drivers' Hours and GB Domestic drivers' hours Regulations)

4.3.1.1 Feedback on EU drivers' hours regulations

The interviews examined what worked well and what could be improved within the EU drivers' hours regulation. Participants generally agreed that the EU drivers' hours regulations were effective. Participants felt that they were restrictive enough to prevent

drivers from working long hours and ensured that drivers had sufficient rest periods and breaks.

> *"Perfectly happy, no reason to change the regulations as they work for road safety, and safety of road users. The regulations ensure drivers aren't driving whilst tired and aren't causing additional risks. They are there for a reason, they are proven and work as they are supposed to work" (Industry representative)*

4.3.1.2 Improvements to EU drivers' hours regulations

Suggested improvements to the EU drivers' hours regulations were centred around a need for simplicity. Freight operators argued that using and understanding the EU driving hours regulations alongside the RTWTR was not easy. This was due to the discrepancy between when drivers should take breaks for the EU drivers' hours regulations (45 minutes after 4.5 hours of driving) versus for the RTWTR (20 minutes after 6 hours of work). This discrepancy in breaks was repeatedly noted as being confusing and increasing the likelihood of a driver committing a violation of one set of regulations.

> *" For the six hour rule on Working Time Directive as far as I'm concerned is a waste of time if you're sticking to the driver hours rules and regulations" (Freight operator)*

Another issue raised was the implementation of parts of the regulation, such as digital tachographs. For instance, one driver described how tachographs did not register the time elapsed when the vehicle was stopped in traffic, which makes the driver appear to have been driving for less time than reality.

> *"Your driving time might say 4 ½, but you can actually be out on the road for longer than that, because if you're in traffic it [the tachograph] stops. It doesn't record the driving time. It was like a get out clause for the industry. We can, you know digitalize this. We've got a bit of a loophole here where we can keep drivers out for longer because it's not going to register as driving time on the digital tachographs" (Driver)*

Some drivers also expressed feelings of frustration and annoyance at how long the shifts could become and noted how the level of safety would reduce over time.

> *"Nothing works well. You can work 15 hours a day on duty, and you drive for 10 of those hours. For example, if a truck driver starts at 5am, they could still be working at 8pm at night, and that's somehow legal. Driving a 44 tonne truck takes a lot of concentration, how can it be safe for a man to be on duty for 15 hours?" (Driver)*

Some drivers noted that when they were 20 mins or less from the depot (but had driven 4.5 hours without a break) they would need to take a break, and this would extend their day. This was noted as potentially causing a greater amount of fatigue due to the extension of their day.

4.3.1.3 Feedback on GB Domestic drivers' hours regulations

The majority of drivers interviewed had no previous experience with GB Domestic drivers' hours regulations (and therefore were unfamiliar with the regulations). However, of those who were familiar with them the majority expressed that GB Domestic drivers' hours regulations are simple and assist with societal issues e.g. the driver shortage problem (through allowing drivers to work for longer to cover the shortfall of drivers). Participants also found the rules easy to understand and that they work well. Alternatively, one enforcement body representative suggested during the focus group that the GB Domestic drivers' hours regulations should be assessed to see if they are still fit for purpose, as they have not changed in many years.

4.3.1.4 Improvements to GB drivers' hours regulations

Suggested improvements were concerned with how the GB Domestic drivers' hour regulations were implemented, rather than a lack of awareness of them. Participants' comments were varied. As noted by many of the stakeholders during the focus groups, drivers would typically only know the regulations they were using. Some mentioned that if drivers were working in accordance with the EU drivers' hours regulations, it would create confusion to try and use the GB Domestic drivers' hours regulations alongside them.. Where drivers are unfamiliar with one set of rules this could lead drivers to unknowingly commit a driving infringement. The issues described were noted by freight operators as being noticeable across the industry generally, with one freight operator commenting that the issues may also be present in the utilities sector.

> *"Domestic hours confuse drivers, drivers may be working too long because they don't understand GB Domestic hours rules" (Freight operator)*

Finally, two stakeholders during the focus group suggested that the GB Domestic drivers' hour regulations should be recorded using some type of technology, such as an app (rather than on paper, as is common practice).

4.3.1.5 Preference for one of the two sets of regulations

When asked which set of rules they preferred, a majority of participants expressed a preference towards the EU drivers' hours regulations. Few expressed a preference for the GB Domestic drivers' hours regulations, which may be due to how many drivers were not aware of the GB Domestic drivers' hours regulations.

When asked to elaborate on their answers, the participants stated that: the EU drivers' hours regulations were more specific and stringent around rest periods; are easier to

enforce; and individuals within the industry are more familiar with them than the GB Domestic drivers' hours regulations.

> *"It would be the EU drivers' hours rules, it's the set of rules which everyone is working under and is familiar with. This would be the preference, but we want to see changes to these rules, specifically the loopholes" (Industry representative)*

Only a few participants (driver and freight operators) expressed a preference for the GB Domestic drivers' hours regulations; this appeared to reflect a sector-specific preference. One driver in particular was in favour of the GB Domestic drivers' hours regulations as it had previously made it easier for him to move his cargo due to the regulations focusing on working time rather than driving.

> *"Much prefer UK Domestic hours regulations. Used to collect bits from slaughterhouses and have to get it off the road, it works so much easier." (Driver)*

4.3.1.6 Working time regulations opt out agreement

When drivers and freight operators were asked whether they had a working time regulation 'opt-out agreement'[26], half of freight operators stated yes, with one driver stating that they had signed one. Freight operators believed an opt-out agreement allowed drivers to work and increase their pay through overtime and the driver who had signed an opt-out agreement supported this reasoning. It should be borne in mind that the driver who had signed this agreement stated that such agreements are more of a historic legacy; one driver reported that it was unclear if such agreements were still encouraged by his employer.

4.3.1.7 Guidance on EU/GB regulations

Whilst some stakeholders had nothing to report on the EU drivers' hour regulations guidance document on the government website, the respondents who did comment noted that the guidance was thorough. However, whilst some industry groups believed that the guidance was clear (and did not need to be changed), some other stakeholders believed that the guidance was too complicated for HGV drivers to understand. They therefore noted that the guidance needed to be interpreted in order for HGV drivers to understand it. These stakeholders believed that the guidance should be made simple enough for drivers to understand and apply it. Participants described how drivers were felt to be turning to other internet websites instead of the official guidance (as they wanted a version of the guidance that was easier to understand). Unfortunately, some of these internet interpretations of the regulations were inaccurate (and therefore got key aspects wrong) due to their over-simplification of the regulations.

[26] An opt out agreement refers to an agreement which permits an employee to work for more than 48 hours in a week - https://www.gov.uk/maximum-weekly-working-hours/weekly-maximum-working-hours-and-opting-out

The guidance on EU drivers' hour regulations was also noted as needing to take into account the effects of Brexit, although the enforcement body representative noted this was expected to be addressed in the near future.

No improvements were suggested regarding the GB Domestic drivers' hour regulation guidance. Note that this was not due to a lack of awareness.

4.3.2 Research Question 2: What is the impact of relaxing drivers' hours and working time on the welfare of drivers, fatigue, and road safety?

4.3.2.1 Experience of temporary relaxations – freight operators

Of the participants – freight operators and drivers – some stated that they had experienced some form of temporary relaxations to drivers' hours. Overall, relaxations to drivers' hours regulations were viewed somewhat negatively by freight operators. The freight operators who hadn't used the relaxations reported that this decision was due to the administrative burden associated with using the relaxations. Interestingly, such a finding was also reported by freight operators who chose to use the relaxations, suggesting that this view may be widespread within this group. The administrative burden appeared to be caused by the reporting requirement for operators, which requires them to detail why the driver is working longer hours than usual.

> *"Yeah, we looked into it, but it's the administration burden it creates on an operator to keep finite records when you use the relaxation to explain why that driver that will go into… 10 hours driving rather than what should have been probably 8." (Freight Operator)*

The relaxations were also negatively perceived due to a belief that drivers may start disregarding the regulations if the relaxations keep being introduced. As reiterated in the focus groups, there was confusion among drivers and freight operators as to why the relaxed hours were safe, when they were not considered safe during normal times, and when relaxations started and ended.

> *"I don't like the relaxations as the regulations are either safe or unsafe. The regulations are based around safety, but then suddenly [when the relaxations come in] you don't have to comply anymore, which isn't safe. How can you say one week that it's not safe to drive more [than the regulations allow], and then the next week it's okay now and we can relax the regulations...? We need respect for the regulations" (Freight Operator)*

Freight operators who did report using the relaxations reported that they did so in times of emergency. For instance, one operator who operated a livestock haulage business, used the relaxations when a significant number of livestock needed to be moved quickly.

4.3.2.2 Experience of temporary relaxations – drivers

Of the few drivers who reported experiencing the relaxations, there were mixed views. Whilst a few drivers operating under the relaxations during the COVID pandemic did not

report any impact on fatigue or wellbeing, it is important to note that they suggested that the roads were quieter during this period and therefore these experiences of the relaxations may not be fully representative of the experiences of drivers during relaxations currently. Many drivers disagreed with the relaxed regulations due to the longer hours leading to a greater amount of fatigue, or the increased likelihood that their employers would exploit the relaxations to get their drivers to drive longer hours.

> *"Totally opposed to the relaxations. You work even longer, and it leads to the possibility of more accidents, more fatigue and mistakes" (Driver)*

However, industry representatives within the focus groups reported that the likelihood of operators taking advantage of relaxation loopholes would be quite low (especially as so few operators took up the relaxations), but that it was important to look out for those taking advantage of any potential loopholes.

> *"A lot of companies drive drivers to the limit every week and every single day, exploit drivers and work them to the max. Relaxations should only be for key infrastructure, as companies would try to exploit workers otherwise." (Driver)*

Another dominant theme amongst drivers was the perception that the temporary relaxations were not necessary, due to goods getting into depots on time and all work tasks being completed to schedule anyway. This was reiterated during the focus groups, where stakeholders noted that their members deemed some of the relaxations an insult to their industry.

4.3.2.3 Experience of temporary relaxations – Industry representatives

Some industry representatives stated that they didn't see any negative implications of relaxations to drivers' hour regulations. They described their view that changing the regulations did not create a noticeable increase in accidents or reduction in the safety of drivers. Moreover, they claimed that the relaxations assisted operators' tasks when the supply of drivers diminished during the COVID pandemic, as they allowed drivers to drive for longer to make up for the lack of drivers available. However, there was also a concern that the relaxations would mean that drivers would require more time off later in the week or fortnight to catch up. It is important to note that this view was typically anecdotal, based on experiences of their members, rather than on evidence.

On the other hand, other industry representatives felt that the relaxation of regulations might, firstly, create confusion for drivers and burden them to relearn the rules; and secondly, that operators may take advantage of this. One industry stakeholder, a legal representative from BSA (Batched on Site Association), was of the view that it can be difficult to identify the specific rules in place at the time of driving incidents occurring, when relaxations are used.

> *"My experience from them, are that they do nothing but cause difficulties as a lawyer because when we're at our public inquiry, we were nine or 12 months down the line. Nobody in the room can remember when these relaxations took*

> *effect. Precisely what they are; when they disappeared. That's the lawyers and the traffic commissioners, in my experience, are all struggling to remember what rules were in place at those dates. And, therefore, it just makes the Regulation slightly harder for the traffic commissions and for us." (Industry representative)*

It was also noted that relaxations were only used when there was pressure from Government departments, and that relaxations were not applied without careful consideration.

Finally, industry representatives expressed concern that the regulations may not adequately cover fatigue; one stakeholder suggested that a driver could be compliant with the regulations but still be fatigued from lack of sleep.

4.3.2.4 Changes suggested for future relaxations of the rules

When asked what aspects of future relaxations they would like to see changed, most freight operators expressed that the rules need to be made as simple as possible so they can be universally understood, and this includes aligning driver hour and RTWTR regulations.

Industry representatives were generally positive about future relaxations. They felt that reducing future rest periods and increasing the daily driving limit could help drivers work and therefore earn more through overtime pay. They also felt that increasing the daily driving limit would reduce the impacts of congestion and bottlenecks, such as depot waiting times, as vehicles could be driven for longer.

Nonetheless, one industry stakeholder felt that operators should be thoroughly audited before relaxations are put in place.

> *"And we would want to see clearly that any relaxations where drivers are working longer, that there is a full and comprehensive audit of those operators. But where a relaxation is used, that should be a trigger for DVSA to have a proper look at all of the operator's hours recordings, irrespective of whether they have a poor record." (Industry representative)*

The drivers' main concern regarding future relaxations was around welfare. Drivers expressed that they did not want operators to take advantage of the relaxations and make them work longer, a differing view from some operators who reported drivers' positive response to relaxation.

> *"it's paramount... the driver welfare bit of it. I think there would be manipulation by unscrupulous employers. Small organisations would say 'oh if we don't get the goods there, we'd lose the contract'. (Driver)*

Drivers also described how they should be allowed sufficient breaks when under any relaxations, while other drivers expressed concerns around the possibility of driver fatigue, which may be increased from driving longer hours.

> *"Issues on the road. If you extended for 10 hours, you get very tired, and drivers work 24/7. Fatigue is the killer, this needs to be borne in mind." (Driver)*

Additionally, some stakeholders suggested that it might be appropriate to inform drivers about any upcoming relaxations, and why these relaxations have been brought in.

4.3.2.5 Most appropriate adjustments to relaxations

All groups were asked to rate the following adjustments to drivers' hours regulations from most to least appropriate, in terms of addressing the need for a relaxation whilst preserving acceptable levels of safety and driver welfare (i.e. which measures would impact the drivers' level of fatigue the least during a relaxation):

- Increasing daily driving limit.
- Reducing daily rest requirements.
- Lifting weekly/fortnightly limits.
- Postponement of weekly rest period.

Over half of the participants completed the rating exercise (note that whilst a large majority of the freight operators and stakeholders interviewed completed this task, only a fifth of the drivers completed this task, due to few of them having experience of relaxations). In general, 'lifting weekly/fortnightly limits' was viewed as the most appropriate adjustment for a relaxation, and 'reducing daily rest' was viewed as the least appropriate. However the views of freight operators and drivers differed as to the most and least appropriate adjustment to meet the needs of a relaxation. Whilst freight operators and drivers rated 'lifting weekly/ fortnightly limits' as being the most appropriate adjustment, industry representatives rated 'increasing the daily driving limit' as the most appropriate adjustment. Freight operators and drivers rated reducing 'daily rest requirements' as the least appropriate adjustment whilst industry representatives rated 'lifting weekly / fortnightly limits' as least appropriate.

4.3.2.6 Positive and negative impacts of each of the relaxation adjustments

Industry representatives generally viewed increasing the daily driving limit as a positive, because it allowed more work to be completed. Nonetheless, one stakeholder expressed that any kind of adjustment should be specific to a sector, rather than universal.

> *"It depends on the operation that is attempting to benefit from it. In some situations it is about needing that extra time to complete the job you intend to do. Depending on the sector, they will be different requirements and preferences for which ones should be deployed." (Industry representative)*

When asked to comment on the potential positive and negative impacts of each adjustment, freight operators believed that increasing the daily driving limit would mean drivers could drive longer and rest at home, rather than on the road.

> *"By increasing the daily driving limit you've maybe got more of an opportunity to get drivers home at night as opposed to them staying out. So obviously they probably get better rest at home than ….in the cab." (Freight operator)*

Nonetheless, freight operators also commented that driver fatigue might increase, as operators may try to use the adjustment to their advantage by requiring drivers to work longer hours. Regarding the postponement of the weekly rest period, freight operators commented that the weekly rest period allocation is extremely important and should be maintained and certainly not shortened. One operator commented that drivers may try to use such a postponement to their advantage, out of a desire to earn more, which may lead to fatigue.

> *"You definitely want to be taking the weekly rest, or postponement of weekly rest [out] of a relaxation because people need to get rest, that would be causing fatigue [otherwise] and you start to get people being greedy and wanting to get as much work as they can..." (Freight operator)*

As with the freight operators, drivers expressed that lifting weekly/ fortnightly limits was advantageous, as it allows drivers to return to work sooner and spend more time with family. Regarding the daily driving limit, drivers believed that wellbeing could be threatened if this was increased, mainly from the perspective of driver fatigue. For some drivers nine hours rest was viewed as short enough and a 15-hour day viewed as long enough a working day.

> *"The rules are in place so they don't kill people. Fatigue is the killer, it's like driving drunk, you don't do it. You're storing up trouble for the future." (Driver)*

4.3.2.7 Suggestions for what increased driving limits and reduced rest periods should be in future relaxations

When asked what increased driving limits and reduced rest periods should look like for future relaxations, industry representatives were of the view that any relaxations need to be kept as simple as possible, considering how long driving hours are, whilst also maintaining safety. Freight operators believed that the complexities around rest should be considered; one operator argued that drivers should be encouraged to take rest more than once per month. One operator argued that the breaks which are currently mandated to drivers may not be adequate to reduce fatigue.

> *"I question whether a 15 minute break actually affects fatigue, compared to a 45 minute break. Most drivers find somewhere to stop vehicle, [think] what do I do for 15 minutes, is there enough time to do anything? Is a 15 min break worth anything? Rarely do that now." (Freight operator)*

Finally, some operators viewed the issue from the perspective of investing in drivers and making the industry more attractive, rather than focusing on relaxations per se. These operators argued that relaxations may assist with shortages of personnel, but more attention needs to be paid to making the industry more attractive to young people.

> *"I think as an industry we need to look at ourselves and the aging profile that we've got of drivers, yet we don't do anything to inspire the younger generation. We're turning people away from the industry maybe in their late teens, early 20s because they're too young. But by the time we want them in their mid 20s, they've already committed to another industry and they're not interested in driving lorries.." (Freight operator)*

When asked what increased driving limits and reduced rest periods should look like for future relaxations, one driver stated that the rest periods could be reduced from 11 hours to 9 hours. Conversely, another driver stated that rest limits should be increased from 11 to 12 hours. Some freight operators were of the view that the weekly driving hours could be extended, perhaps by allowing drivers to work a sixth day.

4.3.2.8 Suggested changes to the process of requesting a temporary relaxation to the drivers' hours regulations

The importance of the requirement for 'catching up' on rest was expressed and that relaxations should be for a defined task rather than a more generic reason, such as driver shortages.

> *"The rules are there for road safety – relaxation should be used as a last resort. The question is if you can relax regulations for a month, why can't you relax the regulations always? Because the current rules adhere to road safety standards. Many members [i.e. haulage companies] didn't take up the relaxations. Driving is a very intensive task, and any mistake can affect safety. But there are some times where the relaxations need to happen (i.e. COVID)."*

When asked about changes that could be made to the process of requesting a temporary relaxation, freight operators suggested that clear communication was needed.

> *I don't think there's any need for a change. I think the main thing is, is that the communication is out there and clear for everybody to know and understand and decide whether they want to use it or not." (Freight operator)*

Another freight operator suggested that the process could be made easier through using a membership type system and that more communication should also be provided around the risks/benefits of using a relaxation.

Freight operators who didn't have an opinion on the matter stated that it would be better to consult industry or sectors, as the individuals in these sectors would know.

Conversely, industry representatives stated that it may be hard to know when a relaxation should be requested. Industry representatives also viewed the process of requesting a temporary relaxation as straightforward (this was further emphasised in one of the focus groups), but also emphasised that the need for relaxations should be examined before using them, especially from the perspective of safety.

> *"Let's just say that … we think that the rules are there for a reason and the reason the rules are there is for road safety is, I've said on many times during this interview [that] road safety is paramount …. So we're very reluctant to see any increase in relaxing [these]. You know, we see relaxation should be the last resort really of the drivers' hours (Industry representative)*

Another stakeholder expressed concerns that the regulations had been exploited during the COVID pandemic and as a result, did not welcome the relaxations. This stakeholder highlighted the need for an audit trail for organisations who intend to use the relaxations, to ensure that the relaxations are not misused.

> *One thing welcomed in recent years is anyone who uses a relaxation has to record this with DfT and whether they've used it or not. There's a clear public log of who is using the relaxation and [you] can see whether it's legitimate or not. It should be for an emergency or unseen issue; for the driver shortage, it wasn't - we'd been talking about it for 10 years. There was no transparency on who was making the request. With a drivers' hours relaxation, it is made to DfT, the DfT seek views." (Industry representative)*

4.3.3 Research Question 3: Are there any other interventions (i.e. other than the current regulations) that can reduce the safety or fatigue risks?

There was a mixed picture when asking about ways to manage driver fatigue: some described measures that had been put in place, while others did not. The main measure identified was an emphasis from employers on encouraging drivers to take a break to sleep or rest if they feel tired or fatigued.

> *"Any drivers feeling tired know that they can pull over if they are too tired to drive and phone in to say so. The company backs the driver 100% if they cannot keep driving." (Driver)*

Other less common measures respondents mentioned included the following:

- Private healthcare funded by the operator.
- Operator booking hotels for overnight drivers.
- The use of telematics to monitor the drivers' hours and driving performance.
- Ensuring drivers have two consecutive days off a week.
- Visually assessing fatigue levels in drivers when they start or finish a shift.
- Only scheduling in one job at a time so drivers could finish early if needed.

- Recruiting local drivers only to reduce commuting time for short break periods.

4.3.4 Research Question 4: Does the evidence support the need for a change in legislation?

The focus of this research question was whether any industry sectors currently governed under the EU rules might be more appropriately governed by the GB Domestic drivers' hours regulations.

When asked whether there are other industry sectors under the EU drivers' hours regulation which might be better managed under the GB Domestic drivers' hours regulations, there were mixed responses. The industry representatives felt that any industry where driving is a small aspect of the job could use the GB Domestic drivers' hours regulations instead. This includes mobile plants, cranes, door-to-door commercial refuse collection and volumetric cement mixers. One industry stakeholder felt that multimodal transport could also benefit from using the GB Domestic drivers' hours regulations. Multimodal transport refers to using several means of transport (e.g. rail, aviation etc.) to transport goods to their final destination. It was felt that multimodal transport would benefit from being under GB Domestic drivers' hours regulations, as it would bring consistency in how the rules are applied across different transport modes . As this involves different forms of international transport coming out of ports, this presents issues around which rules should apply and when.

Conversely, freight operators expressed the view that door-to-door shop delivery collection, animal waste collections and multi-drop personnel may benefit from being managed under the GB Domestic drivers' hours regulations. However, this preference appeared to be more centred on having one single set of rules rather than two, and therefore reducing confusion as to which regulations to follow.

4.4 Other related factors

During the interviews a number of additional factors that have a bearing on fatigue (or driver hours' regulations in general) were raised by a number of the drivers interviewed. These were:

Period of availability (POA). This is when drivers are required to stay within their vehicle and wait to be called to take part in other work. Note that drivers are unable to use this time as a rest break or to conduct other work. Examples include waiting to unload/load at a depot or port facility, or at a ferry terminal. During these periods there are a variety of remuneration options experienced. However, the salient comment, as relates to this research, is that drivers felt that being restricted to their vehicle (as is involved with POA) made them more tired as they had to stay on alert. Drivers also found the rules around POA confusing. In addition, it can extend the length of time spent in a vehicle in any one day. A similar view was expressed for ferry crossings.

The focus group described how POA and the need to deliver items as soon as possible could leading to safety risks.

Rest facilities. These were considered to have an influence on the quality of rest, and driving time could increase as a result of searching for a suitable facility, especially where overnight security is required. This was seen by some operators as a disincentive for females to enter HGV driving, due to the lack of female toilets and showers. Other participants described the need for safe rest facilities and how the fear of theft from HGVs during the night could cause some HGV drivers to have sleepless nights).

DVSA Enforcement - Many drivers were frustrated by the threat of fines even if they worked or drove one minute longer than allowed before taking a break. However, the driver union representative mentioned during the focus group that there should be stronger consequences for operators breaking the law, to ensure that fewer HGV drivers were being taken advantage of through working excessive hours.

Parking - A frequently raised point was a lack of parking spaces. This was seen as a systemic issue, as some sites that drivers go to have double yellow lines, meaning that no driver can park there legally. In addition, in many towns there are few parking spaces, so drivers must park in lay-bys. This lack of parking spaces was noted to cause undue stress to drivers, as well as adding much time to their day in trying to find a parking space (which made their day less efficient). Participants also described the potential increase in fatigue (due to increased driving time) associated with lack of parking spaces. It was noted that when sites did not allow drivers to park up, this caused drivers additional stress, especially if they had little driving time remaining before they had to take a break. One driver went as far as to say that the lack of parking spaces (and good facilities) was driving women away from the industry as some drivers have to park in a lay-by without toilet facilities.

5 Switch from EU Regulations to GB Domestic Regulations

As part of the qualitative research, a selection of industry representatives and stakeholders were asked which, if any, industry sectors or groups of HGV drivers might benefit from switching from using EU Regulations to using GB Domestic Regulations. This was conducted through focus group discussions and interviews. Organisations represented are shown in Table 15 below.

Table 15: Organisations Represented

Organisations Represented
Batched on Site Association: (Focus Group)
Chartered Institute of Logistics and Transport (UK): (Focus Group)
Driver & Vehicle Standards Agency: (Focus Group)
Heavy Transport Association (Interview)
Logistics UK: (Focus Group)
Road Haulage Association: (Focus Group)
Unite the Union: (Focus Group)

5.1 General Findings

During the focus groups and interviews, representatives identified sectors which they thought might benefit from making a switch from the EU drivers' hour regulations to the GB Domestic hours regulations. The criteria used to provide a framework for consideration were:

- that the majority of the HGV driver's shift is not spent driving the vehicle, i.e. the greater part of the duty is spent on non-driving duties; and
- when either the size or the weight of the vehicle requires road movement restrictions to be in place.

The Construction Industry sector was identified by participating organisations that represented both general and specific HGV driving sectors. The specific vehicles and industries identified were:

- Volumetric concrete mixers.
- Commercial waste collectors.
- Scaffolders' vehicles.

All of these activities were described as ones where driving is not the vehicle operator's primary task. An example was given to demonstrate a typical working shift for a volumetric concrete mixer driver/operator which showed that only about a third of the shift was spent driving the vehicle.

Respondents were of the view that, whilst the individual vehicles used by these industries make them suitable for provisions within EU drivers' hour regulations, the nature of the driver's role make them better aligned with the GB Domestic hours regulations and a switch was seen as a beneficial move for them. While this change was seen as potentially beneficial, participants generally described , with the exception of the Batched on Site Association, they were unaware of any immediate interest within their membership organisations to make this change.

5.2 Heavy Transport Including Abnormal Indivisible Loads

A quite different set of opinions and options were presented by the Heavy Transport Association (HTA), specific to their requirements.

The heavy haulage industry falls into two broad categories of operation, according to the vehicle type:

- Vehicles which operate under the Road Vehicles (Construction and Use) Regulations 1986 (C&U), whereby the vehicles' load is wider than that normally permitted and additional safety measures are put in place, but the vehicle itself is standard dimensions and weights. These vehicles are currently driven under EU Drivers Regulations.
- Vehicles governed by Authorisation of Special Types (General) Order 2003 (STGO) are larger and heavier than those governed by C&U Regulations and require additional measures to be driven on the highway including police authorisation and escort vehicles. These vehicles are currently driven under EU Drivers Regulations. These are explained in detail at https://www.gov.uk/government/publications/special-types-enforcement-guide/special-types-enforcement-guide

Respondents argued that using GB Domestic regulations would not be practical as heavy transport HGV drivers often alternate between C&U and STGO category vehicles and switching between regulations would be confusing and could lead to mistakes being made. However, respondents also felt that vehicles driving under the STGO category only should be exempt from drivers' hours regulations, as is currently the case for mobile cranes specially built, or adapted, for lifting operations.

In support of this argument, the HTA stated that:

- Drivers spend a significant part of their working shift loading and securing loads before driving and supervising unloading at their destination. This could result in driving only accounting for about 30% of a shift.
- Due to the requirement to be escorted at pre-arranged times on pre-arranged routes, combined with growing local movement restrictions, significant time is spent waiting for the authority to move on different parts of the highway to be granted.
- This sector attracts the more experienced operators and drivers, with a strong safety culture and business ethos, and there is no evidence that crane operators – who are

exempt from drivers' hours regulations - are involved in any more incidents than other HGV drivers.

The Heavy Transport Association stated their belief that the current arrangement, whereby light commercial vehicles are used as escort vehicles and so operate under GB Domestic Regulations, should remain.

6 Review of guidance on relaxation of Drivers' Hours Regulation

The final part of this project involved a review of the existing DfT guidance on the relaxation of Drivers' Hours regulations. This review was conducted by TRL and informed by the research findings described earlier in this report. The findings from this review are TRL's, and independent of the Department for Transport.

6.1 Key Findings

The key findings from the guidance review are:

- The review found that concerns had been raised by external stakeholders in responses to calls for evidence, consultations, and debates in the House of Lords. These concerns relate to driver safety and making the industry less desirable to new employees and were raised by unions and HGV drivers.
- There have been concerns raised during the several occasions of drivers' hours relaxation periods which have taken place since the existing guidelines were last updated in October 2020, suggesting that another update is due in light of these.
- Concerns raised regarding the relaxation of restrictions suggest that the guidance be updated to be based on analysis and evidence in terms of the effect on road safety and cumulative fatigue. An approach based on other rules and patterns in other countries may not be the best policy. The evidence is not quite there yet, and we have included the type of data that would be required for more robust results of the quantitative section in Appendix B.
- Based on what has been discovered and set out in other sections below, the evidence base is not strong enough to recommend limits on drivers' hours relaxations by duration (weekly, monthly, or yearly) or sector.
- The evidence is not available to permit the level of granular decision making needed to recommend limits for either extra hours of driving or reductions in weekly rest.
- A risk-based approach should be taken to the safety risk to road users and the impact of not implementing a regulatory relaxation. This approach could be more robust or additional elements could be added such as formal consultation etc. A broad range of stakeholders including drivers' representatives should be formally consulted with, regarding limits in terms of increased driving and working time / reduced rest.

6.1.1 Recommendations based on review of guidance

To achieve the aims below, a series of questions were used to determine whether the guidance should be updated, and whether recommendations can be made. Recommendations relating to each of the research questions are listed below.

The three aims of the Review of Guidance workstream were to:

1. Review the Department's existing guidance for the use of drivers' hours relaxations[27].
2. Make recommendations as to whether this should be updated in the light of the findings of the current research project.
3. Advise whether recommendations can be made on the limits for future drivers' hours relaxations. Also advise on the specifics in terms of the scope and increased time / reduced rest in light of balancing any increased risk of fatigue against the likely desired outcomes (e.g., improvements in completed deliveries).

To note: Recommendations were to balance any increased risk of fatigue against desirable outcomes (e.g., improvements in completed deliveries and tasks as prompted by the purpose of relaxation of the rules).

The following research questions were used to assess existing guidance and the use of drivers' hours relaxations:

Question 1: Are there any recommendations as to whether this guidance should be updated?

Question 2: Are TRL in a position to make recommendations on the limits for future drivers' hours relaxations in terms of scope e.g., duration and sectors?

Question 3: Are TRL in a position to make recommendations on the limits for future drivers' hours relaxations in terms of increased driving and working time / reduced rest?

In relation to Research Question 1 above, the review suggested the following recommendations could be made:

- Another update to the existing guidelines should be considered, in light of concerns raised during the several drivers' hours relaxation periods which have taken place since the existing guidelines were last updated in 2020. These concerns relate to driver safety and making the industry less desirable to new employees. The level of these concerns raised since the last update underpins our recommendation that a further update to the guidance should be considered.
- Concerns raised regarding the recent relaxations of restrictions suggest that the guidance be updated to be based on analysis and evidence in terms of the effect on road safety and cumulative fatigue. Our recommendation is that further analysis/evidence be obtained in order to underpin new guidance. An approach based solely on other rules and patterns in other countries may not be the best policy to ensure driver safety is not compromised. This view is also taken in the Explanatory Memorandum to the Drivers' Hours and Tachographs (Temporary Exceptions) (No.4) Regulations 2021[28].

[27] https://www.gov.uk/government/publications/emergency-exemption-and-temporary-relaxation-of-drivers-hours-and-working-time-rules/emergency-exemption-and-temporary-relaxation-of-drivers-hours-and-working-time-rules

[28] https://www.legislation.gov.uk/uksi/2021/1207/pdfs/uksiem_20211207_en.pdf

In relation to Research Question 2 above:

- Based on what we have discovered and set out in other sections above, the evidence base is not strong enough to make recommendations regarding specific limits to relaxations, in terms of duration (weekly, monthly, yearly) or sector.

In relation to Research Question 3 above:

- On the basis of the evidence gathered and set out above, the evidence is not available to permit the level of granular decision making needed to recommend limits for either extra hours of driving or reductions in weekly rest.
- A risk-based approach should be taken regarding the safety risk to road users and the impact of not implementing a regulatory relaxation. A broad range of stakeholders including drivers' representatives should be formally consulted with, regarding limits in terms of increased driving and working time / reduced rest.

6.2 Background

Note: passenger service vehicles (e.g. buses, coaches and minibuses) are excluded from the scope of this work.

The aim of the 'Emergency exemption and temporary relaxation of drivers' hours and working time rules' guidance[29], last updated 28 October 2020, is to provide industry with detailed information on the drivers' hours and working time rules and how to deal with emergency and urgent situations; in particular, when and how to request a temporary relaxation of the drivers' hours rules.

These rules are in place to protect road safety and the working conditions of drivers, and to reduce the risk of drivers being involved in fatigue-related accidents. Relaxation of the rules should be a last resort.

Industry must continue to put contingency plans in place to deal with emergency and urgent situations before seeking a relaxation of the rules.

The European (EU) drivers' hours rules and the EU working time rules for mobile road transport workers limit the amount of driving and working time that can be carried out by most heavy goods vehicle (HGV) drivers, and around 30% of bus and coach drivers in the UK.

The EU drivers' hours rules do not apply to vehicles used in emergencies or rescue operations and the rules also allow relaxations to be made in urgent circumstances for up to 30 days.

The Great Britain (GB) Domestic drivers' hours rules apply to most goods and passenger vehicles that are exempt from the EU drivers' hours rules.

[29] https://www.gov.uk/government/publications/emergency-exemption-and-temporary-relaxation-of-drivers-hours-and-working-time-rules/emergency-exemption-and-temporary-relaxation-of-drivers-hours-and-working-time-rules

Any relaxation of the EU and GB Domestic drivers' hours rules is now the responsibility of the Department for Transport (DfT).

In urgent cases, for example where time is critical and impacts will be severe if relaxation is not permitted, a temporary relaxation of driving time limits and/or rest periods (from the Domestic rules and/or EU drivers' hours regulations) can be considered. This is usually in response to a specific incident and limited to specific transport operations. In such urgent cases, a relaxation of the enforcement of the rules can be considered. The guidance states that DfT's prior agreement is required before any relaxation can take effect. Any agreed relaxation will be limited in duration and scope to minimise the potential impacts on road safety.

There is no specific power in the Road Transport Working Time Directive or Domestic regulations to allow for relaxations to be made. The European Commission's advice is that this is not an option when granting a temporary relaxation of the EU drivers' hours rules in urgent cases.

6.3 Methodology

The first action was a review of the DfT's existing guidance for road freight operators to request the use of drivers' hours relaxations using the link provided in the Work Order Scope.

To fully review the existing guidance on drivers' hours relaxations, normal restrictions on drivers' hours and working time were examined next. The current full and simplified guidance documents were consulted.

Drivers' hours relaxations have been used several times since the guidance had last been updated, particularly during 2021 and 2022 due to situations arising from driver shortages during COVID lockdown, along with congestion of international freight traffic due to Brexit complications and the cancellation of P&O Ferries services.

Concerns raised by external stakeholders such as unions and HGV drivers due to these extended relaxations, as recorded in responses to calls for evidence, consultations, and debates in the House of Lords, were reviewed. This was in order to determine if recommendations could be made, and if so, the nature of the recommendations.

The final action was a review of the opinions and views on the effectiveness of the existing guidance from freight operators, drivers, and industry representatives. These were obtained from the stakeholder engagement interviews and focus groups carried out as part of the Qualitative Analysis.

The opinions and views of those who had experience of using the existing guidance to request temporary relaxations were of particular interest.

The participants were asked for their opinions and views on changes that could be made to the process of requesting a temporary relaxation, along with their opinions and views on what aspects of future relaxations they would like to see changed.

All interviewees and groups were asked what the most appropriate adjustments to relaxations should be in terms of extra hours of driving or reductions in rest, and their

suggestions for what increased driving limits and reduced rest periods should be in future relaxations.

6.4 Findings

Findings are set out below for each of the questions.

6.4.1 Q1 - Are there any recommendations as to whether this guidance should be updated?

Our finding: Yes

The guidance was last updated on 28 October 2020 to give further guidance on possible relaxations of the working time rules.

Under health and safety legislation, employers and transport operators are required, as far as is reasonably practicable, to ensure the health and safety of their employees while at work and others who may be put at risk by their work activities. In addition, individuals, including drivers, are required to take reasonable care of their own health and safety, and that of others who may be affected by their actions such as other road users and the general public. Concerns were raised by unions and HGV drivers and recorded in responses to calls for evidence, consultations, and debates in the House of Lords that the guidance allowed the relaxation of restrictions on the normal rules on heavy goods vehicles drivers' hours without evidence having been provided **of the effect on road safety.**

Concerns were also raised that the system for drivers' hours relaxation might be abused by drivers and operators to gain commercial advantage. Drivers must continue to record their work either manually or by using a tachograph, noting the reasons why limits have been exceeded, either on the back of record sheets or tachograph printouts. This is essential for enforcement purposes and if they fail to do so, drivers will be issued with a penalty for any offences detected. The Driver and Vehicle Standards Agency (DVSA) checks operator records and monitors the use of relaxations. **Analysis of the outcome of the DVSA checks during the relaxation periods during 2021 and 2022 should be scrutinised for evidence of abuse.**

There is also some blurring in the guidance between the responsibilities of the driver and the operator in deciding when to use the extended hours, and there are concerns that drivers may feel under pressure to use them. **Although drivers should not be expected or asked to drive while tired, a fuller explanation is required as to the conditions in which the exemptions are intended to be used and where the responsibility for implementing the decisions lies.**

In conclusion, it is recommended that the guidance be updated to be based on analysis and evidence in terms of the effect on road safety and cumulative fatigue.

6.4.2 Q2 - Are TRL in a position to make recommendations on the limits for future drivers' hours relaxations in terms of scope e.g. duration and sectors?

Our finding: No

A concern has been raised that the regulations do not provide clarity for drivers on how the temporary exemptions to requirements for breaks will operate. Although the DfT would expect drivers to still ensure they take a 45-minute break after 4.5 hours driving, perhaps this should be made clearer.

Since the DfT is considering the relaxation of a key road safety measure there must be evidence of a significant threat to human and/or animal welfare for a temporary relaxation to be considered. Concerns were also raised that the definition of "where necessary" was vague and its application can be very broad. There were concerns there would be pressure on drivers either from employers or on a personal financial basis to work the extra hours.

Guidance states that relaxations are brought in at the request of industry, but there are concerns that drivers' representatives, unions and associations are not formally consulted. Unite the Union was particularly concerned about HGV drivers not getting "proper rest" during periods when the relaxations were in force.

Based on what we have discovered and set out in other sections above, it is concluded that the evidence base is not strong enough to recommend limits on drivers' hours relaxations by duration (weekly, monthly, yearly) or sector.

6.4.3 Q3 – Are TRL in a position to make recommendations on the limits for future drivers' hours relaxations in terms of increased driving and working time / reduced rest?

Our finding: No

Trade union, Unite the Union, has stated that fatigue is cumulative and a lack of proper rest over several months could result in increasingly serious risks in terms of road safety. The rules allow relaxations to be made in urgent circumstances for up to 30 days, but in recent years the rules have been extended on multiple occasions.

The normal restrictions on drivers' hours as detailed above are based on accident statistics evidence. Under drivers' hours relaxations, DfT's recommended relaxation limits would not normally expect drivers to:

- Drive for more than 11 hours in one day.
- Have less than 9 hours of daily rest.
- Work for more than 7 days before the start of the regular or reduced weekly rest (if operating under the EU rules).
- Have less than 24 hours weekly rest.

These limits are not evidence based and seem to be based on other sets of rules e.g., normal Domestic drivers' hours rules, rules in some EU members states, and patterns permissible for international road transport.

Operators must demonstrate that they will take steps to ensure safety if a relaxation is made. A risk assessment, including measures taken to mitigate risk from fatigue should be undertaken, and these could be used to determine the limits for increased driving and working time / reduced rest in light of balancing any increased risk of fatigue against the likely desired outcomes (e.g., improvements in completed deliveries).

On the basis of the evidence gathered and set out above, it is concluded that the evidence is insufficient to permit the level of granular decision making needed to recommend limits for either extra hours of driving or reductions in weekly rest.

6.5 Review of Guidance Summary

Concerns have been raised (by unions, HGV drivers and during debates in the House of Lords) that the current guidance allows the relaxation of restrictions of the normal rules on HGV drivers' hours without evidence having been provided of the effect on road safety. Many of those raising concerns have expressed a desire to see the guidance updated to be based on a robust evidence base in terms of the effect on road safety and cumulative fatigue.

The review of the guidance, informed by the various research findings described earlier in this report, focused on answering three research questions.

In conclusion, it is recommended that the guidance be updated to be based on analysis and evidence in terms of the effect on road safety and cumulative fatigue.

Based on the findings of this research and review, and the evidence gathered and set out above, it is also concluded that the evidence base is not strong enough to recommend limits on drivers' hours relaxations by duration (weekly, monthly, yearly) or sector; nor does it permit the level of granular decision making needed to recommend limits for either extra hours of driving or reductions in weekly rest.

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Appendix B Quantitative Analysis Modelling

Collisions model

This section provides more detail on the "collisions" negative binomial regression model, built using daily data from 2015-21, described in section 3.6.3.1.

Poisson and negative binomial model forms were compared to see which was a better fit for the data. Analysis (for example, using a likelihood ratio test) confirmed that the negative binomial regression model was more suitable.

The following periods were marked as school holidays in the data:

- Bank holidays for (at least) England
- Christmas holidays: 18th December to 1st January
- Easter holidays: One week either side of Easter Sunday (including the weekends)
- Summer holidays: The 6 weeks before the first Monday in September (not including that Monday)

Holiday dates will vary by school and region, however the above dates capture the major holiday periods across GB.

For the COVID lockdown variable, 'full national lockdown' includes any day for which at least England was in a nationwide lockdown enforced by law[30]:

- 26th March 2020 to 9th May 2020 (inclusive)
- 5th November 2020 to 1st December 2020 (inclusive)
- 6th January 2021 to 7th March 2021 (inclusive)

'Partial lockdown' includes local lockdowns or partial COVID restrictions which applies to every day from 26th March 2020 to 19th July 2021 inclusive which isn't marked as a full lockdown. All other days from 2015 to 2021 are marked as 'no lockdown'. Note that this variable only includes three 'levels' of COVID restrictions. Therefore, there is some uncertainty as to how effectively this variable accounts for all the variation in COVID restrictions that might have affected collisions, such as localised lockdowns with differing traffic levels, or the gradual lifting of restrictions within 'partial lockdown' periods.

The model determines which of the explanatory variables have a significant association with the number of collisions per day, and the extent of that impact, by computing a p-value[31]

[30] See: https://www.instituteforgovernment.org.uk/sites/default/files/timeline-coronavirus-lockdown-december-2021.pdf

[31] The p-value for each variable represents the probability of obtaining the given data under the hypothesis there are no differences in the number of collisions for different levels of that variable. Thus, a very low p-value (close to zero) indicates that that there is a significant difference in the number of collisions for levels of the variable (for example, between the 'driver relaxation' yes and no categories). P-values less than 0.05 are considered statistically significant in this report; this is a commonly applied threshold.

and associated coefficient (with a 95% confidence interval[32]) for each variable level. Most variable levels were identified as being statistically significantly associated with collisions. For example, the model confirmed statistically significant differences in collision numbers between years and certain months, reflecting the downwards trend and quarterly differences seen in Table 6. The model also confirmed a reduction in the number of daily collisions during the COVID 'full national lockdown' periods.

It is important to note that the limitations of the model, particularly the uncertainties around the COVID period (emphasised by the sensitivity analysis, discussed in section 3.6.3.1, where the model was rerun using 2015-19 and 2020-21 data separately and produced different outcomes for the relaxed drivers' hours rule = 'yes' variable level) and the fact that traffic levels are not accounted for directly, mean that the results (p-values and coefficients) for all the variables should be treated with caution. The model would be improved with absolute traffic data, capturing the impacts of COVID-19 more accurately, and this may result in different coefficients for the outcome variables to those presented here.

The explanatory variable levels determined to be significantly associated with collisions are listed in Table 16 below, together with their modelled p-values, coefficients and interpretation. Note that modelled outputs are interpreted relative to the baseline level. A significant association with collisions for each variable level is interpreted as a **significant difference between that level and the baseline level for that variable, keeping all other variables fixed**. The baseline levels for each of the variables are the following:

- Weekday = Monday
- Month = January
- Year = 2015
- Holiday day = 'No'
- Drivers' hours relaxation day = 'No'
- COVID lockdown day = 'No lockdown'

Variable levels not listed below were not determined to be significantly associated with collisions relative to the baseline level for that variable.

Table 16: Explanatory variables in the "collisions" model significantly associated with collisions relative to the variable base level

Variable level	Baseline level	P-value	Coefficient	Interpretation (relative to baseline level)
Tuesday	Monday	0.02	0.056	6% increase in collisions

[32] A 95% confidence interval represents the range in which, if one obtained many different samples, all from the same population, then the estimate of the parameter would fall between these values 95% of the time.

Thursday	Monday	0.04	0.049	5% increase in collisions
Saturday	Monday	< 0.001	-0.97	62% decrease in collisions
Sunday	Monday	< 0.001	-1.37	75% decrease in collisions
March	January	0.04	-0.072	7% decrease in collisions
April	January	0.01	-0.092	9% decrease in collisions
May	January	< 0.001	-0.12	11% decrease in collisions
June	January	0.04	-0.074	7% decrease in collisions
August	January	< 0.001	0.29	34% increase in collisions
2016	2015	< 0.001	-0.11	10% decrease in collisions
2017	2015	< 0.001	-0.24	21% decrease in collisions
2018	2015	< 0.001	-0.33	28% decrease in collisions
2019	2015	< 0.001	-0.41	34% decrease in collisions
2020	2015	< 0.001	-0.55	42% decrease in collisions
2021	2015	< 0.001	-0.63	47% decrease in collisions
Holiday = 'Yes'	Holiday = 'No'	< 0.001	-0.33	28% decrease in collisions
Drivers' hours relaxation = 'Yes'	Drivers' hours relaxation = 'No'	< 0.001	-0.14	13% decrease in collisions
COVID lockdown = 'full national lockdown'	COVID lockdown = 'No COVID lockdown'	< 0.001	-0.32	27% decrease in collisions

For the modelling using the 2015-19 data only, the same variable levels remained significant (relative to the same base levels) with the exception that the only significant months in the 2015-19 model were July and August.

For the modelling using the 2020 and 2021 data, the following variables were identified as being significantly associated with collisions (relative to the same variable base levels as given above, apart from 2020 which was now the base year):

- Weekdays: Saturday and Sunday
- Months: April, May, June and August
- Years: 2021 (the only year apart from 2020 – the base year – in the model)
- Drivers' hours relaxations = 'Yes'
- COVID lockdown = 'Full national lockdown'

KSIs model

This section provides more detail on the "KSIs" negative binomial regression model, built using daily data from 2015-21, described in section 3.6.3.2.

Poisson and negative binomial model forms were compared to see which was a better fit for the data. Analysis (for example, using a likelihood ratio test) confirmed that the negative binomial regression model was more suitable.

The model determines which of the variables in Table 11 have a significant association with the number of KSIs per day, and the extent of that association, by computing a p-value and associated coefficient for each variable level. Many variable levels were identified as significant. However, the same limitations apply to this model as for the "collisions" model (as the same explanatory variables are used), hence the results should be treated with caution.

The explanatory variable levels determined to be significantly associated with KSIs (that is, KSIs in collisions involving an HGV) are listed in Table 17 below, together with their modelled p-values, coefficients and interpretation. Note that modelled outputs are interpreted relative to the baseline level. A significant association with KSIs for each variable level is interpreted as a **significant difference between that level and the baseline level for that variable, keeping all other variables fixed**. The baseline levels for each of the variables are the following:

- Weekday = Monday
- Month = January
- Year = 2015
- Holiday day = 'No'
- Drivers' hours relaxation day = 'No'
- COVID lockdown day = 'No lockdown'

Variable levels not listed below were not determined to be significantly associated with KSIs relative to the baseline level for that variable.

Table 17: Explanatory variables in the "KSIs" model significantly associated with KSIs relative to the variable base level

Variable level	Baseline level	P-value	Coefficient	Interpretation (relative to baseline level)
Saturday	Monday	< 0.001	-0.71	51% decrease in KSIs
Sunday	Monday	< 0.001	-1.08	66% decrease in KSIs
July	January	0.029	0.13	14% increase in KSIs
August	January	< 0.001	0.39	48% increase in KSIs
September	January	0.015	0.14	15% increase in KSIs
2016	2015	< 0.001	-0.15	14% decrease in KSIs
2017	2015	< 0.001	-0.19	17% decrease in KSIs
2018	2015	< 0.001	-0.20	18% decrease in KSIs
2019	2015	< 0.001	-0.27	24% decrease in KSIs
2020	2015	< 0.001	-0.40	33% decrease in KSIs
2021	2015	< 0.001	-0.64	47% decrease in KSIs
Holiday = 'Yes'	Holiday = 'No'	< 0.001	-0.32	28% decrease in KSIs
Drivers' hours relaxation = 'Yes'	Drivers' hours relaxation = 'No'	0.048	-0.088	8% decrease in KSIs
COVID lockdown = 'full	COVID lockdown =	< 0.001	-0.36	27% decrease in KSIs

national lockdown'	'No COVID lockdown'

National Highways Fatals data – further information

The National Highways Fatals database captures in-depth collision data on the events of fatal collisions on the Strategic Road Network (SRN), including an in-depth assessment of the root cause and potential countermeasures for every collision.

Data was available for this analysis on collisions up to 2019. Approximately 150 collisions per year are captured in this database, representing 70% of all fatal cases on the SRN between 2015 and 2019. The data includes a slightly lower percentage (57%) of collisions from 2019 as this data was still being processed at the time of writing.

Police forensic collision investigation reports are used as the source material for the independent safety-focused investigations that are coded into the database to form an analysable evidence source to inform National Highways' road safety policy. Some cases are supplemented by further information, such as witness statements, toxicology reports and tachograph analysis, which can aid in identifying the true nature of the collision's causation in much greater detail than other collision statistics (e.g. STATS19).

Appendix C Stakeholder Engagement Supplementary Information

Ethics

The interviews were undertaken in accordance with TRL's Ethics policy[33]. As the stakeholders were referring to information within their professional expertise, a full ethics review was not required, though a data protection assessment was completed. Interviewers collected written or verbal consent from the participants before the interviews.

Information provided to participants

Ahead of the interviews, participants were provided with the following:

Research background and objectives

A brief background to the study was provided in the invitation email, the content of which can be found in the Appendices.

Participant Information and Consent forms

A brief background to the study, along with further information on the participant's role and privacy information was provided to the stakeholders who agreed to be interviewed. They were asked to complete and return the consent form prior to the interview. Where written consent was not provided beforehand, the interviewer collected verbal consent before starting the interview.

Interview topic guide

This comprised of a list of the questions that were asked during the interview. This was so that they could consider their answers ahead of time and discuss them with colleagues (if desired) to provide more well-rounded responses.

Three topic guide versions were developed to tailor the questions to the appropriate stakeholder group. These were designed by using the research questions as a guide and assessing which aspects of the research question would be relevant for each. The topic guide was reviewed and agreed upon by DfT. Table 18 shows the topic guide used for each of the stakeholder categories.

Table 18: The topic guide used for stakeholder interviews

Stakeholder	Guide Used
Freight operators	Freight operator topic guide (Appendix D)
HGV Drivers	Driver topic guide (Appendix E)
Freight operator association	Industry stakeholder topic guide (Appendix F)
HGV Driver Associations	Industry stakeholder topic guide (Appendix F)
Government/Enforcement bodies	Industry stakeholder topic guide (Appendix F)

[33] TRL | Privacy Notice

The topics discussed in the guide included:

- Questions specifically related to the stakeholder, for example, their role in relation to drivers' hours or the number of hours that drivers were driving
- Views on the current EU drivers' hours regulations and GB Domestic drivers' hours regulations and their effectiveness
- Experiences with the process of implementing the regulation relaxations
- Advantages and disadvantages of the relaxations, especially on driver's fatigue and wellbeing
- Any changes that they would make to the process of requesting relaxations to the regulations
- Any changes that they would make for the process of requestion relaxations

The guides are located in the Appendices of this report (Appendix D, Appendix E and Appendix F).

Recruitment approach

A variety of recruitment methods were used. We contacted a selection of trade bodies, government departments and agencies known to DfT and TRL in order to recruit enough stakeholders for the interviews. We also made contact with drivers through Unite the Union and direct approaches to freight operators and drivers.

Drivers' hours regulations affect a variety of industry sectors. Therefore, in order to maximise representation, a variety of recruitment outreach methods were used. A diverse selection of trade bodies and government departments and agencies were contacted directly through existing DfT and TRL channels. Getting a diverse selection of drivers was a more challenging exercise, due to them being mobile and seldom with a business email address. Due to this, HGV drivers were recruited to participate through a combination of assistance from Unite the Union, and TRL making direct approaches to known businesses with which they were in contact for other current and previous projects. These included businesses that had engaged with TRL during the EcoStars project. The Road Haulage Association (RHA) also provided some contacts where driver/managers were interviewed. Every effort was made within the realms of the project budget to provide a variety of industry sectors, which was broadly achieved. Self-employed drivers and micro businesses were not able to be engaged, as they are seldom members of trade associations or unionised. That said, this was partially addressed as SME operators (including transport managers still driving HGVs as part of their duties) were able to be interviewed. Some of the trade bodies/associations/operators provided more than one interviewee.

Format of interviews

Interviews were conducted between September and December 2022, lasting between 20 to 45 minutes, depending on the stakeholder's contributions. Interviews were conducted via Microsoft Teams, in person, or via telephone to ensure that the interviews could be

conducted without disrupting the stakeholder's' work commitments, especially the drivers. Interviews taking place on Microsoft Teams were recorded. Note that interviews taking place via telephone or in person were not recorded but extensive notes were taken. The interviews were semi-structured (i.e., the interviewer mainly kept to the questions within the topic guide but occasionally asked additional questions to check their understanding or pursue other relevant lines of questioning not in the topic guide). During the interviews, the interviewer made summary notes, which formed the basis of the comment. When important quotes were made during the interviews, the interviewer ensured that they had written down the quotes verbatim if it was a phone/face to face interview, or listened to the recording afterwards to ensure that they had written down the correct quote.

Appendix D Freight operator topic guide

Introductory questions

1. Can you provide an overview of your job role/ organisation/sector you work in and how this relates to discussions on drivers' hours regulation?

2. Can you provide an overview of the general working patterns for your drivers?
How long are the working shifts? What proportion of the working time is driving and non-driving? How many hours do they typically drive per week? How many hours are worked at night (e.g., 11pm-6am)?
General feedback on the EU drivers' hours regulation and GB domestic driver hour rules

3. What is your view of the current EU drivers' hours regulations?
a) What works well?
b) Is there anything that could be improved?
c) Are these elements specific to your sector or something you have noticed in the industry more generally?

4. What is your view of the current GB domestic driver hour rules?
a) What works well?
b) Is there anything that could be improved?
c) Are these elements specific to your sector or something you have noticed in the industry more generally?

5. Do you have a preference for one of the two sets of drivers' hours regulations/rules? If yes, can you elaborate on the reasons for the preference.

6. In your view, are there any sectors who are currently governed under the EU drivers' hours regulation who might be better managed under the GB domestic driver hour rules? For example, sectors where driving is a limited element of the work

7. Is there a working time regulations 'opt out agreement' in place with your drivers? Please elaborate on why these have been put in place, or why not.

8. Other than the requirement to comply with drivers' hours regulations/rules, does your organisation have any other measures in place to manage driver fatigue?
If yes, what are these measures?

Feedback on the temporary relaxations to EU drivers' hours regulation
"In recent years there have been instances of temporary relaxations to the application of the EU drivers' hours regulations both specific exemptions (LPG deliveries) and national derogations (e.g., Covid 19 and driver shortages).
The DfT has issued detailed guidance to external stakeholders on the process to follow to request a temporary relaxation of the drivers' hours regulations.

There have been significant variations in the levels of relaxations as outlined in the two examples below."
Example 1: Relaxation in response to urgent situations arising from the cancellation of P&O Ferries services and the congestion of international freight traffic (9th April 2022 to 22nd May 2022)
During these temporary relaxations of the EU drivers' hours regulations the rules were adjusted as follows:

- *replacement of the EU daily driving limit of 9 hours with one of 11 hours*
- *reduction of the daily rest requirements from 11 to 9 hours*
- *lifting the weekly (56 hours) and fortnightly driving limits (90 hours) to 60 and 96 hours respectively*
- *postponement of the requirement to start a weekly rest period after 6 x 24-hour periods, which was temporarily replaced with a requirement to start the weekly rest period after 7 x 24-hour periods, although 2 regular weekly rest periods or a regular and a reduced weekly rest period were still required within a fortnight*

Example 2: Relaxation in response to driver shortages and COVID 19 (4 extended periods of relaxation over 2021/22)

- *The daily driving limit can be increased from 9 hours to 10 hours up to 4 times in a week (instead of the normal permitted increase to 10 hours twice a week) – all other daily driving limits remain at 9 hours*

OR

- *The replacement of the requirement to take at least 2 weekly rest periods including at least one regular weekly rest period of at least 45 hours in a 2-week period, with an alternative permissible pattern of weekly rest periods as specified below, and an increase to the fortnightly driving limit from 90 hours to 99 hours*

9. Have you had any direct experience of the temporary relaxations of the drivers' hour regulations?
If yes:
a) What were the advantages and disadvantages of the relaxations?
b) Did you receive any feedback from drivers?
Did drivers raise any concerns or express any views on the temporary relaxation? Do you feel there were any implications in relation to road safety and fatigue?
c) Do you have any suggestions on future changes that could be made to the process of requesting a temporary relaxation to the drivers' hours regulations?
If no: Why not?
e.g., no business requirement for the relaxation, issue with the process etc.

10. In your view, what (if any) changes would you make for future relaxations of the rules?
a) Please rank the following adjustments from most to least appropriate, in order to address the need for a relaxation, whilst preserving acceptable levels of safety and driver welfare:

- increasing daily driving limit
- reducing daily rest requirements
- lifting weekly/fortnightly limits

- postponement of weekly rest period

b) What (if any) are the potential positive and negative impacts of each of the above adjustments?

c) Using the detailed examples above as a starting point, do you have any suggestions on what you think the increased driving limits and reduced rest periods should be for future relaxations?

Should this vary depending on length and scale of the relaxation?

Closing question

11. Do you have any further comments to make of relevance to this discussion?

Are there any changes to the driver hour rules (in addition to those discussed above) that would be beneficial to the industry?

Appendix E HGV drivers topic guide

Introductory questions

1. Can you provide an overview of your job role/organisation/sector you work in and how this relates to discussions on drivers' hours regulation?

Please also outline if your role includes waiting periods for vehicles to be loaded/unloaded; ferry crossings or anything similar.

2. Can you provide an overview of your work patterns?

How long are your working shifts? What proportion of your working time is driving and non-driving? How many hours do you typically drive per week? How many hours are worked at night (e.g., 11pm-6am)?

General feedback on the EU drivers' hours regulation and GB domestic driver hour rules

3. In your experience, how effective is the current EU drivers' hours regulations?

Please provide your opinion of the effectiveness of the regulation/rules in relation to: fatigue, road safety, health and wellbeing, work/life balance, and job satisfaction.

a) What works well?

b) Is there anything that can be improved?

c) Are these elements specific to your sector or something you have noticed in the industry more generally?

4. In your experience, how effective is the GB domestic driver hour rules?

Please provide your opinion of the effectiveness of the regulation/rules in relation to: fatigue, road safety, health and wellbeing, work/life balance, and job satisfaction.

a) What works well?

b) Is there anything that can be improved?

c) Are these elements specific to your sector or something you have noticed in the industry more generally?

5. Do you have a preference for one of the two sets of drivers' hours regulations/rules? If yes, can you elaborate on the reasons for the preference.

6. In your view, are there any sectors who are currently governed under the EU drivers' hours regulation who might be better managed under the GB domestic driver hour rules?

For example, sectors where driving is a limited element of the work

7. Have you signed a working time regulations 'opt out agreement' with your employer? We will keep your response anonymous.

8. Other than the requirement to comply with drivers' hours regulations/rules, does your organisation have other measures in place to manage driver fatigue?

If yes, what are these measures?

Feedback on the temporary relaxations to EU drivers' hours regulation

In recent years there have been instances of temporary relaxations to the application of the EU drivers' hours regulations both specific exemptions (LPG deliveries) and national derogations (e.g., Covid 19 and driver shortages).

The DfT has issued detailed guidance to external stakeholders on the process to follow to request a temporary relaxation of the drivers' hours regulations.

There have been significant variations in the levels of relaxations as outlined in the two examples below.

Example 1: Relaxation in response to urgent situations arising from the cancellation of P&O Ferries services and the congestion of international freight traffic (9th April 2022 to 22nd April 2022)

During these temporary relaxations of the EU drivers' hours regulations the rules were adjusted as follows:

- *replacement of the EU daily driving limit of 9 hours with one of 11 hours*
- *reduction of the daily rest requirements from 11 to 9 hours*
- *lifting the weekly (56 hours) and fortnightly driving limits (90 hours) to 60 and 96 hours respectively*
- *postponement of the requirement to start a weekly rest period after 6 x 24-hour periods, which was temporarily replaced with a requirement to start the weekly rest period after 7 x 24-hour periods, although 2 regular weekly rest periods or a regular and a reduced weekly rest period were still required within a fortnight*

Example 2: Relaxation in response to driver shortages and COVID 19 (4 extended periods of relaxation over 2021/22)

- *The daily driving limit can be increased from 9 hours to 10 hours up to 4 times in a week (instead of the normal permitted increase to 10 hours twice a week) – all other daily driving limits remain at 9 hours*

OR

- *The replacement of the requirement to take at least 2 weekly rest periods including at least one regular weekly rest period of at least 45 hours in a 2-week period, with an alternative permissible pattern of weekly rest periods as specified below, and an increase to the fortnightly driving limit from 90 hours to 99 hours*

9. Have you had any direct experience of the temporary relaxations of the drivers' hour regulations?

If yes:

a) What in your experience was the impact of driving under the temporary relaxations? Please provide the impact of the relaxation in relation to: fatigue, road safety, health and wellbeing, work/life balance, and job satisfaction.

b) Do you have any feedback on how future relaxations could be implemented? What worked well for the industry? What worked well for you (e.g., work life balance, working conditions etc.)? What didn't work well? Any recommendations for improvement?

10. In your view, what (if any) changes would you make for future relaxations of the rules?

a) Please rank the following adjustments from most to least appropriate, in order to address the need for a relaxation, whilst preserving acceptable levels of safety and driver welfare:

- increasing daily driving limit
- reducing daily rest requirements
- lifting weekly/fortnightly limits

- postponement of weekly rest period

b) What (if any) are the potential positive and negative impacts of each of the above adjustments?

c) Using the detailed examples above as a starting point, do you have any suggestions on what you think the increased driving limits and reduced rest periods should be for future relaxations? Should this vary depending on length and scale of the relaxation?

Closing question

11. Do you have any further comments to make of relevance to this discussion?

Are there any changes to the driver hour rules (in addition to those discussed above) that would be beneficial to the industry?

Appendix F Industry Stakeholder topic guide

Introductory questions

1. Can you provide an overview of your job role/organisation and how this relates to discussions on drivers' hours regulation?

General feedback on the EU drivers' hours regulation and GB domestic driver hour rules

2. Are you currently driving to EU drivers' hours regulations? If so, what are your view of the current EU drivers' hours regulations?
a) What works well?
b) Is there anything that could be improved?

3. Are you currently driving to GB domestic drivers' hours rules? If so, what are your view of the current GB domestic driver hour rules?
a) What works well?
b) Is there anything that could be improved?

4. Do you have a preference for one of the two sets of drivers' hours regulations/rules? If yes, can you elaborate on the reasons for the preference.

5. In your view, are there any industry sectors who are currently governed under the EU drivers' hours regulation who might be better managed under the GB domestic driver hour rules? For example, sectors where driving is a limited element of the work.

Feedback on the temporary relaxations to EU drivers' hours regulation

In recent years there have been instances of temporary relaxations to the application of the EU drivers' hours regulations, both specific exemptions (LPG deliveries), and national derogations (e.g., Covid 19 and driver shortages).

The DfT has issued detailed guidance to external stakeholders on the process to follow to request a temporary relaxation of the drivers' hours regulations.

There have been significant variations in the levels of relaxations as outlined in the two examples below.

Example 1: Relaxation in response to urgent situations arising from the cancellation of P&O Ferries services and the congestion of international freight traffic (9th April 2022 to 22nd April 2022)

During these temporary relaxations of the EU drivers' hours regulations the rules were adjusted as follows:

- *replacement of the EU daily driving limit of 9 hours with one of 11 hours*
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- *lifting the weekly (56 hours) and fortnightly driving limits (90 hours) to 60 and 96 hours respectively*
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Example 2: Relaxation in response to driver shortages and COVID 19 (4 extended periods of relaxation over 2021/22)

- *The daily driving limit can be increased from 9 hours to 10 hours up to 4 times in a week (instead of the normal permitted increase to 10 hours twice a week) – all other daily driving limits remain at 9 hours*

OR

- *The replacement of the requirement to take at least 2 weekly rest periods including at least one regular weekly rest period of at least 45 hours in a 2-week period, with an alternative permissible pattern of weekly rest periods as specified below, and an increase to the fortnightly driving limit from 90 hours to 99 hours*

6. In your view, what (if any) changes would you make to the process of requesting a temporary relaxation to the drivers' hours regulations?

7. In your experience, what are the implications of the relaxations to the drivers' hours regulations?

Are there any noticeable improvements? Are there any impacts in terms of levels of violations and accidents? Are you aware of any impacts on driver welfare? Are you aware of any feedback from drivers on the relaxation of driver hours?

8. In your view, what (if any) changes would you make for future relaxations of the rules?

a) Please rank the following adjustments from most to least appropriate, in order to address the need for a relaxation, whilst preserving acceptable levels of safety and driver welfare:

- increasing daily driving limit
- reducing daily rest requirements
- lifting weekly/fortnightly limits
- postponement of weekly rest period

b) What are the potential positive and negative impacts of each of the above adjustments?

c) Using the detailed examples above as a starting point, do you have any suggestions on what you think the increased driving limits and reduced rest periods should be for future relaxations? Should this vary depending on length and scale of the relaxation?

Closing question

9. Do you have any further comments to make of relevance to this discussion?

Are there any changes to the driver hour rules (in addition to those discussed above) that would be beneficial to the industry?

Research into Drivers' Hours and Working Time

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