



Transport for London

INVESTIGATING THE CONSTRUCTION INDUSTRY'S USE OF HGV TYPES

Final Report



EXECUTIVE SUMMARY

This study was initiated to look into the potential for using heavy goods vehicles (HGVs) with a higher payload to carry bulk construction materials in London, with a view to reducing overall HGV volumes. The study undertook desktop research and consultation to look at the barriers to the use of larger vehicles. Several recommendations have been made which have the potential to reduce the number of construction vehicles on London's roads.



OBJECTIVES

The overall objective was to conduct a technical comparison into the use of rigid versus articulated HGV combinations, within the construction industry - including the reasons for use of each type, barriers to entry and a commercial, environmental and safety benefit analysis.

The specific objectives of the project included:

- Undertake technical research on a range of construction vehicle operators within London and Europe to understand the reasons for using specific HGV types.
- Quantify and compare the commercial, environmental, operational and safety benefit/s of each variant
- Outline who receives the commercial gain from any improved efficiency
- Investigate any infrastructure, construction or disposal site barriers to use either of the HGV types specified
- Identify and case study any innovations which have addressed previous limitations/concerns on vehicle choice i.e. sliding floors
- Identify and case study operators using articulated HGVs in comparison with an articulated variant
- Engage with industry and trade associations.

SUMMARY OF FINDINGS

The review confirmed that the rigid vehicles dominate bulk construction movements in London. This was true for both tippers and mixers. While the industry and its decision making processes are complex, the reason for the dominance of rigid vehicles can be summarised as industry concerns about safety and access within sites.

Site Safety

Regarding safety, the concern is that tippers can and do tip over while unloading. The data on the incidence of tip overs, particularly the relative incidence between rigid and articulated tippers, is poor. While incidents undoubtedly happen it seems that they are rare, and almost always avoidable.

Some operators are content to use articulated tippers and ensure safety by checking construction sites, applying best practice for safe unloading, and training drivers appropriately. Others use articulated vehicles with safety adaptations or precautions ranging from non-stick liners to moving floors and tipping frames. TfL's construction safety initiative, CLOCS, is setting standards for construction sites so that conditions can be assessed and improved for safe movement on site.

Access

Articulated vehicles routinely access almost all construction sites carrying products such as windows or structural beams.

Within sites, while articulated and rigid tippers have similar turning circles, it is true that articulated vehicles need slightly more space to unload and cannot climb the steepest gradients in poor conditions. In most cases, minor site adjustments can make sites accessible for both rigid and articulated HGVs.

Demolition Material and Excavated Spoil

These products present particular challenges. Some materials are “sticky” and so difficult to tip. Sites at both ends of the journey frequently have very poor conditions with unmade roads.

Ready Mixed Concrete

Articulated mixers are particularly rare in London. Interviewees informed the study that batching plants in the city are often small and hard to access. Rigid mixers are well suited to the scale of most orders. However, there is evidence that articulated mixers are a cost effective and efficient solution for big pours, and there are signs of industry acceptance of articulated mixers in this role.

Benefits of Using Larger Vehicles

The benefits to the construction industry are clear: potentially a 30% reduction in the cost per tonne for transport when using standard articulated tippers compared to standard rigid tippers. Using moving floor semi-trailers reduces the benefit to 20%.

For society as a whole the benefits are even greater – potentially a 37% reduction in vehicle numbers (30% for moving floor), and a 32% reduction in CO2 emissions (25% for moving floor). Fewer vehicle movements will result in lower emissions, reduced congestion, and improved highway safety.

Industry Take Up

The construction industry in London is already seeing a growth in the use of articulated vehicles for bulk transport. The main focus is on new investment in moving floor semi-trailers, although some operators are happy to use standard articulated tippers with suitable precautions.

Moving or sliding bogies are a relatively recent introduction that seem to offer useful benefits.

Initial growth has been in the captive market between permanent facilities controlled by the major aggregates companies. But materials suppliers and hauliers who have invested in articulated vehicles are demonstrating those vehicles to contractors with the aim of widening their use.

Key Challenge

The key challenge is to support hauliers and materials suppliers in their efforts to persuade contractors and developers that the benefits of using articulated vehicles outweigh any actual or perceived costs or safety concerns.

Potential Measures

Improving the average payload of bulk vehicles carrying construction traffic can be seen as a good example of where interventions from TfL can accelerate an industry trend which is already visible. There is a window of opportunity as current use of articulated vehicles is focussed on core flows where materials suppliers can control volume and secure investment in new vehicles. Extending this success to the wider construction industry faces barriers of perception and habit.

A range of measures were suggested by interviewees or in discussion with stakeholders. These range from simply providing information, to restrictions on vehicle types.

Information

TfL has achieved significant success by encouraging the sharing of best practice in logistics, particularly through the FORS and CLOCS programmes. Through commissioning research and publicising case studies TfL has supported transport businesses to improve safety, compliance, and environmental performance.

This report has clearly identified and addressed the concerns which have deterred greater use of articulated vehicles in the construction sector. Circulation of the report and its case studies will be a first step in providing information to show that articulated vehicles can be used efficiently and safely.

The effectiveness of the case studies will be enhanced if they are available on the internet and if they feature in FORS and CLOCS training and publicity. The case studies should also be circulated to planners, consultants, and developers.

Promotion

A step up from providing information passively is to consider arranging workshops and presentations to actively promote the use of articulated bulk vehicles. This could include Best Practice workshops for construction businesses.

Construction Logistics Plans

CLPs are TfL's primary tool to promote and require construction logistics best practice for planned developments. TfL's new guidance for CLPs is more prescriptive than previous versions. In particular, developers and contractors are expected to demonstrate that they have assessed a range of best practice options to reduce the impact of construction traffic.

CLPs should have clear guidance on the costs, benefits, and safe usage of articulated vehicles. Businesses completing CLPs should be expected to use articulated vehicles unless they can demonstrate clear reasons why use would not be appropriate.

RECOMMENDATIONS

The construction industry (suppliers, contractors, hauliers, and developers) is open to the idea of increasing the number of articulated bulk vehicles carrying construction materials in London. While the industry itself is making progress on this issue, with evidence of recent innovation, there are obstacles including concerns about safety and access, even though these can be addressed.

A key objective should be to discourage contractors or construction sites from any blanket restriction on articulated vehicles. Open access should be the norm, and restrictions should only be imposed if there is evidence that this is necessary.

Recommendation 1: Construction Logistics Plans

Construction Logistics Plan Guidance should be modified with the addition of a section (as proposed in the report) to the Planned Measures that should be agreed and committed to during the planning application process.

Recommendation 2: CLOCS Site Assessment Ratings

The newly developed CLOCS Site Assessment Ratings will be a useful tool to help suppliers to understand ground conditions at new sites, and to help developers and contractors to plan sites to allow a larger range of HGVs to be received. The Site Assessment Ratings are primarily aimed at reducing the use of "off road" rigid vehicles (N3G standard). In itself this is useful as it highlights sites with poor ground conditions. However, this is not enough information for suppliers to decide whether articulated vehicles can be used or not.

One option would be to add a field to the assessment "Site is suitable for unloading from articulated tippers and mixers". This could be added as a star to the ratings (e.g. CLOCS 1*). This would be a useful interim measure.



Recommendation 3: Best Practice Information and Advice

This report includes information and case studies which make it clear how articulated vehicles can be operated for construction materials safely and efficiently. Information in this report also clearly identifies the benefits to the industry and to London. It is recommended that:

- Information from this report is circulated widely across the construction industry.
- TfL arranges two or three demonstration days, showing the safe operation of articulated vehicles.
- Information on the benefits and safe operation of articulated vehicles is provided on the Construction Logistics, FORS, and CLOCS websites.
- This report is included as a case study on the Safe Quarry and MPA websites.
- Borough councils and developers should be invited to a presentation explaining the benefits of articulated vehicle operations and how it can be encouraged

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