

Aggregate Industries Logistics

John Bolas – Feb 2014

General overview

Thousands of deliveries are made each working day on well maintained vehicles, where the risks have been identified and provision made for the safe discharge of material to take place.

However we all have a part to play in improving the safe delivery of construction materials. The aim of this guide (full document available on request) is to help all involved in the process to review their operation and see where improvements can be made.

The safety process starts in a number of places and with a number of people. You need to establish what you need to do and how your acts or omissions will affect the final outcome



The Law - Tipping Guidance Guide

Both the vehicle operator and the driver may be held responsible for a serious or fatal injury to either themselves or others resulting from the driver not discharging his load or operating his vehicle in a safe manner. They could also be contravening health and safety law.

Employers, owners and managers of both haulage businesses and sites have a responsibility to provide and maintain safe systems of work, and to take reasonably practicable precautions to ensure health and safety of all workers and members of the public who may be affected by their activities. They should ensure safe systems of work for discharging a load and operating tipping vehicles are understood, and procedures are in place to check that they are followed.

All drivers, including the self employed, have a responsibility for their own health and safety, and that of other people who could be affected by their actions.

Fatality – Walton on the Wolds, Background



- 3rd October 2006, driver arrives on site and asks where to tip
- Worker (first day on site covering for someone else), walks down the site with the lorry driver and starts to work the mini excavator at the side of the truck
- The truck which was at the stockpile preceded to raise his body
- The vehicles rear wheels sink in soft ground and vehicle overturns onto the mini digger killing the worker.

Fatality – final conclusion

- Leicester Crown Court heard the workplace transport risk assessment failed to properly consider tipping operations and the specific risks of vehicles overturning. The tipping area had not been adequately assessed as being safe for tipping operations, was not sufficiently level and had been poorly prepared
- HSE discovered deliveries of bulk materials were made without adequate supervision, a banksman or an exclusion zone around the vehicle during tipping and in addition, pedestrians were not kept away from vehicles, particularly during tipping
- J H Hallam (Contracts) Ltd was fined £80,000 and ordered to pay £20,000 costs. J & H Construction Ltd was fined £50,000 and ordered to pay £20,000 costs
- In this case the principal contractor and the subcontractor failed to recognise the potential risk and regularly allowed lorries to tip without the aid of a banksman close to the site compound and visitor car park. J H Hallam (Contracts) Ltd should have been aware of the potential risk as it was involved in a previous incident where a skip lorry overturned on uneven ground
- "This has been a long and complex investigation, however the result will hopefully serve as a warning to others to review their arrangements for deliveries and avoid similar tragic incidents in future."

Fatality at Widnes



Fatality at Widnes

- **A concrete manufacturer has been fined £100,000 after a worker was crushed to death when a tipper truck overturned.**
- Plasmor (Halton) Ltd in Widnes, was prosecuted by the Health and Safety Executive (HSE) following the death of David Astley, 56, from Ellesmere Port. He was crushed when a trailer full of limestone dust fell on him as it was being emptied on 13 July. The HSE said Mr Astley's death "could have been avoided" had a better vehicle safety system been in place. Liverpool Crown Court heard Mr Astley was tipping the limestone on to the site when another driver arrived at the plant with a second load.

Fatality at Widnes

- The second driver was told to empty his truck in the same place but, as he lifted the trailer, it overturned and fell on top of Mr Astley's cab. The court was told the tipper trucks arriving on the site could weigh up to 44 tonnes and the risk of vehicles overturning is well known in the manufacturing and construction industry.
- The HSE investigation found Plasmor, of Tanhouse Lane, Widnes had failed to carry out a risk assessment for the work and should have made sure vehicles were kept a safe distance apart. The person who directed the drivers on to the site had also not received suitable training

Fatality at Widnes

- Plasmor (Halton) Ltd was fined £100,000 and ordered to pay prosecution costs of £28,600 after pleading guilty to a breach of the Health and Safety at Work Act 1974.
- Speaking after the hearing, HSE inspector Jane Carroll said: "Plasmor has since changed its procedures so staff are properly trained and tipper trucks are kept at least 20 metres apart.
- "If this system had been in place at the time of the incident then Mr Astley's death could have been avoided."

What are we doing to improve Safety?




- Improved induction process – intro to PIC's or equivalent
- Consistent approach with Haulier and Cardinal Rules “H&S Booklets”
- MPQC and Drivers CPC courses
- Interactive Safety Tours
- Incident investigation by AI & Hauliers inc RTI's
- Monthly Safety conference calls
- Haulage specific recorded incident with Entropy Alerts
- Improved vehicle specifications
- Haulier road-shows, briefings & scorecard

5. Aggregate Industries
driver induction and
MPQC card 16

Aggregate Industries approved driver card

All drivers receive an Aggregate Industries induction; this book is issued at the induction and should be kept with the driver.

An Aggregate Industries 'approved driver' card will be issued and the driver will be required to carry the card and be able to produce when asked. **Failure to do so could result in the load being refused.**




Aggregate Industries Approved Driver

James Duncan
TIPPER
Expires: 24/11/2014
Card Number: 1

MPQC driver skills card

All drivers delivering materials on Aggregate Industries' behalf must be in possession of a valid MPQC card (formerly EPIC), or be able to show documentation of a course booking.

Drivers must be able to produce their MPQC card when asked, **failure to do so could result in being refused a load.**



mpqc Driver Skills Card

Carl Marshall
TIPPER
Registration No: 48271
Expires: 25/09/2015

Site inductions

Each site may have different site specific rules; therefore an induction on each site will be given on the first visit and recorded at the back of this booklet. Drivers receive a site induction at least annually, as site layouts are changed, vehicle routes amended, and stockpiles or hazards relocated as the site develops. Therefore the retention of this booklet is key as evidence of inductions.

Remember to carry your cards

What are You doing?

- Do you visit all sites/dumps landings prior to orders being placed and deliveries being made
- Do you have risk assessments/safe systems in place for these sites – do they include ground conditions and overhead obstructions
- Do you give precise delivery address including any special instructions
- Do you inspect the site during deliveries as ground conditions can change during the course of the job.

Tipping point examples



Minimum standard - no visible cross-fall or accumulation of material in front of the stockpile



Unacceptable standard

Causes for overturns

Whilst some vehicle overturns are caused by a specific single factor, it is often the case that they result from a number of factors combining at the same time to create instability.

These factors apply to all types of tipping vehicle:-

- **Material Loading** – Central and evenly loaded
- **Sticking Loads** – Time of year, weather etc...
- **Partial Discharge** – Known as “load Shear”
- **Soft / uneven ground** – Temp surface & $>3^\circ$ cross-fall
- **Weather Conditions** – High winds etc...
- **Driver Input** – More detail on next slide!



Driver Input

In most delivery situations it will be the drivers' Ultimate responsibility to decide whether it is safe to tip. They should adhere to the following basic principles:

- Ensure that the vehicle is correctly positioned ready to tip safely
- Inclinometers can give a false sense of security.
- Customer Supervision or Not!
- Before tipping.
- Whilst tipping.
- **Summary: If you feel its not safe "Do Not Tip" and seek guidance straight away.**



Permanent Sites.

These are sites which are set up to operate as a fixed installation receiving and, possibly, loading bulk materials on a day to day basis.

On these sites it should be the case that tipping points can be set up and controlled to maintain safe tipping areas or locations.

Temporary Sites.

These may be short or long term depending on the length of the project that requires to delivery and possible loading out of materials.

These sites include all construction works, from small domestic sites up to and including large complex projects. By the nature of the projects the tipping points may well move around the site. Ground conditions can and do change from week to week and day to day depending on weather conditions as well as local construction works close to allotted tipping points. ***Note: As previously stated driver needs to be in control of their actions and if deemed to be unsafe STOP and seek further guidance!!***

Guidance for site tipping conditions

Optimum	Minimum
Hard Surface , concreted or asphalt.	Loose but hard surface , made up ground of compacted sub-base, quarry floor etc.
No surface defects , such as pot holes, level surface with a minimum gradient to allow surface water run off.	No serious defects . Requires regular inspection to maintain surface condition.
No cross falls or longitudinal slopes , except to allow surface water run off.	No visible cross-fall , any longitudinal slopes must be kept to minimum
No drains, gullies or kerbs.	Arrangements to ensure that vehicles cannot tip with any wheels on kerbs, drains, gullies or over known underground services.
Adequate area to allow articulated vehicles to position the cab in line with trailer before discharging the load.	Adequate area to allow articulated vehicles to position the cab in line with trailer before discharging the load.
Facilities to keep the tipping area free from spillages, slurry and contamination.	Any spillage, slurry or contamination to be minimal and not interfere with safe tipping
The tip-off area to have a marked exclusion zone with physical barriers to prevent entry Where there are serious consequences of an overturn and tipping has to be undertaken i.e. next to occupied building, live traffic lane, railway line, on a ramp, etc. Installation of a 'Tipping Restraint Frame'	Suitably located to enable the driver to maintain an exclusion zone around any vehicle whilst carrying out tipping operations. Note: On Road surfacing / Bardon Contracting contracts a exclusion zone may not be available! Therefore extra caution / care should be taken in these circumstances. i.e. nobody at the side of the vehicle!
A means of carrying out effect repairs should the surface become damaged or deteriorate at any stage	A means of carrying out regular tipping point inspections to maintain minimum standards.

MPA members stats

Principal Circumstance of Overtum		Totals	
2011	Transverse slope at point of discharge	6	14
	Unevenly loaded to one side	0	
	Unevenly loaded (front to back)	0	
	Other reason (please give details in Question 9)	8	
2012	Transverse slope at point of discharge	4	14
	Unevenly loaded to one side	4	
	Unevenly loaded (front to back)	0	
	Other reason (please give details in Question 9)	6	
2013	Transverse slope at point of discharge	8	22
	Unevenly loaded to one side	2	
	Unevenly loaded (front to back)	0	
	Other reason (please give details in Question 9)	12	
		50	

TIPPER OVERTURNS (State number of incidents)							
Directly Owned		Franchised		Hired		Collect	
Artic	Rigid	Artic	Rigid	Artic	Rigid	Artic	Rigid
5	4	1	3	31	6	0	0

Summary:

- 50 tippers overturned in last 3 years
- 74% were artics
- 76% were Hired (non-franchisees)
- 48% at Company owned fixed locations
- 36% due to crossfall (single reason)
- 52% due to multiple reasons :
citing one or more of the following:-
 - Soft ground
 - High winds
 - Mechanical failure; poor maintenance
 - Driver error

Tipping & Loading Standard

Have we just been lucky ? – We cant rely on luck !

- Number of tip-over's (5 in 2012, 3 in 2013 & 1 already in 2014)
- Purfleet
- Greystone
- Heights
- Halton East
- Bardon Hill



Tipping & Loading Standard

Have we just been lucky ? – We cant rely on luck !

- Number of tip-over's
- Golf Centre Carsharltton
- White Oxon
- A11 Thetford (Forestry Commission Site)



Tipping & Loading Standard

Involves Everyone !

- Commercial – collection of key H&S information is crucial (minimum H&S info is listed in the standard – copy available)

- Some examples

Is there any restriction in getting to and into site e.g. weight restrictions, narrow entrances, low bridges etc?

Are there any underground / overhead services that could become a hazard e.g. electricity / phone cables?

Is the tipping area suitable e.g. firm solid ground, cross fall of less than 3 degrees?

What other activities are going on that may impact on delivery at this site?

Will there be a trained banksman to supervise reversing activities if required?

Can the site accept deliveries from articulated vehicles?

Can the site accept deliveries from non tipping trailers – e.g. walking floors?

Involves Everyone !

- Operations – Key Points
- Site haulier inductions
- Safe loading practices & risk assessments
- Operators hold relevant MPQC or CPCS competency cards
- Arrangements for load adjustment / correction
- Consideration of weather conditions
- Customer site conditions and practice!

Vehicle Selection & Suitable Loading Equipment



Aggregate Trailer – 9' 1" to 9' 6" approximate height from floor



Grain/Bulk Trailer – 10' 5" to 11' 3" approximate height from floor



Scrap Trailer – approximate 12' 8" minimum height from floor

Safe Loading & Fixed Cameras



Location:RX3216
Camera:CAM 9
01/May/2013 07:24:43

Example of good loading



Location:RX3216
Camera:CAM 9
01/May/2013 07:12:49

Example of bad loading

NTT (Non tipping truck) - Safety



- Walks / runs the product out without the need to tip.
- Can discharge on uneven ground
- Can discharge on the move for grading etc..
- Discharge can be controlled by the banksman or client.
- Franchises working for AI currently have 11 active units and a further 14 on order... delivering 3,568 loads to date, at an average load size of 26.99 tonnes – that's **1,246 less vehicle movements**
- These units will add value and **additional safety benefits**



- Quite often if it feels unsafe it is unsafe!
- Ultimately drivers responsibility to tip or not!
- We will not accept Risk takers – Zero tolerance.
- What are the ultimate costs of a overturn?
- AI will support driver/s regarding unsafe conditions but not support “**Unsafe Acts**”.

Danger from Overhead cables

- Every year trucks come into contact with overhead electricity cables
- You do not have to make physical contact with the cables, going close to live overhead lines can result in a 'flashover' which may kill
- Electricity can 'arc' especially in damp conditions
- HSE guidance note GS6 provides guidance for people who may be planning to work near overhead power lines.

Danger from overhead cables



Any Questions

