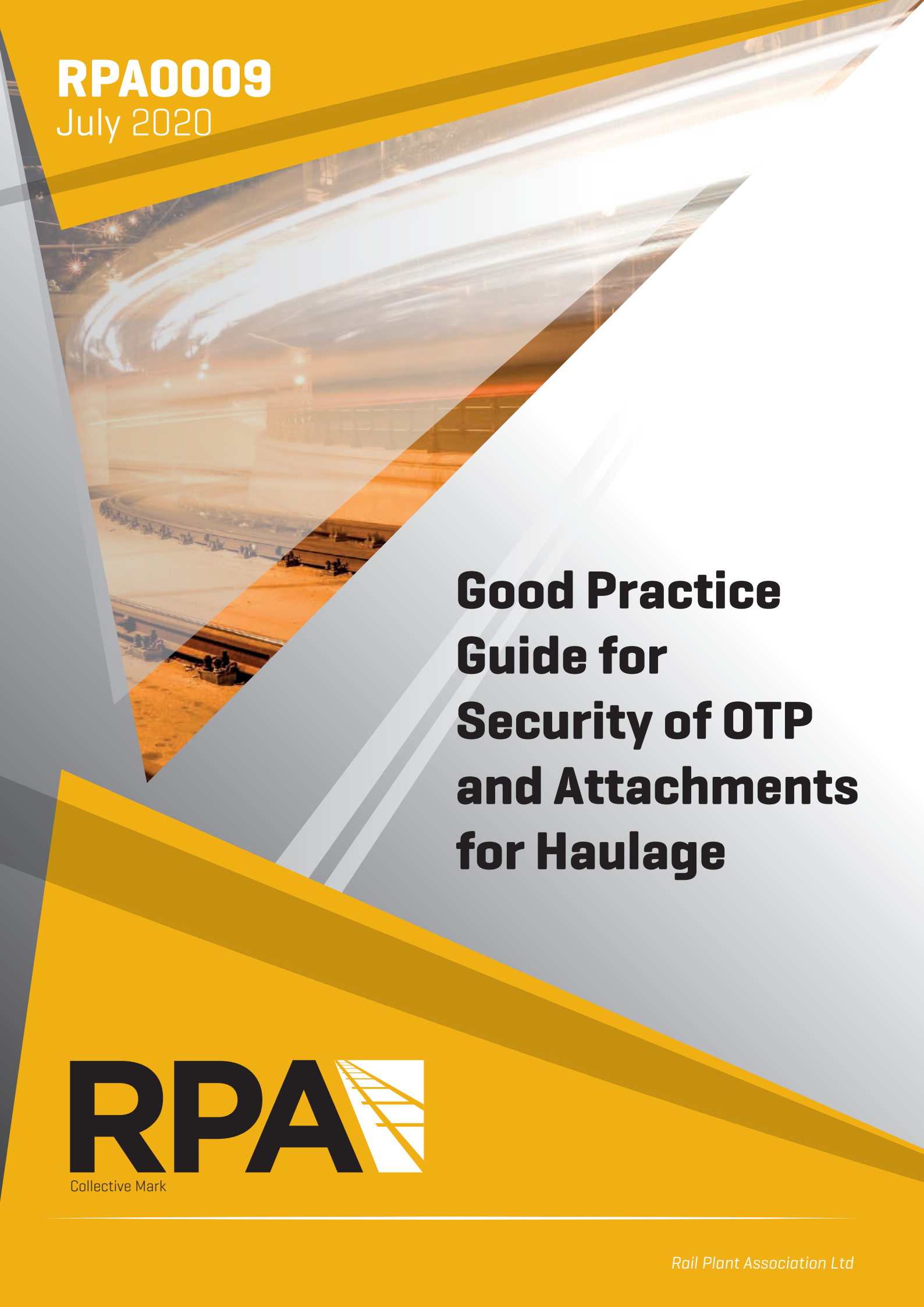


**RPA0009**

July 2020



**Good Practice  
Guide for  
Security of OTP  
and Attachments  
for Haulage**

**RPA** 

Collective Mark

# Document Revision History

ISSUE	DATE	REASON FOR CHANGE
1	June 2020	First Issue

## Background

A sub-group of the Rail Plant Association have looked at Security of OTP and Attachments for Haulage. The Rail Plant Association recommend this document as good practice for the industry.

Rail Plant Association Ltd documents are produced for the benefit of any industry partner who wishes to follow the good practice on any railway infrastructure. Where an infrastructure manager has mandated their own comparable requirements, the more onerous requirements should be followed as a minimum for work on their managed infrastructure.

The Rail Plant Association Ltd makes no warranties, express or implied, that compliance with this document is sufficient on its own to ensure safe systems of work or operation. Users are reminded of their own duties under health and safety legislation.

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# Sign Off

## Sign off

The Rail Plant Association Ltd agreed and signed off this document (1st draft) on 01 June 2020 and published on 05 June 2020

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## Purpose

The purpose of this Good Practice Guide is to outline the requirements for security of OTP and attachments for Haulage.

## Scope

This Good Practice Guide is designed to set out the requirements for how OTP assets should be secured on Heavy Goods Vehicles (HGV) preventing damage to OTP specific systems.

## Definitions

OTP	On Track Plant
HGV	Heavy Goods Vehicle

# 1. General Requirements

## Securing Equipment

### 1.1 All securing equipment shall

1. Receive a pre use inspection to ensure equipment is fit for purpose.
2. Be rated for the load to be secured.

### 1.2 The number of lashings required will depend upon;

- The weight of the load
- Friction between the load & load bed
- Rating of lashing
- Angle of lashing
- How many tensioners are used.



Note: Load binder hooked underside of the trailer should be a straight pull where possible, not pulling around a corner, as shown here.

Load binder - Straight Pull

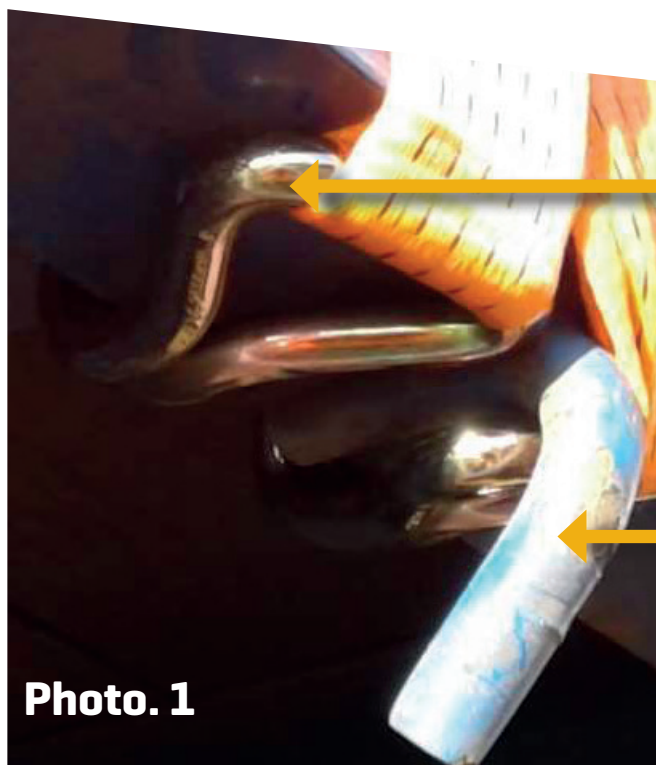
# 1. General Requirements

## Securing Equipment

- 1.3 The lashings or securing devices should only be attached to those parts of the OTP and attachments which are of sufficient strength to withstand the stresses likely to be imposed on them.
- 1.4 Where OTP and attachments comes equipped with dedicated lashing points for use when being transported, these points should be used and the vehicle secured as per manufacturer instructions. Care should be taken before lashing to lifting points as these may not be suitable for restraint purposes.
- 1.5 A wheeled or tracked OTP must be lashed down in position on the carrying vehicle, with the parking brake applied, excavator booms should be place as low as possible.
- 1.6 Before the wheeled or tracked OTP is moved onto the trailer all loose dirt/ballast that may otherwise come off and obstruct the highway or damage other vehicles must be removed.
- 1.7 When the wheeled or tracked OTP has been stowed and the engine stopped, the pressure in the hydraulic system should be relieved by moving all of the control levers through all their positions.
- 1.8 In deciding the number of anchorage points to be used when arranging a restraint system for wheeled or tracked OTP, the following factors should be considered:
- The need to position the machine to achieve the correct load distribution to meet the legal axle load requirements and to ensure that the vehicle's handling is not impaired.
  - The extent to which other load restraint features is incorporated in the design of the vehicle.
  - Whether the machine has wheels, tracks or rollers.
  - The weight of the machine to be carried.
- A minimum of four separate anchorage points should be used.*
- 1.9 The loaded wheeled or tracked OTP should be inspected after the vehicle has been driven for a short distance in order to check that no movement has taken place and that restraining devices are fully secure. Periodic inspections should be made during the course of the journey.
- 1.10 Racket Strap wire hooks shall only be attached to trailer body as shown in Photo 1 or approved tie down points. Trailer rope hooks are not to be used.

# 1. General Requirements

## Securing Equipment



Strap hook attached to trailer body.

Trailer rope hook shall not be used to secure strap hooks.

**Photo. 1**

Ratchet Stap & Wire Hook



# 1. General Requirements

## Securing Equipment

1.11 Best practice is for lorry bed to have sunken rails to allow trailer wheels to sit on tread. Where this is not possible rail wheels are to be suitably supported on blocks or wooden battens.



Photo. 2

Best practice is for lorry bed.

## 2. Rail Trailers

### Securing Equipment

#### 2.1 In this example equipment required can be either 5t ratchet straps or securing chains.

*Note: straps are positioned diagonally to secure the trailers, this is to pull the trailer in from both ends minimising the chance of the trailer wheels being able to roll at any point.*

Each trailer / ballast box requires 4 straps/chains to secure it effectively and should be attached from the lashing point on the trailer as 1.10 or ballast box to the body of the trailer.



**Photo. 3**

Single Box



## 2. Rail Trailers

### Securing Equipment



**Photo. 4**

Double Box

# 3. Attachments

## Securing Equipment

**3.1** In this example 5t ratchet straps are required. To secure a fuel bowser 2 straps (Photo 6) are required due to the size of the box and 1 strap is required to secure a Thimble Box (Photo 5). Straps should be thrown over the equipment and secured from body to body of the trailer [see 1.11].



**Photo. 5**

Thimble Transport Box



**Photo. 6**

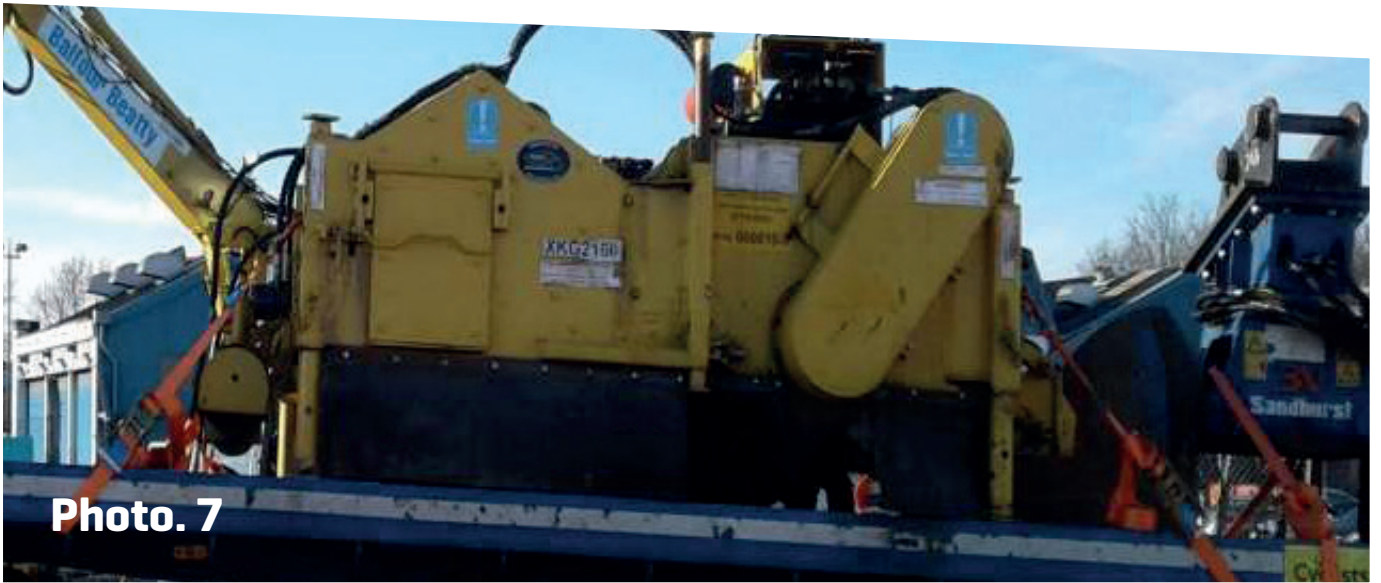
Thimble Transport Box



# 3. Attachments

## Securing Equipment

3.2 In this example 5t ratchet straps are required. A Ballast Brush has 4 lashing points and a ratchet strap is required from each one of these secured to the body of the trailer (Photo 7 & 8). Straps MUST NOT be thrown over the top as there are components that can be damaged easily as a result of the strap being tightened.



**Photo. 7**

Ballast Brush



**Photo. 8**

Ballast Brush

# 3. Attachments

## Securing Equipment

3.3 In this example 5t Ratchet Straps are required. There are currently no lashing points on a Sleeper Baler. 2 straps are required to secure a Sleeper Baler, however it is crucial that the straps are thrown over the Sleeper Baler in the position as shown in the photos 9 & 10. This is to prevent damage to the hydraulic hoses and fittings located in the central area of the Sleeper Baler.

Each Sleeper Baler may vary so the location of these hoses needs to be checked on every occasion before throwing over the strap and securing from body to body of the trailer. For all Sleeper Baler types straps should be as close to the support legs as possible.



Sleeper Baler



Sleeper Baler



# 3. Attachments

## Securing Equipment

3.4 Scissor Log Grab stowed correctly in its cradle, secured using Grade 80, 10mm Lifting Chain rated at 6.3 Ton lashing capacity, used with a load securing binder fitted with a sling hook, care taken not to trap the Hydraulic pipe and fittings (Photo 11 & 12).



Photo. 11

Scissor Log Grab



Photo. 12

Scissor Log Grab



# 3. Attachments

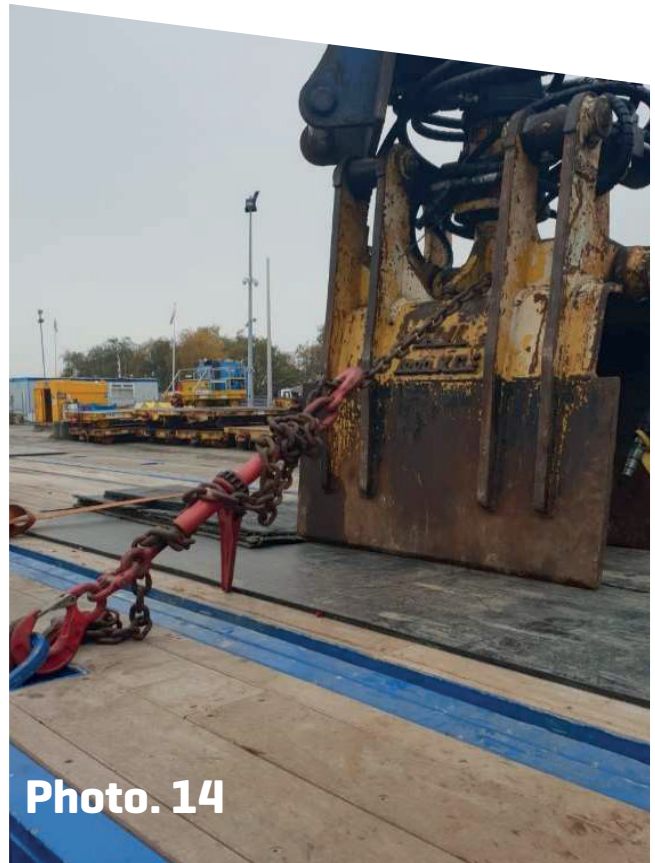
## Securing Equipment

3.5 Sleeper Grab secured using Grade 80, 10mm Lifting Chain rated at 6.3 Ton lashing capacity, used with a load securing binder fitted with a sling hook., care taken not to trap the Hydraulic pipe and fittings [Photo 13 & 14].



**Photo. 13**

Sleeper Grab



**Photo. 14**

Sleeper Grab

# 3. Attachments

## Securing Equipment

3.6 Clam Shell Bucket secured using 10mm chain, as per the Plate Grab, take care to avoid the hydraulic pipes and fittings. Also, positioning correctly on the vehicle to use the correct lashing points (Photos 15, 16, 17 & 18).



Clam Shell Bucket



Clam Shell Bucket



Clam Shell Bucket



Clam Shell Bucket



# 3. Attachments

## Securing Equipment

3.7 Rail Cropper secured using 10mm chain, as per the Plate Grab and again care taken to avoid the hydraulic pipes and fittings. Also, positioning correctly on the vehicle to use the correct lashing points [Photo 19].



Cropper

# 4. Wheeled Excavator

## Securing Equipment

4.1 For Wheeled Excavator securing chains and tensioners are required of a rating suitable for the weight of the machine. The HGV trailer used in this example has a 'well' which is preferred as this allows the machine arm to be lowered preventing the arm from slewing side to side should it become unsecured [How far the arm can be lowered into the 'well' of the trailer will depend on if there is a bucket attached]. 5 securing chains are required.

- 4 chains shall be secured from the lashing points on the main chassis of the Wheeled Excavator in between the wheels as shown in photo 20 & 21, care should be taken not to damage hydraulic fittings.
- 1 chain is required to secure the arm of the machine and should be placed through the arm near the bucket as shown in Photo 20, avoiding hydraulic hoses and fittings. All chains shall be secured to the lashing points on the trailer as shown in Photos 23 & 24.



Wheeled Excavator



# 4. Wheeled Excavator

## Securing Equipment



**Photo. 21**

Wheeled Excavator



**Photo. 23**

Wheeled Excavator



**Photo. 24**

Wheeled Excavator



# 4. Wheeled Excavator

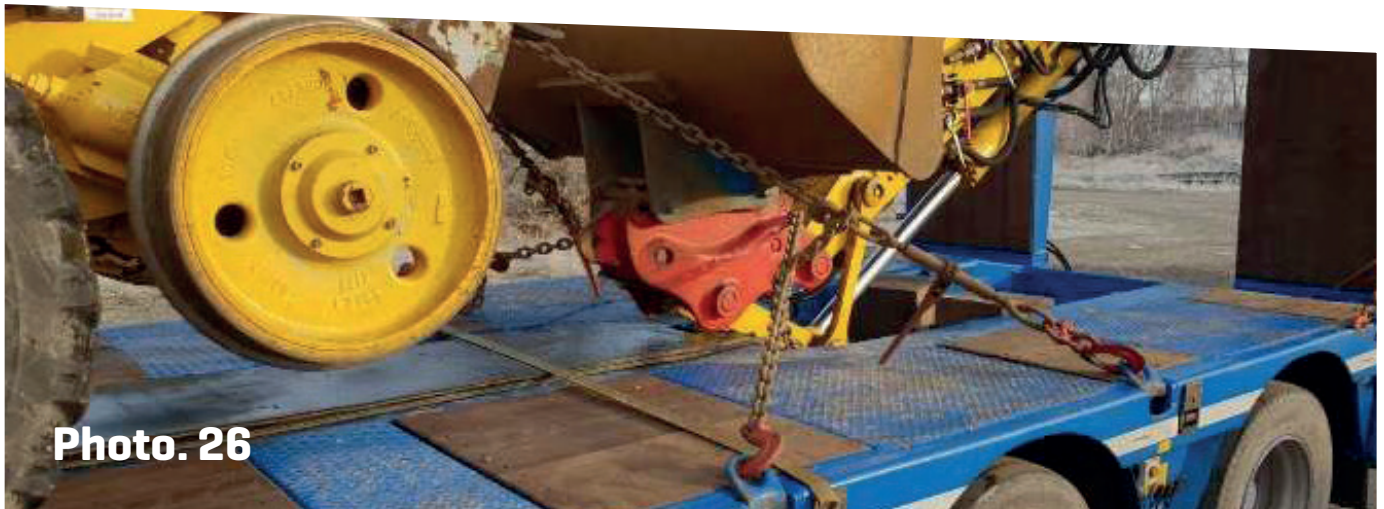
## Securing Equipment

4.2 Liebherr excavator, cross chained with boom stowed in the boom trough and secured with a cross chain. This is the most important chain ensuring the boom cannot slew at all and also securing the machine through the centre line of the trailer & centre of gravity. Heavy Duty, Grade 80 Lifting Chain is used, rated at 10.6 Ton lashing capacity in single leg configuration pulling in a forward & reward direction. 13mm load securing Binders are also used fitted with Sling Hooks rated at 10 tons each.



**Photo. 25**

Liebherr Excavator



**Photo. 26**

Liebherr Excavator

# 4. Wheeled Excavator

## Securing Equipment

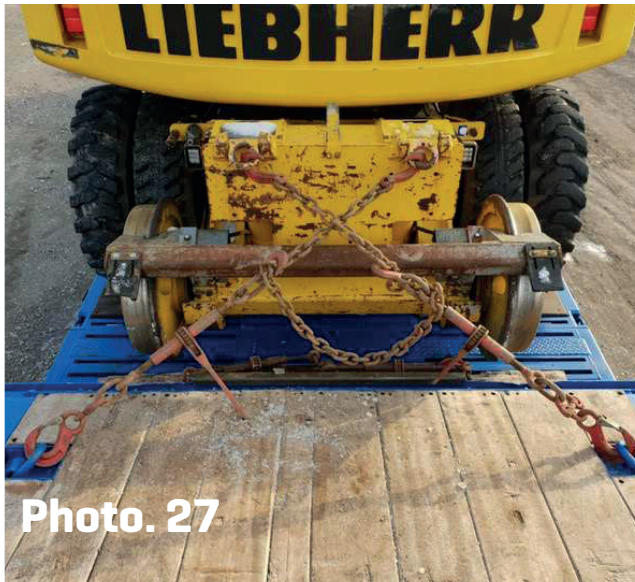


Photo. 27

Liebherr Excavator



Photo. 28

Liebherr Excavator



Photo. 29

Liebherr Excavator



# 4. Wheeled Excavator

## Securing Equipment

4.3 Colmar T10000 seen on one a 4 axle step frames, no boom trough on this trailer. Again boom sat in the lowest arrangement and secured with a 5 ton ratchet strap. Same 13mm chains used for securing as the Liebherr, using the designated lashing rings on the Colmar and Trailer.



**Photo. 30**

Colmar T1000 Wheeled Excavator

# 5. Tracked Excavator

## Securing Equipment

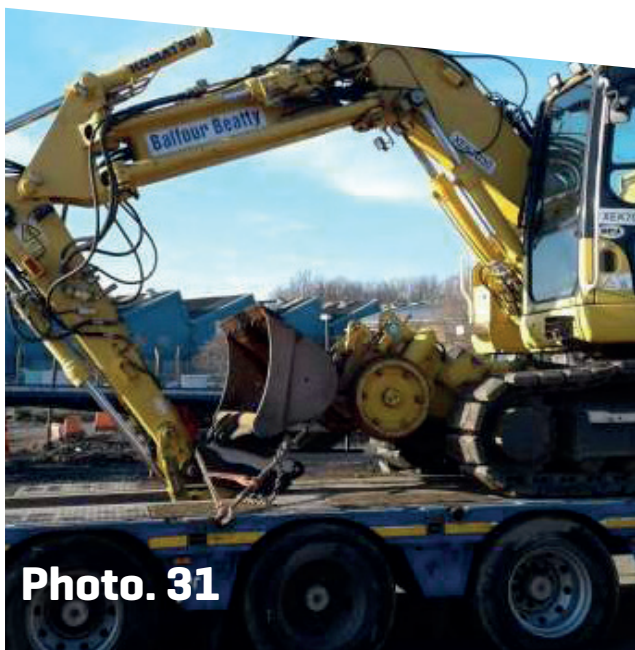
5.1 For Tracked Excavator securing chains and tensioners are required of a rating suitable for the weight of the machine. The HGV trailer used in this example has a 'well' which is preferred as this allows the machine arm to be lowered preventing the arm from slewing side to side should it become unsecured [How far the arm can be lowered into the 'well' of the trailer will depend on if there is a bucket attached].

5 securing chains are required.

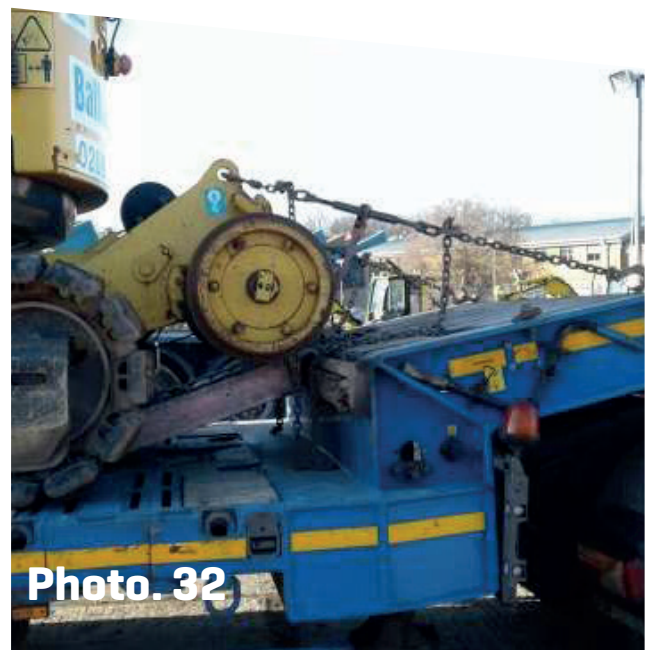
4 chains shall be secured from the lashing points on the main chassis of the Tracked Excavator in between the wheels, care should be taken not to damage hydraulic fittings.

1 chain is required to secure the arm of the machine and should be placed through the arm near the bucket as shown in Photo 31, avoiding hydraulic hoses and fittings.

All chains shall be secured to the lashing points on the trailer.



Tracked Excavator



Tracked Excavator



# 6. Dozer

## Securing Equipment

6.1 For Dozer's securing chains and tensioners are required of a rating suitable for the weight of the Dozer.

4 chains shall be secured the Dozer in this example and should be secured from the our lashing points on the chassis of the Dozer to four lashing points on the trailer as shown in Photos 32, 33, 34 & 35.



**Photo. 32**

Dozer



**Photo. 33**

Dozer



**Photo. 34**

Dozer



**Photo. 35**

Dozer



# 7. MEWP

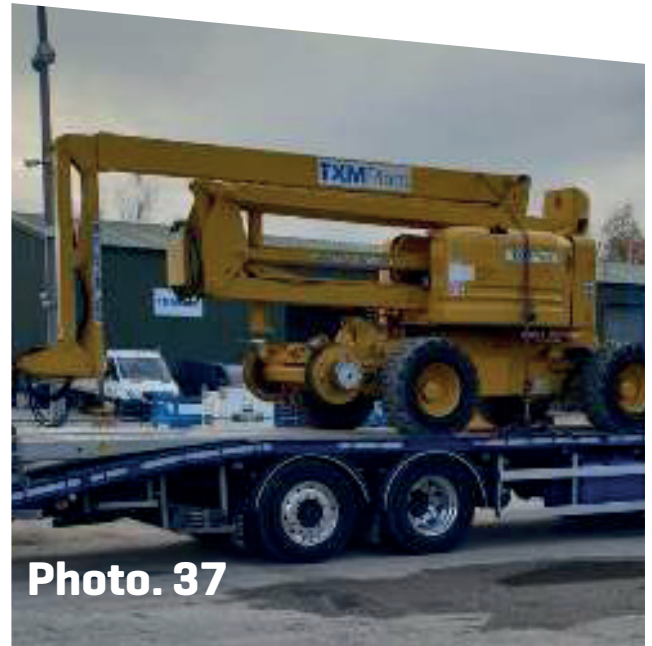
## Securing Equipment

7.1 Below is a Z60 on a Rigid Plant Truck, can be seen cross chained with forward and rearward securing. A strap should be over the bonnets to stop them blowing open in transit as shown in Photo 38.



**Photo. 36**

Z60 MEWP



**Photo. 37**

Z60 MEWP



Z60 MEWP

# 7. MEWP

## Securing Equipment

7.4 EVO on a 3 axle step frames, secured forward & rearward, basket secured down with a 5 ton rated ratchet strap.



**Photo. 39**

Evo MEWP



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