

# Code of Practice Coupling or Uncoupling and Parking of Large Goods Vehicle Trailers

Guidance for managers, supervisors and trainers



## engineering success

SOE (Society of Operations Engineers) is a professional membership organisation that represents three professional sectors of the engineering industry – IRTE, IPlantE and BES. The Society promotes safe, efficient and environmentally sustainable operations engineering to the benefit of the community at large, through the support of best practice and health and safety initiatives, a commitment to the professional development of its members and by influencing legislation and design.

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# IRTE

IRTE (Institute of Road Transport Engineers), one of the most respected names in UK transport, was founded in 1944 and is recognised as an impartial voice of the industry. It encourages high standards of excellence with an emphasis on safety in operation, demonstrated by its research and education programme for members and industry.

IRTE members come from a wide variety of transport-related roles including apprentices and technicians in the light and heavy and passenger service sectors, workshop managers, fleet engineers, transport managers and company directors.

## Foreword

The IRTE is a professional body dedicated to promoting the best practice that should be adopted on a range of subjects by its own members, and by the road transport industry as a whole. Since 1944, IRTE has been the impartial voice of the industry on many matters connected with the safe design and use of vehicles.

Drivers of large goods vehicles face many risks in the course of their work. Some of these, such as the behaviour of other road users, are at least partially outside their control. However, there is one area where the risks are completely in the control of drivers; the coupling, uncoupling and parking of trailers. Sadly these activities are not always carried out safely and every year they cause a number of injuries, some fatal. *The Code of Practice on Coupling and Uncoupling of Vehicles* has been produced by IRTE to provide guidance on how to prevent injuries from these activities.

*The Code of Practice* is aimed at managers, supervisors and trainers but has good advice for everyone who has responsibility for the safety of large goods vehicles and drivers. I particularly commend the safe systems of work set out in the five annexes. If, following suitable risk assessments, drivers work to the systems described in this document their own and their colleagues lives should be safer.

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# Introduction

Driver awareness, and understanding of the risks involved when coupling and parking trailers, is sometimes severely lacking and the subject is often neglected at all levels from the fleet operator down.

Accidents and dangerous situations occur all too often because drivers of large goods vehicles fail to follow safe coupling and parking procedures. These inappropriate procedures often lead to vehicle run away or trailer roll away situations. These situations may occur during the coupling of the trailers, when trailers are parked or when trailers become detached from the towing unit while moving or stationary. This poor practice can cause fatal or serious injury to the driver and/or others and costly damage to both vehicles and property.

This *Code of Practice* is intended to be used as a management tool by all operators and users of large goods vehicles; from large or small fleet operators and their managers to independent owners, self-employed drivers and driver training bodies.

This booklet also provides guidance on the law, explains why accidents occur, considers product development and illustrates the need for procedures to ensure the safe coupling and parking of trailers.

The five appendices at the end of the guide contain generic procedures for the safe coupling or uncoupling and parking of standard semi trailers, close coupled semi trailers, centre axle and turntable drawbar trailers. If adhered to, these procedures can prevent vehicle run away and trailer roll away accidents. These procedures may be adapted to suit specific applications and used when training drivers. They should also be used as the template for the production of checklists for supervisors and drivers on the safe methods to be adopted when coupling, uncoupling or parking trailers.

Different risks exist depending on the type of equipment being used. Therefore it is important to identify and implement a training regime that will ensure drivers follow the correct procedure at all times and are aware of the potential consequences of their actions if they do not adhere to that procedure.

In addition to these procedures, this guide contains supplementary safety rules that should be observed and a section concerning good parking practice.

The IRTE would like to thank the HSE (Health and Safety Executive) for the support and advice provided in the compilation of the *Code of Practice*.

Thanks are also extended to the many IRTE members who have contributed and to the Department for Transport for its advice.

## The law

If you couple or uncouple a trailer without applying the towing unit parking brake, or leave a trailer without the parking brake applied you may be responsible for seriously injuring yourself or someone else, perhaps even fatally. You are also breaking health and safety law.

Employers, owners and managers have a responsibility to provide and maintain safe systems of work, and to take reasonable and practicable precautions to ensure the health and safety of all workers and members of the public who may be affected by their activities. They should ensure that safe systems for coupling and uncoupling vehicle combinations are understood, and procedures are in place to check that these 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.

### Accidents and damage to property

Many accidents occur due to bad practice employed by drivers while coupling, uncoupling and parking of trucks and their trailers. A high proportion of these accidents involve fatal or very serious injury. There is strong evidence to suggest that many dangerous occurrences go unreported, therefore the problems caused by bad practice are likely to be far worse than published figures would suggest.

Fatal accidents occur when trucks run away as a result of incorrect coupling procedures. When a run away occurs, the driver can find themselves in an isolated and vulnerable position. For example, the driver could be on the catwalk of the tractor unit, while coupling a semi trailer, or adjacent to the rear axle of the towing vehicle while coupling

a drawbar trailer. This can result in having to take risks to regain control of the moving vehicle. Typically, fatal and serious accidents occur when drivers or others are run over or crushed between the moving vehicle and another object as they attempt to get into the vehicle cab to regain control.



The roll away of a trailer, when the towing unit is correctly parked, is likely to have the same consequences as a complete vehicle or towing unit run away. In many cases the cause of this type of accident is due to bad practice of both the driver who left the trailer without applying the parking brake, and the driver coupling to the trailer, who did not check that the parking brake was applied and subsequently had the accident.

Accidents can also occur when trailers separate from towing units, because they have not been coupled correctly. This can occur when vehicles are moving or after they have been parked.

It is important to remember that a run away or roll away may occur on inclines that are imperceptible to the eye.

Most accidents occur as a result of complacency and lapses in concentration rather than inexperience on the part of the driver. Due to the wide age profile of drivers involved in such accidents, there would appear to be no correlation between age and accident rate.

## Design developments

### Braking systems

Work by braking system designers and vehicle users to introduce safety measures that can overcome inappropriate coupling or uncoupling and parking procedures continue. However, technical solutions appear difficult to achieve. In the meantime, driver training and following the correct coupling and uncoupling procedures given in the appendices of this publication is crucial to avoid serious accidents.

To assist in the reduction of accidents caused by trailer parking brake systems, trailers should always be built to the most effective specification available.

Trailer manufactures and braking system suppliers have a responsibility to ensure that customers are made aware of developments in braking system technology and are given the best advice available regarding specification and application.

### Close coupled semi trailers

Trials have been carried out using various types of moveable arms, which can swing or slide, on which the air and electrical services are mounted. The arm is moveable in an attempt to make the connections accessible while coupling and uncoupling the trailer. These trials have shown that, under



operational conditions, it was not universally possible to overcome the problems encountered while connecting the air and electrical services on close coupled semi trailers. However, moveable arms may be a solution to the coupling and uncoupling problems encountered on some types of vehicle combination and may be used where a risk assessment indicates it to be appropriate.

Some operators are working with manufacturers and experimenting with a specially designed fifth wheel on the tractor unit which allows the tractor unit and trailer to be coupled in stages. This involves a new sliding split-coupling technique, whereby the coupling and uncoupling procedure is undertaken in two stages by using what is, in effect, a dual position sliding fifth wheel.



The first stage of the procedure involves the connection of the trailer to the fifth wheel while it is located rearward of the normal

## Design developments

travelling position. This procedure allows sufficient access space between the tractor unit and trailer to enable the air and electrical services to be connected. The second stage involves reversing the tractor unit closer to the trailer and then engaging the fifth wheel in its normal travelling position. This system is currently under trial but would benefit from additional trials to improve and develop the system for universal application.

### Drawbar trailers

Unlike articulation, there is no commonly-adopted design standard for drawbar combinations, which makes design developments difficult to achieve. However, some new concepts, in their infancy, are currently being evaluated.

### Cab exit warning device

One of the most effective ways to ensure that the driver always applies the parking brake is to install an “Is your parking brake applied?” electronic voice box, which activates each time the driver’s door is opened. The addition of an automatic mute function on the vehicles audio equipment ensures that the message is clearly heard by the driver.

### Position of trailer parking brake control

There is no standard position for parking brake controls on trailers. There is a need to identify a standardised position(s) for this control to encourage drivers to set the parking brake on the trailer when uncoupling. Due to the fundamental differences between semi trailers and drawbar trailers there is likely to be more than one recognised position, the location of which is also likely to be influenced by the user’s operating conditions.

### Tractor unit service connections

To gain access to the air and electrical services on a tractor unit, in the majority of cases, the driver is required to climb onto the chassis behind the cab. To ensure the safety of the driver, equipment normally consisting of strategically placed steps, grab handles and a catwalk should always be installed to allow ease of access.

The termination height for coil ‘suzies’ on a tractor unit is a much debated point with recommendations of up to one metre high being common place to eliminate the possibility of the ‘suzies’ becoming snagged on the front corners of the trailer while turning or manoeuvring. By providing dummy stowage points for the air and electrical ‘suzies’, at the same height as the termination points, there is an added benefit that the ‘suzies’ do not rub or foul any other equipment when not in use.

### The future

Work continues on the development of both semi trailer and drawbar coupling systems that are designed to eliminate the requirement for the driver to manually connect and disconnect the air and electrical services. When available, these systems will create a safer working environment, however compatibility with existing fleets is likely to be compromised.



## Procedures and safety considerations

Appendices one to five provide detailed coupling and uncoupling procedures for specific trailer types. These appendices are particularly useful for trainers to assist them in the compilation and execution of training courses.

### Standard articulated combinations

Appendix one provides a detailed procedure for the coupling and uncoupling of standard tractor unit and semi trailer combinations.

When used, these procedures provide additional guidance for the training of drivers and supplement those contained in the *Driver vehicle training manual*, published by the Driver Standards Agency (DSA).



### Close coupled articulated combinations

The continuing trend to design articulated combinations which reduce the distance between the rear of the drivers cab and the front of the trailer creates difficulties when coupling and uncoupling the air and electrical services. In many situations it is almost impossible to make the physical connections due to the restricted space available. The problem has become particularly acute on trailers fitted with 'slab-type' refrigeration units.

Due to the limited space available, two systems which enable the driver to couple or uncouple the trailer successfully have been devised which are commonly referred to as the split coupling and cranked coupling methods. Unfortunately both of these have inherent dangers for the driver if the procedures provided in this guidance are not adhered to. It is critical that the driver understands the importance of applying the tractor unit and trailer parking brakes at

the appropriate times, otherwise their safety and that of others will be compromised. The procedures



in appendices two and three provide a means of coupling and uncoupling close coupled combinations and should be followed whenever a safer method cannot be used. These methods are not intended to be a substitute for applications that allow the use of the standard procedure detailed in appendix one on a close coupled combination. Where possible cranked coupling should be used in preference to split coupling.

### Drawbar combinations

Due to the lack of any commonly adopted drawbar standard, and the constraints imposed by ancillary equipment, the coupling and uncoupling procedures to be adopted have generally been left to the individual operator or equipment supplier. Appendix four details the procedure for coupling and uncoupling of a prime mover and a centre axle drawbar trailer combination, while appendix five deals with a turntable drawbar combination.

### Procedures

Each piece of equipment and combination of equipment types that a driver is expected to use must be the subject of a risk assessment. This assessment will dictate whether one of the generic procedures provided in this guidance can be adopted, or whether it must be adapted to suit a specific application.

The generic procedures within this guidance may be used as the basis for a procedural check list by anyone involved in the management, supervision, training or driving of articulated and drawbar trailer combinations

## Procedures and safety considerations

to demonstrate that safe procedures are being used. Any amendments to the generic procedures should pay due reference to the operating instructions provided by the suppliers of the equipment installed onto the chassis and trailer.

There is a collective responsibility to ensure that safe practice is adopted at all times, therefore the influence of peer pressure should not be underestimated. A careless driver is as great a danger to others as to themselves.

Training is a vital part of any safety policy; therefore it is incumbent upon management to ensure that a structured regime is in place and adhered to. Training should be considered as a continual process and, as such, refresher courses must take place to ensure that drivers do not develop bad habits. When a driver has received training this should be recorded in a log, dated and signed by the driver to confirm that the training took place and that it was fully understood.

Any breaches of the safety policy should be documented and each driver's record reviewed periodically.

No driver should be instructed to disregard a documented safety procedure however, should this occur the driver must have access to a supportive management structure. Any alternative procedure should only be carried out on the basis of a risk assessment that demonstrates why the documented safety procedure has to be breached, and that the alternative used is necessary, and can be carried out safely.

### Compatibility

It is incumbent upon the operator to ensure that the safety of the driver and those likely to be affected by their actions are uppermost in their mind when instructing a driver to couple or uncouple a truck and trailer combination.

The compatibility of any truck and trailer combination must not be taken for granted. Is the trailer fifth wheel position suitable for the kingpin position on the semitrailer to be coupled? Does the drawbar hitch position and pin size suit the towing eye and drawbar trailer towing beam geometry? When turning will the semi trailer landing legs clear the rear of the tractor unit? Are the air and electrical services compatible?

Critically when considering using the split coupling method to couple or uncouple a semitrailer is the braking system fitted to the trailer suitable to allow this procedure to take place safely? Different specifications of trailer braking systems and their operation cannot be relied upon and may be incompatible with the creation of a safe system of work.

The design of the braking system will determine the reaction times for the application of the trailer parking brake during the coupling and uncoupling procedure and as such the driver could inadvertently be positioned in a place of danger between the truck and trailer while making the air connections.

Two obvious situations could occur when using an unsuitable trailer. If the driver has failed to follow the designated procedure and the trailer is not secured in the coupling, the trailer could move when the supply air line (red) is connected. If the driver releases the air connection the reaction time may be such that the trailer does not stop immediately and could potentially trap the driver or injure other persons.

The suitability of any trailer to be used when performing the split coupling method must be known before a driver is instructed to carry out that procedure. This procedure must not be carried out when using any trailer where its suitability is unknown or suspect as doing so could place the driver in danger.

## Standard semitrailers - coupling and uncoupling procedures

This procedure should be adopted whenever there is adequate room between the rear of the tractor unit cab and the front of the semi trailer, when coupled, for the driver to work in safety. The driver must be advised of, and understand, the potential dangers to themselves and others when deviating from an approved procedure.

### Coupling

Slowly reverse the tractor unit in a straight line towards the front of the trailer. Stop when the bottom of the fifth wheel ramps are level with the front of the trailer. Apply the tractor unit parking brake, stop the engine and remove the keys.

Check the parking brake on the trailer is applied. Do not walk under the trailer.

Inspect the fifth wheel and locking devices on the tractor unit, the kingpin and rubbing plate on the trailer for any signs of damage. Assuming everything is in order move to the next stage. Should any damage be apparent do not continue but seek assistance.

Check and, if necessary, adjust the trailer coupling height relative to the fifth wheel, which is normally designed to accept the kingpin just below its parallel height. Refer to the manufacturer's instructions for the correct procedure. Height adjustment may be achieved by extending or retracting the trailer landing legs. Changing the tractor unit height, if it is equipped with air suspension, is an alternative solution. If this process is not carried out correctly and the trailer is too high, in some cases it is possible to miss the fifth wheel jaws completely, so that the kingpin passes over it into a dangerous position behind the cab or rests on top of the fifth wheel.

Slowly reverse the tractor unit under the trailer until the fifth wheel jaws engage. Apply the tractor unit parking brake, stop the engine and remove the keys.

To check the fifth wheel jaws have correctly engaged, carry out a visual inspection to verify that the kingpin is correctly located in the jaws and that the fifth wheel release handle is in the correct locked position. Fit the security 'dog clip' and/or any other safety device provided.

*Note: If the 'dog clip' does not fully engage, pull release handle to disengage the jaws and slowly move tractor unit away from trailer then repeat the fifth wheel coupling procedure.*

The second test is to select a low forward gear and, with the trailer parking brake still applied, slowly pull forward and perform a 'snatch test'. Repeat the snatch test to confirm the jaws have locked. Apply the tractor unit parking brake, stop the engine and remove the keys.

Connect the service air line (yellow) and electrical connections.

Connect the supply air line (red) and watch for any unexpected movement.

*Note: If the trailer moves, immediately disconnect the supply air line (red) and check that the parking brake on the trailer has been applied.*

Wind up the landing legs and stow the handle. Release the trailer parking brake, ensure that any air suspension control is set to the ride position and attach the rear number plate.

Test the operation of all of the lamps.

Before pulling away walk around the combination to check that everything is in order. Checks should include the routine requirements of oil, water, fuel, windscreen, mirrors, truck and trailer wheels and tyres for security and legality, bodywork and ancillary equipment. It is also the responsibility of the driver to check that the load is secure and that the in-cab height indicator is correct. The driver should turn on the ignition to check that the ABS/EBS warning lamp(s) activate in the correct sequence and extinguish. If, for any reason, the combination appears unroadworthy do not proceed but seek assistance.

On pulling away, test the brakes to ensure correct operation and that, if fitted, the ABS warning lamp on the trailer functions correctly and extinguishes when a speed of 15 kph is exceeded.

### Uncoupling

Park the combination in a straight line. Apply the tractor unit parking brake, stop the engine and remove the keys.

Apply the parking brake on the trailer.

Remove the trailer number plate and place in the stowage position provided or in the cab.

Lower the landing legs until they are in contact with the ground.

Disconnect all of the air and electrical services. When disconnecting the air lines, grip the connections firmly as they may kick back when released due to air pressure in the line.

*Note: Do not leave the connections loose, but place them in the dummy stowage*

*positions provided or secure them on the catwalk in such manner that water and dirt cannot enter the connections.*

Remove the security 'dog clip' and any other safety device then pull the release handle to disengage the fifth wheel jaws.

Slowly draw the tractor unit away from the trailer. If the tractor unit has air suspension stop after approximately 300mm and apply the tractor unit parking brake while the fifth wheel is still under the trailer rubbing plate, and lower the rear axle air suspension to drop the fifth wheel away from the trailer. Lowering the suspension will prevent the rear of the tractor unit rising suddenly as the trailer weight is removed from the fifth wheel. Now pull clear of the trailer and stop. Reset the tractor unit air suspension to the ride position. If the tractor unit has mechanical suspension, stop when the trailer is clear of the fifth wheel. Apply the tractor unit parking brake, stop the engine and remove the keys.

Before leaving the trailer, walk around it and check that it is in a safe condition.

### Supplementary safety rules for standard semitrailers

It is important to follow these safety rules:

- Do not give others the opportunity to take control of your vehicle, always apply the tractor unit parking brake, stop the engine and remove the keys before leaving the cab.
- Never pass, or allow others to pass, under the trailer.
- Never place fingers into the fifth wheel jaw.
- Wherever possible avoid coupling to a semitrailer from any position other than

## Appendix One (continued)

straight in line as this can give rise to a situation where excessive force is required, the kingpin may miss the fifth wheel, the trailer may be pushed sideways, damage could be caused or personal injury could occur.

- Always ensure that all safety devices are engaged.
- Do not release the fifth wheel with the services connected, unless using the split coupling method described in appendix two (pg 14).
- Do not connect the services unless the kingpin is fully engaged in the fifth wheel jaws unless using the split coupling method described in appendix two.
- Never attempt to couple to a trailer when the kingpin is above the height of the fifth wheel.
- If the trailer is against a loading dock, and the air suspension height is to be adjusted, pull the trailer forwards by 50mm and adjust the height before uncoupling.
- Do not attempt to uncouple a trailer unless it is equipped with landing legs.
- Ensure that the tractor unit and trailer are designed to work as a combination.
- Do not attempt to pull away with the low air pressure warning buzzer sounding. Always allow the system to become fully charged.
- If your vehicle is equipped with a parking brake test position, use it as described in the truck manufacturers instructions.
- The parking brake on the trailer has been applied when leaving the coupled vehicle for extended periods, e.g. overnight.

### Special applications

To accommodate some applications it may be necessary for an operator to use equipment that is not covered within these procedures for example dual or multi position sliding fifth wheels and dual height raising fifth wheels. Other users may be engaged in special types operations or use non-standard trailers. In these instances it will be necessary for bespoke operating instructions to be created following a risk assessment.

### Close coupled semitrailers - coupling and uncoupling procedures

This procedure may be adopted when there is inadequate room between the rear of the tractor unit cab and the front of the semitrailer, when coupled, for the driver to work in safety. The driver must be advised of, and understand, the potential dangers to themselves and others when deviating from an approved procedure.

#### **Coupling using the split coupling method**

Slowly reverse the tractor unit in a straight line towards the front of the trailer, stop when the bottom of the fifth wheel ramps are level with the front of the trailer. Apply the tractor unit parking brake, stop the engine and remove the keys.

Check the parking brake on the trailer is applied. Do not walk under the trailer.

Inspect the fifth wheel and locking devices on the tractor unit, plus the kingpin and rubbing plate on the trailer for any signs of damage. Assuming everything is in order move to the next stage. Should any damage be apparent do not continue but seek assistance.

Check and, if necessary, adjust the trailer coupling height relative to the fifth wheel, which is normally designed to accept the kingpin just below its parallel height. See the manufacturer's instructions for the correct procedure. Height adjustment may be achieved by extending or retracting the trailer landing legs. Changing the tractor unit height, if it is equipped with air suspension, is an alternative solution. If this process is not carried out correctly and the trailer is too high, in some cases, it is possible to miss the fifth wheel jaws completely, so that the kingpin passes over it into a dangerous position behind the cab or rests on top of the fifth wheel.

Slowly reverse the tractor unit under the trailer until the front of the trailer is approximately one metre away from the cab, as this should allow access onto the catwalk behind the cab in safety. Apply the tractor unit parking brake, stop the engine and remove the keys.

Connect the service air line (yellow) and electrical connections.

Connect the supply air line (red) and watch for any unexpected movement.

*Note: If the trailer moves, immediately disconnect the supply air line (red) and check that the parking brake on the trailer has been applied.*

Slowly reverse the tractor unit under the trailer until the fifth wheel jaws engage. Apply the tractor unit parking brake, stop the engine and remove the keys.

To check the fifth wheel jaws have correctly engaged carry out a visual inspection to verify that the kingpin is correctly located in the jaws and that the fifth wheel release handle is in the correct locked position. Fit the security 'dog clip' and/or any other safety device provided.

*Note: If the 'dog clip' does not fully engage pull the release handle to disengage the jaws and slowly move tractor unit away from trailer, then repeat the fifth wheel coupling procedure.*

The second test is to select a low forward gear and, with the trailer parking brake still applied, slowly pull forward and perform a 'snatch test'. Repeat the snatch test to confirm the jaws have locked. Apply the tractor unit parking brake, stop the engine and remove the keys.

Wind up the landing legs and stow the handle. Release the trailer parking brake, ensure that any air suspension control is set to the ride position and attach the rear number plate.

Test the operation of all of the lamps.

Before pulling away, walk around the combination to check that everything is in order. These checks should include routine requirements of oil, water, fuel, windscreen, mirrors, truck and trailer wheels and tyres for security and legality, bodywork and ancillary equipment. It is also the responsibility of the driver to check that the load is secure and that the in-cab height indicator is correct. The driver should turn on the ignition to check that the ABS/EBS warning lamp(s) activate in the correct sequence and then extinguish. If, for any reason, the combination appears un-roadworthy, do not proceed, but seek assistance.

On pulling away, test the brakes to ensure correct operation and that, if fitted, the ABS warning lamp on the trailer functions correctly and extinguishes when a speed of 15 kph is exceeded.

### **Uncoupling using the split coupling method**

Park the combination in a straight line. Apply the tractor unit parking brake, stop the engine and remove the keys.

Apply the parking brake on the trailer.

Remove the trailer number plate and place in the stowage position provided or in the cab.

Lower the landing legs until they are in contact with the ground.

Remove the security dog clip and any other safety device, then pull the release handle to

disengage the fifth wheel jaws.

Slowly draw the tractor unit away from the trailer, if the tractor unit has air suspension stop after approximately 300mm and apply the tractor unit parking brake while the fifth wheel is still under the trailer rubbing plate and lower the rear axle air suspension to drop the fifth wheel away from the trailer. Lowering the suspension will prevent the rear of the tractor unit rising suddenly as the trailer weight is removed from the fifth wheel. Then, whether the tractor unit has air or mechanical suspension, continue to draw the tractor unit forward from under the trailer until the front of the trailer is approximately one metre away from the cab. This should safely allow access onto the catwalk behind the cab. Do not pull too far forwards, as doing so will exert excessive strain on the air and electrical service lines, which will result in damage. Apply the tractor unit parking brake, stop the engine and remove the keys.

Disconnect all of the air and electrical services. When disconnecting the air lines grip the connections firmly as they may kick back when released due to air pressure in the line.

*Note: Do not leave the connections loose, but place them in the dummy stowage positions provided or secure them on the cat walk in such manner that water and dirt cannot enter the connections.*

Slowly pull the tractor unit clear of the trailer and stop. Reset the tractor unit air suspension to the ride position. Apply the tractor unit parking brake, stop the engine and remove the keys.

Before leaving the trailer walk around it and check that it is in a safe condition.

### Close coupled semitrailers - coupling and uncoupling procedures

This procedure may be adopted whenever there is inadequate room between the rear of the tractor unit cab and the front of the semitrailer, when coupled, for the driver to work in safety. The driver must be advised of and understand the potential dangers to themselves and others when deviating from an approved procedure.

#### **Coupling using the cranked coupling method**

Slowly reverse the tractor unit towards the trailer, stop when the bottom of the fifth wheel ramps are level with the front of the trailer. Apply the tractor unit parking brake, stop the engine and remove the keys.

Check the parking brake on the trailer is applied. Do not walk under the trailer.

Inspect the fifth wheel and locking devices on the tractor unit plus the kingpin and rubbing plate on the trailer for any signs of damage. Assuming everything is in order move to the next stage. Should any damage be apparent do not continue but seek assistance.

Check and, if necessary, adjust the trailer coupling height relative to the fifth wheel, which is normally designed to accept the kingpin just below its parallel height. See the manufacturer's instructions for the correct procedure. Height adjustment may be achieved by extending or retracting the trailer landing legs. Changing the tractor unit height, if it is equipped with air suspension, is an alternative solution. If this process is not carried out correctly and the trailer is too high, in some cases it is possible to miss the fifth wheel jaws completely. This causes the kingpin to pass over it into a dangerous position behind the cab or rest on top of the fifth wheel.

Slowly reverse the tractor unit under the trailer until the fifth wheel jaws engage. Apply the tractor unit parking brake, stop the engine and remove the keys.

To check the fifth wheel jaws have correctly engaged carry out a visual inspection to verify that the kingpin is correctly located in the jaws and that the fifth wheel release handle is in the correct locked position. Fit the security 'dog clip' and/or any other safety device provided.

*Note: If the 'dog clip' does not fully engage, pull release handle to disengage the jaws and slowly move tractor unit away from trailer, then repeat the fifth wheel coupling procedure.*

The second test is to select a low forward gear and, with the trailer parking brake still applied, slowly pull forward and perform a 'snatch test'. Repeat the snatch test to confirm the jaws have locked. Apply the tractor unit parking brake, stop the engine and remove the keys.

Wind up the landing legs and stow the handle. Release the parking brake on the trailer and operate the shunt valve to allow the trailer to move. Ensure that any air suspension control is set to the ride position and attach the rear number plate.

Very slowly pull forward and turn the tractor unit right or left to a position that will give best access to the air and electrical couplings behind the cab and on the front of the trailer. Apply the tractor unit parking brake, stop the engine and remove the keys.

Connect the service air line (yellow) and electrical connections.



## Appendix Three (continued)

Connect the supply air line (red) and watch for any unexpected movement.

Ensure that the trailer shunt valve is no longer in the brakes released position.

Test the operation of all of the lamps.

Before pulling away, walk around the combination to check that everything is in order. These checks should include routine requirements of oil, water, fuel, windscreen, mirrors, truck and trailer wheels and tyres for security and legality, bodywork and ancillary equipment. It is also the responsibility of the driver to check that the load is secure and that the in-cab height indicator is correct. The driver should turn on the ignition to check that the ABS/EBS warning lamp(s) activate in the correct sequence and extinguish. If, for any reason, the combination appears un-roadworthy do not proceed but seek assistance.

On pulling away, test the brakes to ensure correct operation and that, if fitted, the ABS warning lamp on the trailer functions correctly and extinguishes when a speed of 15 kph is exceeded.

### **Uncoupling using the cranked coupling method**

Park the combination with the trailer near its final required location but with the tractor unit turned to the right or left in a position that will give best access to the air and electrical couplings behind the cab and on the front of the trailer. Apply the tractor unit parking brake, stop the engine and remove the keys.

Disconnect all of the air and electrical services. When disconnecting the air lines, grip the connections firmly as they may kick back when released due to air pressure in the line.

*Note: Do not leave the connections loose but place them in the dummy stowage positions provided or secure them on the catwalk in such manner that water and dirt cannot enter the connections.*

Operate the trailer shunt valve to allow the trailer to move.

Remove the trailer number plate and place it in the stowage position provided or in the cab.

Slowly manoeuvre the tractor unit and trailer into a straight line and then reverse the trailer into its final required location. Apply the tractor unit parking brake, stop the engine and remove the keys.

Apply the parking brake on the trailer.

Ensure that the trailer shunt valve is no longer in the release position.

Lower the landing legs until they are in contact with the ground.

Remove the security 'dog clip' and any other safety device, then pull the release handle to disengage the fifth wheel jaws.

Slowly draw the tractor unit away from the trailer, if the tractor unit has air suspension stop after about 300mm, and apply the tractor unit parking brake. While the fifth wheel is still under the trailer rubbing plate and lower the rear axle air suspension to drop the fifth wheel away from the trailer. Lowering the suspension will prevent the rear of the tractor unit rising suddenly as the trailer weight is removed from the fifth wheel. Then pull clear of the trailer and stop. Reset the tractor unit air suspension to the ride position.

If the tractor unit has mechanical suspension, stop when the trailer is clear of the fifth wheel.

## Appendix Three (continued)

Apply the tractor unit parking brake, stop the engine and remove the keys.

Before leaving the trailer, walk around it and check that it is in a safe condition.

### Supplementary safety rules for close coupled semitrailers

It is important to follow these safety rules:

- Do not give others the opportunity to take control of your vehicle, always apply the tractor unit parking brake, stop the engine and remove the keys before leaving the cab.
- If possible, when using the split coupling method described in Appendix two (pg 14), ensure that the trailer landing legs are in contact with the ground while connecting or disconnecting the air and electrical services.
- When using the cranked split coupling method described in Appendix three, never connect the services unless the kingpin is fully engaged in the fifth wheel jaw.
- Never pass, or allow others to pass, under the trailer.
- Never place fingers into the fifth wheel jaw.
- Wherever possible avoid coupling to a semitrailer from any position other than straight in line as this can give rise to a situation where excessive force is required, the kingpin may miss the fifth wheel, the trailer may be pushed sideways, damage could be caused or personal injury could occur.
- Always ensure that all safety devices are engaged.
- Never attempt to couple to a trailer when the kingpin is above the height of the fifth wheel.
- If the trailer is against a loading dock and the air suspension height is to be adjusted, pull the trailer forwards by 50mm and adjust the height before uncoupling.
- Do not attempt to uncouple a trailer unless it is equipped with landing legs.
- Ensure that the tractor unit and trailer are designed to work as a combination.
- Do not attempt to pull away with the low air pressure warning buzzer sounding. Always allow the system to become fully charged.
- If your vehicle is equipped with a parking break test position, use it as described in the truck manufacturer's instructions.
- The parking brake on the trailer has been applied when leaving the coupled vehicle for extended periods, e.g. overnight.

### Special applications

To accommodate some applications it may be necessary for an operator to use equipment that is not covered within these procedures, for example dual or multi position sliding fifth wheels and dual height raising fifth wheels, while other users may be engaged in special operations or use unusual design trailers. In these instances it will be necessary for bespoke operating instructions to be created following a risk assessment.

## Appendix Three (continued)

### **Parking semitrailers – good and bad practice**

Good practice means always ensuring:

- The ground is firm and level and will support both landing legs.
- That, after uncoupling, you check that the landing legs are not sinking into the surface.
- You uncouple while in a straight line as this will make coupling easier.
- You understand that when in reverse a trailer that is jack knifed is going nowhere, pull forward and try again.
- The trailer will not cause an obstruction or hazard to other traffic.
- The trailer will not pose a danger to pedestrians.
- The trailer will not contravene any national or local traffic regulations.
- You lower the air suspension, if fitted, when the trailer is to be left for extended periods.

- The parking brake on the trailer is always applied before it is uncoupled from the tractor unit.

Avoiding bad practice means:-

- Do not under any circumstances use the automatic application of the brakes caused by releasing the supply air line (red) as the parking brake. This is not a fail safe condition.
- Do not park the trailer on soft ground.
- Do not leave the trailer on an adverse incline, front, rear or sideways.
- Do not create an obstruction or park the trailer so it overhangs any vehicle routes or carriageways.
- Do not leave the trailer where coupling may be difficult.

### Centre axle drawbar trailers - coupling and uncoupling procedures

The driver must be advised of and understand the potential dangers to themselves and others when deviating from an approved procedure.

#### Coupling

Slowly reverse the chassis towards the trailer, stop when you estimate that the hitch and towing eye are about two metres apart. Apply the chassis parking brake, stop the engine and remove the keys.

Check the parking brake on the trailer is applied.

Raise the retractable rear under run protector if fitted.

On an air-actuated hitch, raise and set the pin as described in the manufacturer's instructions. With a spring loaded hitch raise the pin manually, after releasing the safety device, if fitted. On a coupling with a simple drop pin, release the locking device and remove the pin.

Before proceeding further, inspect the hitch and the air and electrical service connections on the chassis for damage, then inspect the trailer towing beam, including the eye and the air and electrical services for damage. Assuming everything is in order, move to the next stage. Should any damage be apparent do not continue but seek assistance.

After checking the relationship between the hitch and eye, slowly reverse the chassis towards the trailer.

When coupling to a centre axle trailer, line up the body sides as this will make coupling easier.

Stop when you estimate that the hitch and eye are 300 to 500mm apart. Apply the

chassis parking brake, stop the engine and remove the keys. Do not be tempted to couple to the trailer without checking your position as damage may result.

Check and adjust the height of the towing eye relative to the hitch, which is normally designed to accept the eye either on or slightly below the centre line of the jaw. See the hitch manufacturer's instructions for the correct procedure. Adjustment may be achieved by extending or retracting the trailer front prop leg. Changing the chassis height, if it is equipped with air suspension, is an alternative solution.

If necessary, adjust the position of the chassis laterally and be prepared to leave the cab a number of times to ensure a correct and safe connection.

On an air actuated and spring loaded hitch, the pin will drop automatically when the eye triggers the release catch.

*Note: Occasionally the pin will drop but fail to engage, if this happens reset the release mechanism after pulling the chassis forward and repeat the coupling procedure. Sometimes the eye will fail to trigger the pin, in this instance it may be necessary to adjust the height of the eye.*

With a manual drop pin in position, replace the locking device.

Before proceeding further, ensure that the pin is fully engaged. See the hitch manufacturer's instructions for the correct procedure. If necessary start the engine, release the brakes and very slowly rock the combination forwards. Reapply the chassis parking brake, stop the engine and remove the keys. Recheck that the pin is fully engaged.

## Appendix Four (continued)

Connect the service air line (yellow) and electrical connections.

Connect the supply air line (red) and watch for any unexpected movement.

*Note: If the trailer moves, immediately disconnect the supply air line (red) and check that the parking brake on the trailer has been applied.*

Raise the front and rear prop legs and stow the handle. Release the trailer parking brake, ensure that any air suspension control is set to the 'ride' position and attach the rear number plate.

Test the operation of all of the lamps.

Before pulling away, walk around the combination to check that everything is in order. These checks should include routine requirements of oil, water, fuel, windscreen, mirrors, truck and trailer wheels and tyres for security and legality, bodywork and ancillary equipment. It is also the responsibility of the driver to check that the load is secure and that the in-cab height indicator is correct. The driver should turn on the ignition to check that the ABS/EBS warning lamp(s) activate in the correct sequence and extinguish. If for any reason the combination appears un-roadworthy, do not proceed, but seek assistance.

On pulling away, test the brakes to ensure correct operation and that, if fitted, the ABS warning lamp on the trailer functions correctly and extinguishes when a speed of 15 kph is exceeded.

### Uncoupling

Park the combination in a straight line. Apply the chassis parking brake, stop the engine and remove the keys.

Apply the parking brake on the trailer.

Remove the trailer number plate and place in the stowage position provided or in the cab.

Lower the front landing leg until it is about 20mm from the ground.

Lower the rear prop legs to a height just above the ground. If the prop legs are equipped with multi-position spring loaded locking plungers select the position that gives minimum ground clearance.

Disconnect all of the air and electrical services. When disconnecting the air lines grip the connections firmly as they may kick back when released due to air pressure in the line.

*Note: Do not leave the connections on the ground, but place them in the dummy stowage positions provided or drape them over the towing beam so that water and dirt cannot enter the connections.*

Raise the towing pin to release the trailer. If the towing hitch has an air release mechanism or manual lever action see the manufacturer's instructions for the correct procedure. If the hitch has a simple drop pin, release the locking device and remove the pin by hand. Should the weight of the trailer be hanging on the pin, it may be necessary to move the prime mover slightly to remove pressure on the pin.

Slowly draw the chassis away from the trailer and stop when the vehicle is clear of the towing eye. Apply the chassis parking brake, stop the engine and remove the keys.

Before leaving the trailer walk around it to ensure that it is in a safe condition. If the chassis is equipped with a retractable

under run protector set it to the lowered position.

If the towing pin is removable, replace it and secure in position.

### **Supplementary safety rules for draw bar trailers**

It is important to follow these safety rules:

- Do not give others the opportunity to take control of your vehicle, always apply the chassis parking brake, stop the engine and remove the keys before leaving the cab.
- Never pass, or allow others to pass, between the chassis and trailer unless the towing pin is locked into the trailer eye, the combination is stationary, the chassis parking brake applied, the engine stopped and the keys removed.
- Never place fingers into the towing jaw.
- Always ensure that all safety devices are engaged.
- Never release the towing pin with the air and electrical services connected.
- Never connect the air and electrical services unless the towing pin is fully engaged.
- Never attempt to couple a centre axle trailer when the eye is above the centre line of the hitch.
- Never attempt to connect a hitch pin to a trailer eye of a different diameter.
- If the trailer is against a loading dock and the air suspension height is to be adjusted, pull the trailer forwards by 50mm and adjust the height before uncoupling.
- Do not attempt to uncouple a centre axle trailer unless it is equipped with prop legs.
- Do not uncouple a centre axle trailer with only a front prop leg unless you are sure that the weight of the load is in front of the axles.
- Ensure that the chassis and trailer are designed to work as a combination.
- Do not attempt to pull away with the low air pressure warning buzzer sounding. Always allow the system to become fully charged.
- When reversing the combination be aware that if the towing beam makes contact with the side of the hitch or mounting plates damage may result.
- Never try to straighten a bent eye or towing beam by applying pressure in the opposite direction, as a catastrophic failure may result.
- If your vehicle is equipped with a parking brake test position use it as described in the truck manufacturer's instructions.
- The parking brake on the trailer has been applied when leaving the coupled vehicle for extended periods, e.g. overnight.

### Turntable drawbar trailers - coupling and uncoupling procedures

The driver must be advised of and understand the potential dangers to themselves and others when deviating from an approved procedure.

#### Coupling

Slowly reverse the chassis towards the trailer, stop when you estimate that the hitch and towing eye are about two metres apart. Apply the chassis parking brake, stop the engine and remove the keys.

Check the parking brake on the trailer is applied.

Raise the retractable rear under run protector if fitted.

On an air actuated hitch, raise and set the pin as described in the manufacturer's instructions. With a spring-loaded hitch, raise the pin manually after releasing the safety device if fitted. On a coupling with a simple drop pin, release the locking device and remove the pin.

Before proceeding further, inspect the hitch and the air and electrical service connections on the chassis for damage, then inspect the trailer 'A' frame, including the eye, air and electrical services, for damage. Assuming everything is in order, move to the next stage. Should any damage be apparent do not continue but seek assistance.

After checking the relationship between the hitch and eye, slowly reverse the chassis towards the trailer.

On a turntable trailer, if the 'A' frame is pointing straight forwards, line up the body sides as this will make coupling easier. However should the 'A' frame be at an angle

to the front of the trailer, line up the side of the chassis bodywork to the side of the front axle tyres while making an allowance for the reduced width over the tyres of the trailer compared to that of the bodywork.

Stop when you estimate that the hitch and eye are 300 to 500mm apart. Apply the chassis parking brake, stop the engine and remove the keys. Do not be tempted to couple to the trailer without checking your position as damage may result.

Check and adjust the height of the towing eye relative to the hitch, which is normally designed to accept the eye either on or slightly below the centre line of the jaw. See the hitch manufacturer's instructions for the correct procedure. Adjustment may be achieved by lifting or lowering the 'A' frame on the spring balance or height adjustable support leg. Changing the chassis height, if it is equipped with air suspension, is an alternative solution.

If necessary, adjust the position of the chassis laterally and be prepared to leave the cab a number of times to ensure a correct and safe connection.

On an air actuated and spring loaded hitch, the pin will drop automatically when the eye triggers the release catch.

*Note: Occasionally the pin will drop but fail to engage. If this happens reset the release mechanism after pulling the chassis forward and repeat the coupling procedure.*

*Sometimes the eye will fail to trigger the pin, in this instance it may be necessary to adjust the height of the eye.*

With a manual drop pin in position, replace the locking device.

## Appendix Five (continued)

Before proceeding further, ensure that the pin is fully engaged. See the hitch manufacturer's instructions for the correct procedure. If necessary start the engine, release the brakes and very slowly rock the combination forwards. Reapply the chassis parking brake, stop the engine and remove the keys. Recheck that the pin is fully engaged.

Connect the service air line (yellow) and electrical connections.

Connect the supply air line (red) and watch for any unexpected movement.

*Note: If the trailer moves, immediately disconnect the supply air line (red) and check that the parking brake on the trailer has been applied.*

Stow any adjustable 'A' frame support leg fitted. Release the trailer parking brake, ensure that any air suspension control is set to the ride position and attach the rear number plate.

Test the operation of all of the lamps.

Before pulling away walk around the combination to check that everything is in order. These checks should include the routine requirements of oil, water, fuel, windscreen and mirrors, truck and trailer wheels and tyres for security and legality, bodywork and ancillary equipment. It is also the responsibility of the driver to check that the load is secure and that the in-cab height indicator is correct. The driver should turn on the ignition to check that the ABS/EBS warning lamp(s) activate in the correct sequence and extinguish. If for any reason the combination appears un-roadworthy do not proceed but seek assistance.

On pulling away, test the brakes to ensure correct operation and that, if fitted, the ABS warning lamp on the trailer functions correctly and extinguishes when a speed of 15 kph is exceeded.

### Uncoupling

Park the combination in a straight line. Apply the chassis parking brake, stop the engine and remove the keys.

Apply the parking brake on the trailer.

Remove the trailer number plate and place in the stowage position provided or in the cab.

On trailers with an 'A' frame spring balance proceed to the next process or, if fitted, lower the adjustable support leg until it is about 20mm from the ground.

Disconnect all of the air and electrical services. When disconnecting the air lines, grip the connections firmly as they may kick back when released due to air pressure in the line.

*Note: Do not leave the connections on the ground, but place them in the dummy stowage positions provided or drape them over the 'A' frame so that water and dirt cannot enter the connections.*

Raise the towing pin to release the trailer. If the towing hitch has an air release mechanism or manual lever action see the manufacturer's instructions for the correct procedure. If the hitch has a simple drop pin, release the locking device and remove the pin by hand. Should the weight of the trailer be hanging on the pin it may be necessary to move the prime mover slightly to remove pressure on the pin.



## Appendix Five (continued)

Slowly draw the chassis away from the trailer and stop when the vehicle is clear of the towing eye. Apply the chassis parking brake, stop the engine and remove the keys.

Before leaving the trailer, walk around it to ensure that it is in a safe condition.

If the chassis is equipped with a retractable under run protector set it to the lowered position.

If the towing pin is removable replace it and secure in position.

### Supplementary safety rules for drawbar trailers

It is important to follow these safety rules:-

- Do not give others the opportunity to take control of your vehicle, always apply the chassis parking brake, stop the engine and remove the keys before leaving the cab.
- Never pass, or allow others to pass, between the chassis and trailer unless the towing pin is locked into the trailer eye, the combination is stationary, the chassis parking brake applied, the engine stopped and the keys removed.
- Never place fingers into the towing jaw.
- Always ensure that all safety devices are engaged.
- Never release the towing pin with the air and electrical services connected.
- Never connect the air and electrical services unless the towing pin is fully engaged.
- Never be tempted to move a turntable trailer towing eye to the hitch by releasing

the brakes – always take the hitch to the eye.

- Never attempt to connect a hitch pin to a trailer eye of a different diameter.
- If the trailer is against a loading dock and the air suspension height is to be adjusted, pull the trailer forwards by 50mm and adjust the height before uncoupling.
- Turntable trailers have an 'A' frame with a spring balance or prop leg to provide height adjustment. If no support method is provided do not uncouple the trailer.
- Ensure that the chassis and trailer are designed to work as a combination.
- Do not attempt to pull away with the low air pressure warning buzzer sounding. Always allow the system to become fully charged.
- When reversing the combination be aware that if the 'A' frame makes contact with the side of the hitch or mounting plates, damage may result.
- Never try to straighten a bent eye or 'A' frame by applying pressure in the opposite direction, as a catastrophic failure may result.
- If your vehicle is equipped with a parking brake test position use it as described in the truck manufacturer's instructions.
- The parking brake on the trailer has been applied when leaving the coupled vehicle for extended periods, e.g. overnight.

### **Parking trailers – good and bad practice**

Good practice always means:

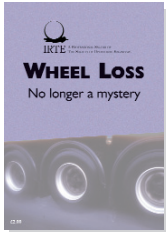
- The ground is firm and level and will support both landing legs.
- That, after uncoupling, you check that the landing legs are not sinking into the surface.
- You uncouple while in a straight line as this will make the coupling easier.
- You understand that when in reverse a trailer that is jack knifed is going nowhere. Pull forward and try again.
- The trailer will not cause an obstruction or hazard to other traffic.
- The trailer will not pose a danger to pedestrians.
- The trailer will not contravene any national or local traffic regulations.

- You lower the air suspension, if fitted, if the trailer is to be left for extended periods.
- The parking brake on the trailer is always applied before uncoupling from the prime mover.

Avoiding bad practice means:

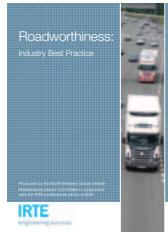
- Do not under any circumstances use the automatic application of the brakes caused by releasing the supply air line (red) as the parking brake. This is not a fail safe condition.
- Do not park the trailer on soft ground.
- Do not leave the trailer on an adverse incline – front, rear or sideways.
- Do not create an obstruction or park the trailer so it overhangs any vehicle routes or carriageways.
- Do not leave the trailer where coupling may be difficult.

# SOE publications



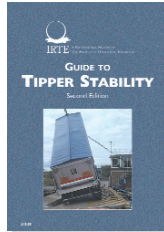
## 'Wheel Loss – No Longer a Mystery'

The SOE's guide to wheel loss is based on BS AU50 Part 2 section 7a (1995). The guide explains the mechanisms of wheel loss and provides helpful best practice guidance to assist those specifying and maintaining commercial vehicles to reduce wheel loss incidents.



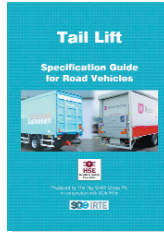
## Roadworthiness Guide

The guide, written by the North Western Goods Vehicle Maintenance Liaison Committee and supported by North West Traffic Commissioner Beverley Bell, is intended to assist vehicle operators and managers regardless of fleet size, to improve their vehicle maintenance controls and standards.



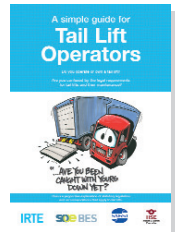
## IRTE Guide to Tipper Stability

Essential guidance for those wishing to implement best practice when operating tipping vehicles or tipper trailers.



## Tail Lift – Specification Guide for Road Vehicles

Guidance for manufacturers, specifiers, installers, suppliers and users of tail lifts as to the safety issues associated with tail lift installations.



## A simple guide for Tail Lift Operators

This guide provides some basic information and highlights the user's legal responsibilities in the use, maintenance and examination of tail lifts. It is written in a simple question and answer format and is intended to be used as a basic guide to clarify current legislation that applies to tail lifts and tail lift manufacturers' recommendations.



## Guide to Wheel Security

The associated quick reference poster for the *Wheel loss – No longer a mystery*

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