

Operators Safety Guide



Counterbalance & Reach Trucks



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INTRODUCTION

This is an operator's guide on how to work safely when operating forklift trucks. Although it may be detailed in areas, the operator of the forklift truck should always refer to the manufacturer's operator handbook where possible.

There are a very wide variety of working conditions in which forklift trucks are used. It is not our intention in this manual to cover every possible operating condition, there are too many.

Legislation

Current legislation places responsibility on you — the operator, to operate the forklift truck to a high, safe standard. L117 is an approved code of practice for Operator Training and Safe use of Forklift trucks. Other main legislation is HASWA, PUWER and LOLER.

Your employer has the responsibility to provide you with:

- Adequate training for the equipment
- A safe forklift truck for you to use.
- Appropriate PPE.

By attending a Forklift Training course — your employer has provided you with adequate training for the Forklift truck, the rest is up to you!!

NAME

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COMPANY

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MACHINE TYPE/MODEL

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COURSE DATE(S)

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Operators Safety Code

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Conditions where fork lift trucks are used can sometimes present risks for operators, but lack of fore-sight by employers and operators multiply these risks.

When you operate a fork lift truck, make sure it is in a safe condition and is suitable for the work for which it is intended. Look after your truck properly and treat it with respect. Above all, be sure that you possess all the expertise which will be needed for operating your truck for any job in hand.

According to the 'Health and Safety at Work Act'1974', training is necessary to learn these skills. The Code of Practice L117 relating to the basic training of fork lift truck operators, published by the H&S Executive, gives valuable guidance. You can increase your proficiency by regular use of trucks or by observing experienced operators. Know and respect your truck's limits. Every year, people are injured and even die because they don't take simple precautions. Many more are thankful to escape from accidents of their own making. The aim of this book is to remind you of additional safeguards which could contribute so much to you and your colleagues' safety. Always seek advice whenever you feel the need. Whatever your doubt or difficulty, your Supervisor or Manager is never far away, and it is part of their duties to provide help and guidance, the safety officer is always willing to give sound, impartial help.

Pre – Use Inspection

At the beginning of each shift, or whenever you take over a truck, you must examine it first. One or two minutes should be spent checking that the truck is safe and fit to carry out its work.

CHECK

Inspect forks, carriage, mast, hoist chain, (and reach channels of reach trucks) for cracks, distortions, excessive dirt or any foreign bodies which may be fouling the mechanism.

Check tyres (test pressures on pneumatics) for undue wear or damage, remove flints. Swart, etc., from the tread.

Examine the general condition of the truck: check on top of the mast section, lie bars, and overhead guard, for articles which may have been left there and will tan when the truck is operated. That the seat restraint are fitted and in good working order, Make sure that the seal is secure and examine the body work for damage, rust, broken hinges, or locks, etc. On engine driven trucks, check the coolant and lubricating oil levels, Top up to the marks indicated when necessary with the approved fluid. If you notice a serious loss of oil, TURN OFF the engine and report it immediately. Operate all controls, hydraulic control levers, horn, lights, and direction indicators if fitted. Any attachments and accelerators to ensure that they function correctly, Drive the truck slowly and test the efficiency of both foot and hand brake, Report all faults to your Supervisor or Foreman immediately upon completion of the inspection. Do NOT attempt repairs unless directly instructed to do so.

A FAULTY TRUCK SHOULD NOT BE USED UNTIL IT HAS BEEN REPAIRED.

Good practice begins before the truck is operated. A careful examination can reveal possible hazards or mechanical defects. These can be put right before they become serious, thus preventing accidents and reducing truck downtime.

Pre- Use Checklist Example**LIFT TRUCK PRE-USE CHECK RECORD SHEET**
For**Rider Operated Counterbalanced & Reach Lift Trucks
(For Candidate Use)**

Candidate's Name:	Test Date:
Lift Truck Type:	Make/Model:
Signature:	Motive Power:

	Item	OK (✓)	N/A (✓)	Defect Reported
1	Fork Arms			
2	Carriage Plate			
3	Backrest Extension			
4	Mast			
5	Mast Roller / Slides			
6	Lift Chains			
7	Chain Pulleys			
8	Hydraulics			
9	Wheels			
10	Tyres			
11	External Condition			
12	Operating position			
13	Operators Seat			
14	Gas Powered Trucks			
15	Starting Procedure Engine Trucks			
16	Starting Procedure Electric trucks			
17	Lights			
18	Audible Warnings			
19	Hydraulic Controls			
20	Drive & Braking			
21	Steering			
22	Fault Reporting Procedure			

BATTERY CARE & CHARGING

INTRODUCTION

The performance of an electric fork truck is largely determined by the efficiency of its traction battery. This battery is an extremely costly part of the truck and generally carries a long guarantee by the battery manufacturer. A neglected battery will result in a considerable increase in truck downtime and invalidate the guarantee. It is usually an engineer's responsibility to maintain the battery and its charging equipment, but it is often the truck operator's job to carry out the simple day-to-day tasks involved in general battery care.

GENERAL SAFETY POINTS

Do not smoke in the charging area and never use a naked flame as a light when checking batteries. The battery cells contain acid; therefore a supply of clean water must be available. Should a person come into contact with the acid, it must be washed off immediately. Seek First Aid and report the accident. It is advisable to wear protective safety glasses, and to wear suitable protective gloves whilst checking the battery. Disconnect the battery from the truck or charger before commencing battery inspection or maintenance. Make sure that loose metal objects such as tools, steel rules in top pockets, or metal wristlet straps cannot accidentally fall on to, or come into contact with, the top of the battery.

BATTERY CHARGING PROCEDURE

1. Be sure the charger and the trucks Ignition is **OFF** before connecting or disconnecting the battery.
2. Do not disconnect the battery plug when there is current going through, as this may cause arcing and damage the plug.
3. Battery chargers should be in a well ventilated area and should be easily accessible.
4. Battery chargers should not be in a wet or damp area, and never stand in water when connecting battery to charger.
5. Always match the correct charger for the battery. If you are unsure about the correct charger, ask your trainer.
6. Do not smoke, use power tools or do anything that will create sparks around the battery charger area. Charging batteries gives off explosive flammable gases which easily ignite when coming into contact with a spark.
7. Handle the battery carefully. Do not drop, bump or have something fall onto the battery. Keep feet clear of the battery and stay out of the fall zone.
8. Contact your supervisor if the battery, battery charger cables or connectors show any bare wires, melting or damage. The connectors should have a snug fit and should not be damaged from arcing.
9. Check to make sure that the power supply cable to the charger is in good condition.
10. Do not touch battery terminals or the cell connectors on top of the battery to prevent getting an electrical shock.
11. Do not place any tools or any other metal objects on top of a battery.
12. Only recharge the battery when it is absolutely necessary (3 bars and below).
13. If you suspect any abnormal battery or charger condition, turn off the power supply and inform your trainer immediately.

Refuelling Diesel and LPG Engine Trucks

INTRODUCTION

Fork Lift Trucks with internal combustion engines have risks associated with them which call for proper precautions to eliminate the possibility of explosion.

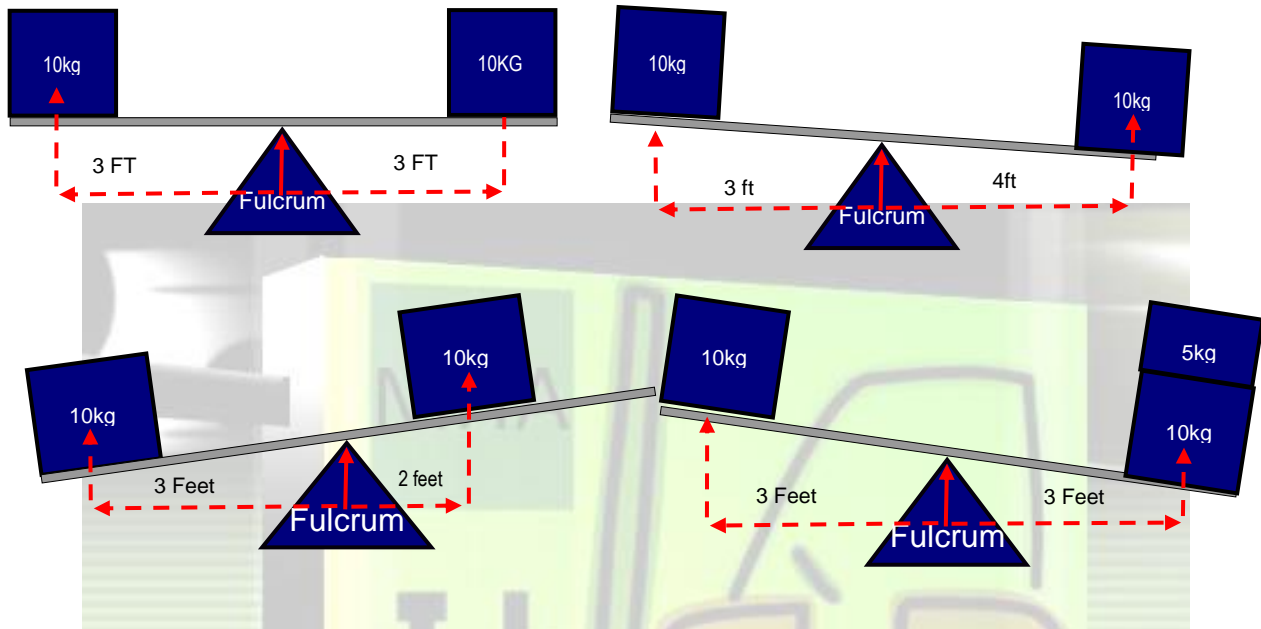
SAFETY

- 1 Good ventilation is important when operating inside buildings.
- 2 Do not use in confined spaces.
- 3 Refuelling should take place outside buildings.
- 4 No smoking signs should be clearly displayed in these areas.
- 5 Engines must be switched off during refuelling.
- 6 LPG cylinders should be changed preferably outside buildings or where ventilation is adequate.
- 7 LPG cylinders must only be disconnected when the valve is firmly shut off.
- 8 LPG cylinders must be mounted with the direction arrow (on base of cylinder) pointing downwards.

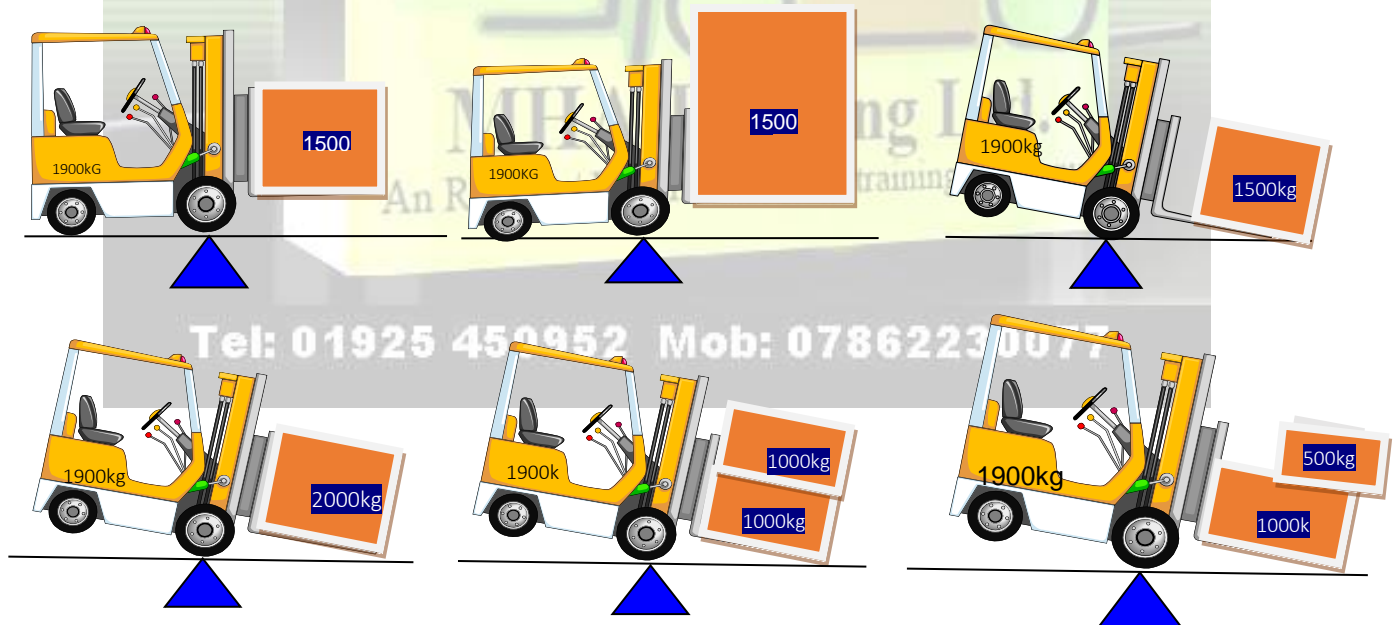
TRUCK STABILITY

To understand the stability principles of a forklift truck first we must understand the principles of Counterbalance:

The main function of lift truck is to transport heavy loads, this can create some issues with balance, Things that can affect Counterbalance are **WEIGHT, DISTANCE & FORCE**.



Using the see saw analogy, we can alter the counter balance effect by either adjusting the distance of the weight or applying heavier weights



The counter balance effect as it applies to lift trucks

RATED CAPACITY

All MHE have a Rated Capacity plate – this contains information on the **Maximum weight** that a machine will safely lift at a specific **load centre** upto a given **height**.

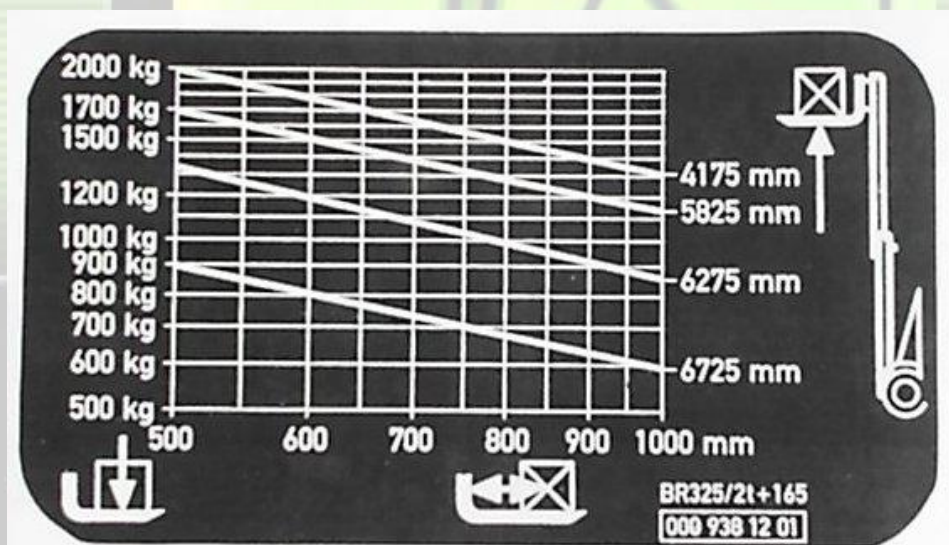
Load centre is the distance from the vertical face of the forks to the centre of gravity of the load.

If the **load centre** is increased then the truck's **weight** capacity must be reduced. So, it's really important to keep all loads back to the heel of the forks – to maintain stability.

BEWARE

It's an offence to exceed the truck's rated capacity or operate a truck not fitted with a rated capacity plate.

RATED CAPACITY PLATE



Rule of Thumb

For every 100mm added to the load centre. You must take 10% off the maximum weight that can be lifted to the same height

THE OPERATORS' SAFETY CODE

GENERAL

- 1 Only operate a truck if you are authorised to do so by your employer.
- 2 Always read the truck manufacturer's handbook before operating equipment.
- 3 Always carry out pre-shift safety checks to your truck.
- 4 Do not operate a truck if you feel over tired. Never drive after drinking alcohol or whilst under the influence of drugs. Do not drive if you are unwell.
- 5 If you need spectacles to meet the official eye sight standard, wear them.
- 6 Hard hats should be worn when handling pallets containing small objects above head height.
- 7 Wear your seat belt at all times you are obliged to do so by PUWER regulations.

SIGNS

- 7a be aware of your company's signs and road markings.
- 7b be aware of height limitations within your company's premises – Roller Shutter Doors

SIGNALS

8. Give signals if they would help or warn other users, when approaching aisles or roadways, give them clearly and in good time.
- 9 Watch out for other operators' signals and take any necessary action promptly.

MOVING OFF

- 10 Before moving off, look round and move only when you can do so safely. An easy way of remembering this is **GOB** which stands for **G**ears, **O**bservations then **B**reaks.

DRIVING

- 11 Generally drive on the left but when driving between rows of machines or racks, it may be safer to be positioned in the middle of the passageway.
- 12 Before you approach crossings, junctions or doorways, slow down and sound horn several short blasts to attract attention.
- 13 Pedestrians should try to keep out of the way of fork lift trucks, but it is the responsibility of the driver to avoid pedestrians.
- 14 Drive carefully, don't show off, or drive dangerously.
- 15 Never allow anyone to ride on your truck or on the forks.
- 16 Never allow anyone to walk under the elevated forks, whether or not a load is being raised or lowered.

- 17 Never lift anyone up on the forks or a pallet. Use an approved working platform for this purpose.
- 18 Watch out for objects lying on the floor. Do not drive over them. Park safely and remove them.
- 19 If following other trucks, keep your distance. A safe breaking distance is approximately 3 truck lengths.
- 20 If a tall load blocks forward vision, drive backwards and look in the direction of travel (except when going up a slope – see 28 (all)).
- 21 If de-stacking a load at height that could collapse, leave it and report it to your supervisor first.
- 22 When travelling, always keep your hands, arms, head and feet well within your truck.
- 23 Always drive at a safe speed, allowing for conditions. Slow down for wet or slippery surfaces.
- 24 Always be aware of floor surfaces that may be unsuitable for your truck (i.e. soft ground)
- 25 Carry loads as close to the ground as possible with the mast or forks tilted back to cradle the load, but be aware of changes in ground clearance
- 26 When driving without a load, the forks should be raised clear of the ground (100-150mm) and level for operating inside a building and for driving outside the forks should be tilted backwards sufficiently
- 27 Avoid making fast starts, jerky stops and quick turns, especially when loads are being stacked. Operate controls smoothly.

SLOPES

- 28 To improve stability, traction and grip when driving on a slope, follow these rules: when a load is carried, the load should face uphill. If vision is obstructed, get assistance.
- 29 On a slope the forks should be tilted backwards and raised just enough to clear the ground at the base of the slope.
- 30 Keep the truck at a safe speed on a slope.
- 31 Do not turn across a slope
- 31 Always cross bumps, guiles, railway lines and sleeping policeman at 45°
- 32 Never stack on a slope
- 33 A truck should not be left unattended on a slope. If in any emergency it has to be parked on a slope, wedge the wheels to prevent movement.

PICKING UP LOADS

34 Before deciding whether to lift a load, check its weight and load centre. If it is too heavy, get a bigger capacity truck or lighten the load.

35 Where possible, enter load from the WIDE side to increase load and truck stability.

36 Forks should be fully inserted and spaced to suit the width and type of load to be carried. Extra care should be taken when tips of forks extend beyond the load.

37 Take extra care when handling long, wide or high loads or those that cannot be centred.

38 Do not tow or push loads into position. Use only proper attachments.

39 Do not use damaged pallets.

40 Do not attempt to handle loads using TWO trucks at the same time, unless under supervision from an expert responsible for the handling operation.

PARKING

41 Avoid obstructing aisleways, doorways, fire equipment and fire exits.

42 Park truck with forks tilted forwards slightly, with a heel gap and forks tips touching the floor.

43 Before leaving your truck, apply brakes, put controls in neutral and ensure ignition key or starter switch key is removed. Keep the key in a safe place or issue a key for each authorised operator.

Stacking / Destacking

N.B If the truck has a neutral gear this should be engaged along with Handbrake when using any hydraulic functions.

STACKING

1. Approach the stack squarely and ensure fully lined up with destination with the load low and tilted back sufficiently.
2. Stop 6" from the stack taking into account any fork protrusion, apply brakes, neutral and reduce back tilt. Lift the load to approx. 1.5 inches above the stacking height.
3. G.O.B drive slowly forward ensuring not fouling loads / rack above, below or to the sides.
4. Level the forks and check mast vertical, drive slowly forward until directly over the stacking position. Apply brakes/neutral and lower onto the stack ensuring mast does not bump the rack or stack.
5. Now the load is safely stacked, lower the forks until free from the pallet, check behind you and your aisle, release the brakes and withdraw by reversing occasionally glancing back at your forks ensuring it isn't rubbing but mainly looking in the direction of travel.

6. When clear, handbrake/neutral lower the forks ensuring clear and apply travel position before moving off.

DE-STACKING

1. Check the load to be de-stacked is within the rated capacity of the machine.
2. Stop in line with the load 6" away and apply handbrake. Bring the forks to level or mast to vertical. Ensure forks are spread evenly and lined up for the load.
3. Lift to a position which allows clean entry to the pallet or load, Then Gear, observations, release brake and drive slowly forward, check forks are entering evenly and not rubbing and fully insert into the load.
4. Handbrake / Neutral and lift the load approx. 1.5 inches ensuring clearance above the load.
5. Gears, observations, release the brake and begin to withdraw the load from the racking mainly looking in the direction of travel but glancing back at the load to ensure clean withdrawal.
6. Once clear of the racking apply the brake and neutral then add some stabilising tilt and lower the load into a safe travelling position before moving off.

Vehicle Loading and Unloading

One of the most important duties of a fork truck operator is to load and unload goods vehicles either from ground level or from loading bays/docks.

Many accidents occur during this operation mainly due to the forklift operator failing to ensure safety precautions are taken prior to loading or unloading.

Firstly, let's take a look at loading or unloading from ground level:-

Before we load or unload, we check the paper work for the correct address and that the load is within a safe weight limit for the lift truck and the order of loading (or unloading).

The vehicle should be parked on level ground, if possible away from obstructions, pot-holes and gulleys.

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We need to ensure that there is access from both sides of the lorry.

Remember the vehicle must be stable at all times.

Check the driver has applied the brakes and switched off the engine.

LOADING AND UNLOADING

Commence loading at cab end, ensuring goods are in delivery order. Load equally each side towards the rear, keeping loads tightly placed to prevent movement in transit.

Unloading is the reverse procedure, starting from the rear end first and working from side to side to prevent straining the chassis and the risk of the vehicle tipping.

TRAILER LOADING/UNLOADING

If the tractor unit is removed from the trailer, either support the front of the trailer or place a load at the rear (over the axles) to prevent the risk of tipping and ensure trailer brake is applied and wheels chocked.

Vans or Containers:- Unloading from ground level.

To prevent risk of accidents, only use proper equipment or attachments to pull or tow loads to the rear (i.e. pallet truck).

Loading Docks: Before loading from loading docks, care must be taken to ensure the lorry is parked properly. If the tractor unit is left in place the ignition key of the unit should be left with the truck operator until loading or unloading is finished. This prevents the Vehicle being accidentally driven away.

The truck's weight should be checked to ensure that the vehicle can withstand it.

The dock-leveler or bridge plate should be of sufficient strength to withstand the combined weight of truck and load. They should be fixed in place. Care should be taken to ensure the truck's mast will enter. No persons should be allowed in the containers until loading or unloading is finished.

SUMMARY

Good fork truck operating begins before the vehicle is loaded or unloaded.

Check that the vehicle is at the right address with the correct goods. Check the load is within the safety limits of the truck.

Remember the vehicle must be stable at all times and if possible on sound, level ground.



Theory Revision Questions

1. Give 4 examples which cause a lift truck to tip forward (longitudinal instability)
2. In relation to a trucks capacity, which 3 items of information must be printed on a truck's rating capacity plate?

3. Give 4 examples which cause a lift truck to tip sideways (lateral instability)

4. What is meant by the term "load centre" as it applies to lift trucks?
 - a. The width that the forks should be set on the carriage plate.
 - b. The length of the truck and the load.
 - c. The measurement from the front face of the fork arms to the centre of gravity of the load.
5. What is the recommended way to approach a stack to place or retrieve a load?
 - a. Drive slowly forward: raise the forks to the required height: stop: apply the parking brake.
 - b. Stop not more than 160mm(6 inches) from the stack: apply the parking brake: select neutral, adjust tilt and raise forks.
 - c. Stop at least a metre from the stack: raise the forks to the required height drive slowly forward.
6. In normal circumstances and on level ground if the load obscures your view, you should:
 - a. Dismount, check the way is clear, then drive forward slowly sounding your horn.
 - b. Travel in reverse, looking in direction of travel.
 - c. Ask your supervisor to guide you with hand signals.
7. When driving a LADEN lift truck on a slope the load should be:-
 - a. Facing Downhill.
 - b. Facing Uphill
 - c. Tilted forward.
8. When preparing to move off the safest procedure is as follows:-
 - a. Transmission engaged – look over both shoulders – handbrake off – move.
 - b. Look over shoulders – transmission engaged – handbrake off – move.
 - c. Handbrake off – transmission engaged – look over both shoulders – move.

COURSE NOTES





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