Created by: Benson Group Inc.

Narrow Aisle Reach Trucks, Order Pickers and Turret Truck (class I) Re-Certification

Introduction to Safe Operation of Narrow Aisle Trucks and Turret Trucks

Overview

Welcome to the **Narrow Aisle Trucks and Turret Truck Safe Operation Training Module**! This program aims to provide you with essential knowledge and skills for the safe and efficient operation of these specialized vehicles.

Objectives

- **Understand Specific Features and Functionalities**: Learn about the unique aspects of narrow aisle trucks and order pickers, including turret trucks.
- **Best Practices for Maneuvering**: Discover effective techniques for navigating within confined spaces.
- **Adherence to Safety Protocols**: Recognize the importance of following safety guidelines to prevent accidents and injuries.

Who Should Attend?

Whether you're a seasoned operator or new to these vehicles, this training will enhance your expertise and ensure a safer workplace environment.

Health and Safety & Operator Competency

The Occupational Health and Safety Act states that class 1 operators should demonstrate proper safety habits and competency.

A "competent person" means a person is:

- Qualified because of their knowledge, training and experience
- Familiar with the Health & Safety guidelines outlined by the OHSA for their type of work
- Knowledge of any potential health risks or danger in the workplace

According to the OHSA, Section(28.1), a worker shall:

- Work in compliance with the provisions of the act and regulations
- Use or wear protective equipment when required
- Report to their employer or supervisor any damage or defect to the equipment or vehicle which could cause harm to them selves or others
- Report to their employer or supervisor any known hazards

Pre-Shift Inspections

To ensure the safety of the operator and their co-workers, it is extremely important for the operator to conduct a pre-shift inspection of their vehicle.

Conducting pre-shift inspections is a crucial practice that can significantly prolong the lifetime of a forklift or any other industrial vehicle. Here's how:

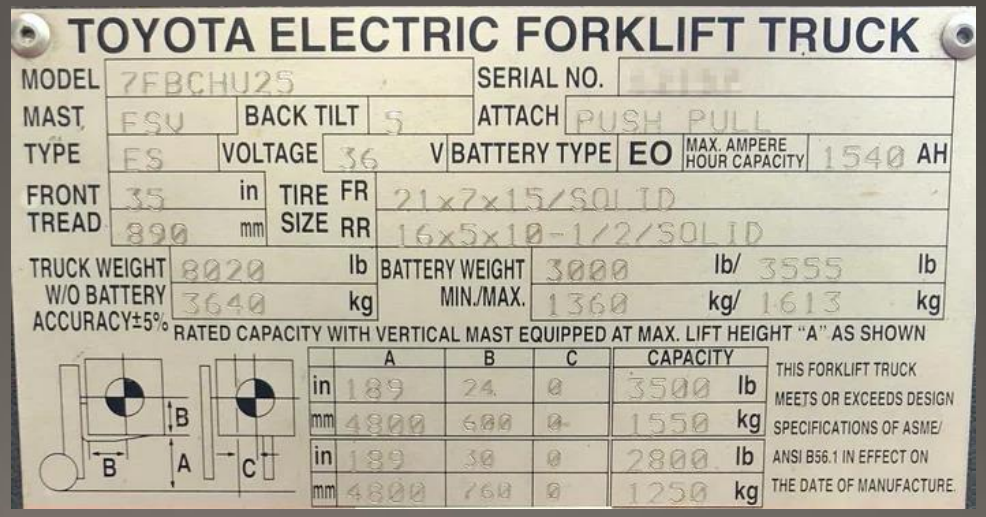
- Early detection of minor problems before it escalates into something major
- Routine checks can reveal when parts need lubrication, adjustment, or replacement, ensuring the vehicle operates smoothly and efficiently
- Vehicles that are regularly inspected and maintained tend to perform better. This reduces the strain on the engine, hydraulics, and other systems, minimizing wear and tear

Nameplate – How to Identify Capacity and Load Centre

Every lift truck must have a nameplate that is securely attached and legible.

The nameplate contains vital information about the truck's capacity. If the lift truck is modified in any way or has an attachment added, the nameplate must be updated by a qualified dealer or manufacturer of the truck.

The nameplate will show the maximum weight the lift truck can lift and maximum lifting height at a specified load center distance. (Some manufacturers rate capacity based on load height.)



TOYOTA ELECTRIC FORKLIFT TRUCK

MODEL	7FBCHU25			SERIAL NO.			
MAST TYPE	FSV ES	BACK TILT	5	ATTACH	PUSH PULL		
		VOLTAGE	36 V	BATTERY TYPE	EO	MAX. AMPERE HOUR CAPACITY	1540 AH
FRONT TREAD	35 in / 890 mm	TIRE SIZE	FR 21x7x15/SOLID RR 16x5x10-1/2/SOLID				
TRUCK WEIGHT W/O BATTERY	8020 lb / 3640 kg	BATTERY WEIGHT MIN./MAX.	3000 lb/ 3555 lb 1360 kg/ 1613 kg				

ACCURACY±5% RATED CAPACITY WITH VERTICAL MAST EQUIPPED AT MAX. LIFT HEIGHT "A" AS SHOWN

	A	B	C	CAPACITY
in	189	24	0	3500 lb
mm	4800	600	0	1550 kg
in	189	30	0	2800 lb
mm	4800	760	0	1250 kg

THIS FORKLIFT TRUCK MEETS OR EXCEEDS DESIGN SPECIFICATIONS OF ASME/ ANSI B56.1 IN EFFECT ON THE DATE OF MANUFACTURE.

Stability Principles

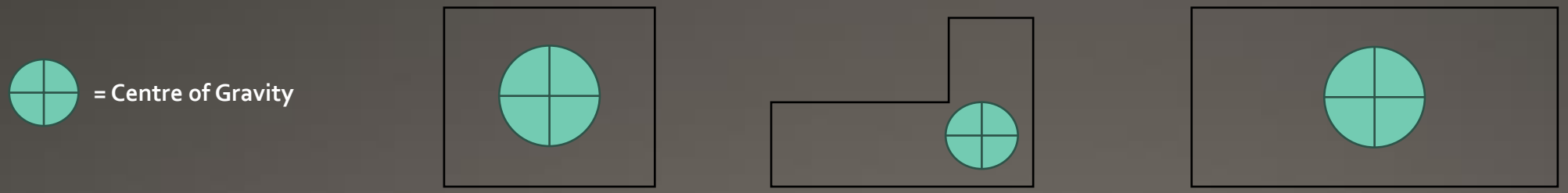
A narrow aisle lift truck uses a stability principle of two weights on either side of a balance point. The weight of the lift truck counterbalances the weight of the load that the truck is carrying. As long as there is more weight on the lift truck side of the balance point, the truck will remain stable.

To further understand how a lift truck handles the load, three concepts will be discussed: **Centre of Gravity, Load Centre** and **Stability Pyramid**. Safe operators must understand these principles and the forces that can unbalance a lift truck.

Center of Gravity

The Centre of Gravity is defined as: The point at which an object would be balanced if suspended by that point.

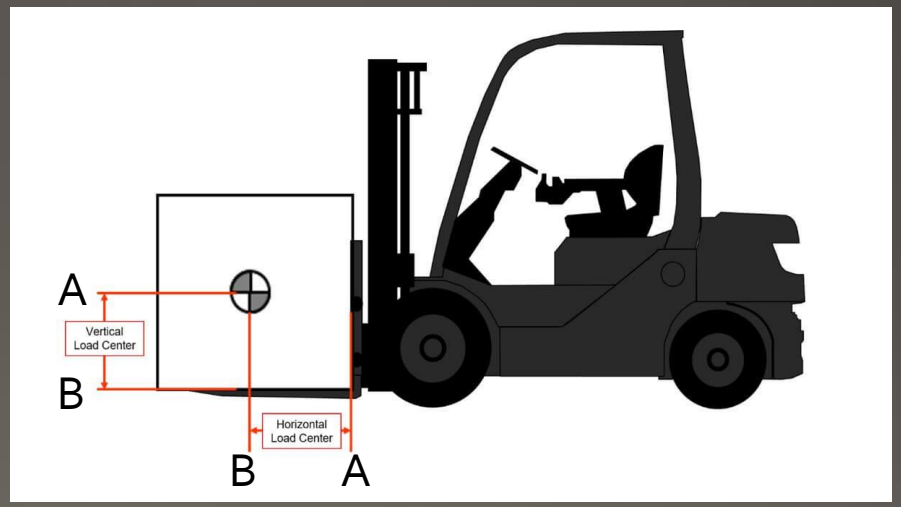
Common sense would indicate that the centre of gravity is at the centre of an object, but look at the diagram below: the three loads all have the same weight, but because the shapes are different, the centre of gravity of each is at a different point.



Load Centre

The Load Centre is defined as: the distance from the face of the forks to the centre of gravity of the load.

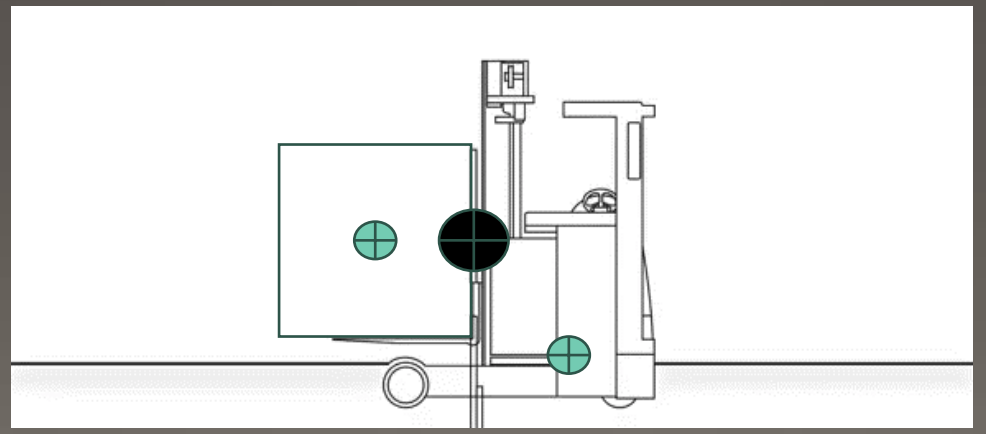
As shown in the diagram, the load centre is the distance from point A to point B. Manufacturers have determined the safe load and load centre combination for each lift truck and display this information in the charts that accompany the truck. The greater the load centre, the lower the load capacity that can be safely carried.



The Stability Pyramid

Now lets look at how the lift truck carries a load. When a lift truck picks up a load, the centre of gravity of the truck and the centre of gravity of the load produce a *combined centre of gravity.* This combined centre of gravity will shift in the direction that the load is placed.

A narrow aisle lift truck has a four-point contact with the floor. For stability purposed, the front load wheels (two), the caster wheel and the drive wheel define the **stability trapezoid**. The added dimension of the lift height forms a three-dimensional shape referred to as the **stability pyramid**.



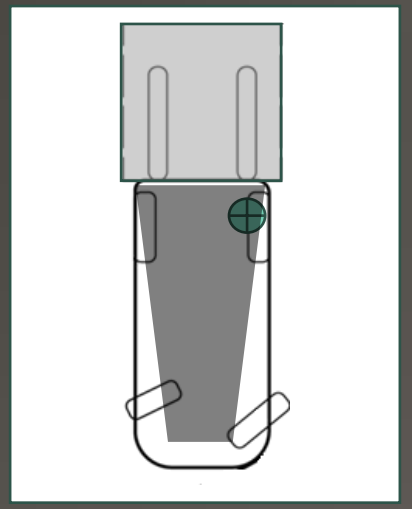
The Stability Pyramid Continued

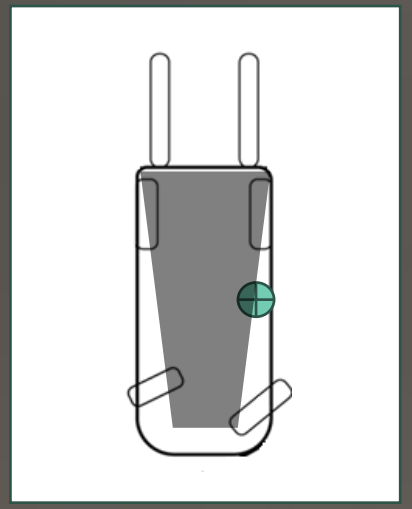
If the combined centre of gravity stays within the stability pyramid, the lift truck will remain stable. However, if the centre of gravity moves outside the pyramid, such as when the load is too heavy or during a turn with the load elevated, the truck will become unstable and tip over.

Some of the main reasons for the tip-over are sharp turns, raised or unstable loads, uneven floor surfaces, turns on ramps and wet or slick surfaces. When a narrow aisle lift truck is in motion, forces such as lifting or turning and stopping with raised loads can cause the combined centre of gravity to move outside the stability pyramid, causing the truck to tip over. Make slow and gradual maneuvers when operating a narrow aisle lift truck. Keeping the lift truck under control at all times is the mark of a safe and alert operator.

Turning Safely with a Load

Most fatal accidents involving lift trucks occur when the lift truck tips over sideways.
Consider the images:





Both trucks are making a left-hand turn and have to make an emergency stop, this pushes the centre of gravity to the edge of the trapezoid. The truck that has a load has a centre of gravity that is within the stability trapezoid. The other truck could tip over very easily with fast or abrupt movements.

Safe Operating Procedures

As an operator of a narrow aisle lift truck, your safety, the safety of your load and the people around you must always be your main priority. Observing safety guidelines will enable you to operate the truck in an efficient and safe manner.

Some other rules for operating safely are:

- Avoid striking overhead electrical fixtures, valves, sprinkler systems, etc., during high lift operations
- Always look in the direction you are travelling, even if only travelling a short distance
- Keep to the right when passing other vehicles and always make sure the other operator is aware of your presence
- Maintain a distance of 20 feet behind another truck going in the same direction
- Keep all limbs and appendages inside the truck at all time and never dismount until it comes to a full stop
- While travelling, keep the forks elevated enough to avoid ground objects, whether the truck is loaded or not

Order-Picking Lift Truck Safety Procedures

Improper use of an order picker lift truck can result in falls, falling product and collisions with people and racking. Any part of the operators body that is outside the platform is at high risk of being hit by falling objects.

Before operating an Order Picker:

- Make sure you are fully competent before you operate the picker unsupervised
- Make sure that you have been trained to recognize the early signs of mechanical breakdown that must be reported and that you check routinely for these signs
- If you are likely to reverse near people, make sure that the truck has warning lights and alarms
- Review potential hazards in your work area

Order-Picking Lift Truck Safety Procedures Cont…

While operating the Order Picker:

- Before you raise the platform, make sure that the floor is level and free of damage, slippery surfaces or blockages in aisles
- Before you raise the platform, note clearances such as pipes, lights and sprinklers – do not operate where the platform or operator is near electrical power lines or lights
- Before you move a picker or platform, warn co-workers and check for other traffic – pay particular attention if you are entering or crossing an aisle
- Make sure you are tied off with a safety harness and lanyards provided by the manufacturer
- Do not overload the platform
- Do not overreach or lean out of the platform
- Do not allow item to hang over the outside of the platform
- Use a platform that meets or exceeds the minimum legal requirements

Knowledge Factors Prior to Lifting a Load

Before lifting a load, it's important to remember 2 key things:

1. Always ensure that the load to be lifted is within the rated capacity for the lift
2. Always ensure that the load to be lifted is stable, secure and lifted in accordance with the manufacturer guidelines

You can determine this by assessing the load before attempting the lift. Here are some other keys points to remember:

- The rated capacity of the forklift
- Size of the load
- Weight of the load
- How the load is packed
- Weight distribution of the load
- Is the load stable? Will it shift?
- Is the load classified as a dangerous good?
- PPE required to handle the load
- Where to load is to be located to
- Will the load restrict vision?
- To what height does the load need to be lifted?
- Is the path of travel level, clear of obstacles, etc.?

Removing a Pallet from a Rack

To remove a pallet from a rack position, the following steps should be taken:

- Position truck squarely in front of the rack with fork tips approximately 12 inches from the pallet
- Keep forks level and extend the reach mechanism until the front face of the forks reaches the pallet
- Lift the forks just enough to clear the pallet off the rack. Ensure that the far end of the load is fully supported. This can be accomplished by a slight rearward tilt
- Do not lift to high or the load can contact the rack above
- When the load is completely clear of the rack, retract the reach mechanism, back out, stop after clearing the rack area and lower the load to travel height.

Operating Around Racking

While backing up or turning, use extreme caution so that racking or objects stored in racks do not enter into the operator compartment. You could be quickly pinned or crushed, which could lead to injury or death.

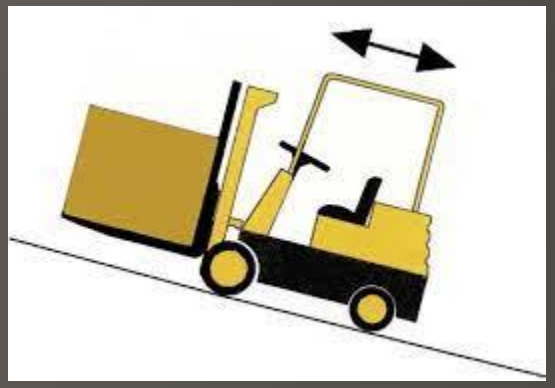
Safe Operation on Inclines or Declines

According to authoritative sources such as ANSI, narrow aisle lift trucks are not normally intended for operation on grade. It is recommended that the manufacturer's operating procedures be consulted for your particular application. If you must operate the narrow aisle truck on a ramp or incline, doing so requires extra caution and care.

- Never turn on a ramp, as this can cause a tip-over. Never drive along the edge of ramps, raised docks or platforms
- When travelling on a ramp, the load should be upgrade when going up or down
- If the truck is not carrying a load, the forks should be downgrade when going up or down a ramp
- Never attempt to operate a narrow aisle truck on a ramp that exceeds the manufacturer's recommended maximum grade

The Fall Zone

In accordance with the Occupation Health and Safety Act, no person shall be located under any part of a raised load. This regulation has a unique application with regard to forklifts, as not only are they mobile, but the loads are also raised and lowered throughout their operations and, therefore, the fall zone constantly changes.



The fall zone may be defined as any area in or around the equipment where a worker may be exposed to the hazard of falling material. Therefore, as a load is lifted higher, the fall zone expands to encompass the area in a radius equal to that of the highest part of the raised load.

In other words, if the top of the load is at a height of fifteen (15) feet, the fall zone expands to a diameter of fifteen (15) feet around the forklift. As a professional operator, you must pay close attention to the variable fall zone and you must ensure that no personnel are located within this area.

Order Picker Safety

Every time you get on the truck:

- Wear an approved safety harness or tether every you get on the truck
- Never use trucks to load or unload pallet loads. That is not what order pickers were designed to do
- Keep your hands inside the compartment while operating the truck
- In case the electrical system fails, an elevated operator can be lowered manually by releasing the “safety down relief valve” located in the front compartment

Proper Charging Procedures

During the charging process, hydrogen gas is produced. Hydrogen is highly flammable, and for this reason, batteries must be charged only in well-ventilated areas. Make sure that there is no smoking or open flames in the area.

To begin, follow these steps:

- Turn the key switch off
- Unplug the battery connector from the truck and attach the charger connector to the battery, never to the truck
- Check the cables for wear and the connectors for damage.
- Turn on the charger, following the manufacturer's instructions
- When the charging process is complete, always turn the charger off before unplugging the connectors

Always wear the proper protective equipment when you are working with batteries. Gloves, safety goggles and a rubber apron are the minimum requirements.