Scope

This guidance paper seeks to address the concerns with fitting seatbelts to sit down reach trucks. This also applies to reach trucks that include configurable operator positioning, i.e. stand-up or sit-down.

This guidance paper does not negate the requirement to fit and use seat belts on centre ride counterbalance trucks

Summary

The Australian Forklift and Industrial Lift Truck Association (AFITA) does NOT endorse the use of seatbelts on sit down reach trucks.

This position is also endorsed by other international lift truck bodies.

It is recommended in AS2359.2-2013 *Powered Industrial Trucks Part 2: Operation* that operators alight from the truck during an off dock or tip over event, to reduce the risk of injury.

The use of seatbelts on sit down reach trucks can increase the risk of serious injury to operator in the event of a tip over or off-dock incident, by increasing the time it takes to alight from the truck.

Australian Standards

Australian Standard AS2359.2-2013 *Powered Industrial Trucks Part 2: Operation* requires the use of seatbelt for centre controlled sit down counterbalance trucks. Clause 3.3 (a) states;

"*Operator's restraints, e.g. seat belts, shall be used while operating a sit-down counterbalanced truck. If a seatbelt is fitted to any other type of truck the seatbelt shall be used*."

If a tip over should occur Clause 3.3 (r) states;

"*In the event of a tip over of a counter balanced truck with a seated operator, stay within the confines of the operator compartment. Refer to the manufacturer's instructions fitted to the truck, e.g. decal.*

NOTE: *Sit down or stand up rear entry trucks or stand up rear entry counterbalanced trucks are designed with open operator compartments to permit easy entry and exit. Although there is no sure way in all circumstances to avoid injury, where possible, in the event of an imminent tip over or off the dock accident, the operator should step off and away from the truck. These actions are intended to reduce the risk of serious injury or death.*"

AS2359.1-2019 Clause 7.4.1 states

"*Where seatbelts are fitted they shall be interlocked to prevent the truck from travel motion (forward or reverse) until the seatbelt is buckled, except in the case of tow tractors. In addition, the seatbelt interlock shall include the sequencing/logic of the seatbelt switch with a seat pressure switch. The weight of the operator on the seat shall be detected prior to the seatbelt switch being engaged. The system shall not be readily overridden. Means shall be provided to discourage unbuckling of the seat belt while the truck is in motion. For example, activation of an audible alarm or switching to neutral.*"

AS2359.6-2013 *Powered industrial trucks Part 6: Self-propelled Industrial Trucks, other than driverless trucks, variable-reach trucks and burden carrier trucks* clause 6.2.2 (ee) states

"*Instructions to the operator of a stand-on end-control truck to step off and away from the truck in the event of a tip-over or off-dock accident.*"

The Australian Forklift and Industrial Lift Truck Association (AFITA) does NOT endorse the use of seatbelts on sit down reach trucks, due to the high risk of operator injury associated with an increase in egress time to alight from the truck during a tip over or off the dock incident. In some cases the seatbelt may prevent the operator from alighting from the reach truck due to the fact that seatbelt mechanism has locked.

In addition the UK HSE published in 2000 "*HSE Information Sheet MISC241*" which states the following.

"*LTs with a side-seated operator and cab access from the rear (eg masted reach trucks) or which have a stand-on operator, are not required to have operator restraint. The operator is unlikely to be trapped between the LT and the ground in the event of an overturn*." Note LT refers to lift truck.

Reach Truck Operation

Sit Down and Stand-up Reach trucks

Sit Down or Stand Up Reach trucks and Stand Up rear entry counterbalanced trucks have greater manoeuvrability than centre controlled rider trucks to operate in warehouses within narrow aisles and space restrictions.

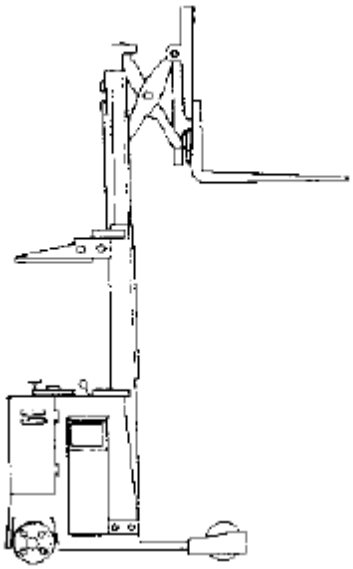

Figure 1 - Stand Up Reach Truck

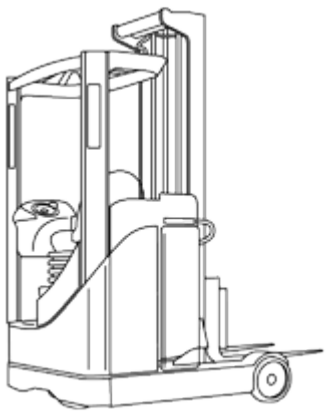

Figure 2 - Sit Down Reach Truck

Tip Over Events

Reach trucks, either stand up or sit down, are recognised as being liable to tip over events when driven with the mast raised. Usually the tip over is initiated by driving into overhead structures such as doors with the mast raised.

Australian Standard AS2359.1-2015 Powered Industrial Trucks Part 1: General requirements, requires battery electric ride-on reach trucks and counterbalance trucks to be speed reduced to 3kph when the mast is raised above staging. This is designed to provide an incentive to the operator to lower the mast and fork carriage when travelling to reduce the risk of hitting an overhead structure and causing the truck to tip over. Typically these types of trucks can travel at speeds in excess of 10kph.

Operator Response to Tip Over

In the event of an imminent tip over or off dock accident operators of sit down reach trucks are cautioned to step off and away from the truck, refer to Australian standard AS2359.2.

Seat Belt on Sit Down Reach Trucks

Where a seat belt is fitted to a sit down reach truck, the egress time of the operator to alight from the truck during an imminent tip over or off dock accident is significantly increased, increasing the risk of serious injury or death. It should be noted that if the operator is delayed in exiting the operator compartment the limbs or other body parts could be trapped resulting in serious crush injuries from the truck. In addition there is a high likelihood that the head could impact the surface again causing serious injury or life threatening injuries.

The use of gates, doors or barriers that impede egress and entry to the operator compartment are not recommended. These modifications can also increase the egress time, increasing the risk of serious injury or death, in the event of an imminent tip over or off dock accident.

Lift Truck Operation

Centre Control Sit Down Counterbalance Trucks

Centre controlled sit down counterbalance fork lift trucks require the operator to use a seatbelt. The seatbelt function is to help the operator remain within the space defined by the overhead guard (OHG) and chassis, in the event of a tip over.

In the event of a lateral (side) tip over the operator must stay with the truck. The natural inclination is to jump in the direction of the tipping truck as initially the truck slowly starts to tip but momentum and shifting centre of gravity sees the speed of the tipping truck quickly accelerate and by the time the operator realises this it is often too late. The operator can then be pinned or trapped by the OHG or mast resulting in injury or possible death.

The industrial lift truck industry recommends that the operator must remain in the operator's position, brace themselves and lean away from the direction of the tip over, to minimise the likelihood of injury. Seatbelts and lateral (hip/shoulder) supports should be used to aid the operator to remain within the operator area during a tip over.

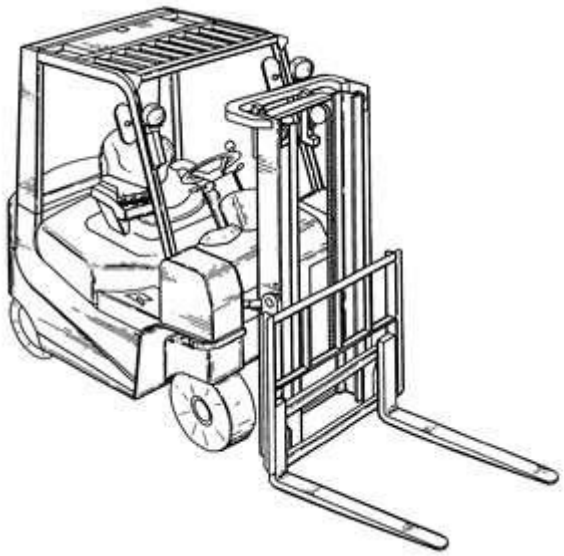

Figure 3 - Sit Down CB Truck