COMMISSIONER OF LABOR FOR	BEFORE THE NORTH CAROLINA OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION
THE STATE OF NORTH CAROLINA, COMPLAINANT,	DOCKET NO. OSHANC 2005-4502
v. CENTRAL TRANSPORT, INC.,	OSHA INSPECTION NO. 308655307 CSHO ID NO. B5670 ORDER
RESPONDENT.	
THIS MATTER was heard by the undersigned in Charlotte, North Carolina on four hearing days:	: November 16, 2005, February 2 and 3 and March 1, 2006.
	n of the hearing the parties were allowed to submit post-hearing briefs, which were due by April 15, 2006. On May 25, 2006 the complainant filed a motion to amend Citation 1, Item 1, an alleged
motion to amend is allowed.	eges specific hazards in the use of powered industrial trucks (forklifts) which necessitate the use of available seat belts during the operation of such trucks. For reasons stated later in this Order, this operation of such trucks. For reasons stated later in this Order, this to provide hand towels or other drying devices in four employee restrooms. The respondent did not contest this citation item.
After hearing and receiving the evidence, and considering the arguments of counsel as contained	
FINDINGS OF FACT 1. The complainant is charged by law with the responsibility for compliance with and enforcement	nt of the provisions of the Occupational Safety and Health Act of North Carolina (the "Act").
	ies transportation service throughout North America, including North Carolina. The respondent has approximately 165 customer service centers (terminals). lucted a complaint inspection of respondent's truck terminal located at 601 Johnston Road in Charlotte, North Carolina.
4. The respondent's Charlotte terminal is approximately 130,000 square feet in size and consists, charging station; an office area; and a separate shop building located across the parking lot from the square feet in size and consists, and a separate shop building located across the parking lot from the square feet in size and consists, and a separate shop building located across the parking lot from the square feet in size and consists, and a separate shop building located across the parking lot from the square feet in size and consists, and a separate shop building located across the parking lot from the square feet in size and consists, and a separate shop building located across the parking lot from the square feet in size and consists.	in pertinent part, of a large four (4) foot high loading dock with 182 open truck bays lining each side of the building; an interior warehouse or staging area for freight; a dock office; a battery the terminal.
6. The Charlotte terminal is covered by a roof which overhangs the open-sided edges of the loading	floor near the open-sided bays. Sections of the monorail were bent up, while other sections were missing. Also, pieces of the concrete had been removed. ing dock by approximately 10 feet. Despite this overhang, the dock floors occasionally get wet during rain storms. The floors will sweat; an amount of condensation or moisture would form on the dock good property and t
7. The Charlotte terminal has 45 forklifts. The terminal operates three 10-hour shifts per day, with	non place occurrence at respondent's facilities. Additionally, liquid spills occasionally occur on the docks. The four (4) employees working the day shift; up to fifteen (15) employees the afternoon shift; and thirty (30) employees the night shift. All of these employees are forklift operators.
Freight which is to be shipped long distance is reloaded onto other trucks and sent to the next close	d make deliveries to local customers. They then pick up freight and return to the terminal. The trucks are usually full of freight when they return. Some of this freight is to be distributed locally. It is sest terminal where it is consolidated with other freight or reloaded onto another trailer. This process continues until the freight is delivered to the final customer. It is trailer up to the appropriate dock door. The driver then hands the paperwork to the dock office. The dock supervisor gets a load manifest and hands it to a dockworker and states where the trailer
located. The dockworker then drives a forklift to the door where the trailer is located and scans a drives the forklift onto the trailer to begin unloading its freight. If available, the dockworker may	bar code to see where within the terminal the shipment is to be delivered. The dockworker is then supposed to check to see if the trailer's wheels are chocked. He then lowers the dock plate and load the freight directly onto another trailer or trailers located at one or more of the other dock doors. If part of the freight is to be loaded onto a trailer which is not currently at the terminal, the r finishes one assignment, he or she will go to the dock office to get another manifest and begin the process over again.
turns the forklift in one direction or the other and drives in a forward or backward motion in order	tor drives the forklift forward onto the back of the trailer places its forks under a pallet containing freight picks the pallet up by raising the forks and backs out of the trailer. The operator then usual er to proceed down the dock (parallel with the dock's edge) to another trailer along the dock for loading. A forklift may have to travel some distance when traveling from one trailer to another alor a trailer located on the dock on the other side of the terminal building, or to an interior staging area.
	minal at the same time. The dock is crowded when all thirty forklifts are moving. When going to and from the trailers, many of these forklifts would drive within the twenty (20) foot area between
time, other forklifts travel perpendicular to the dock's edge when coming from the dock on the other	physical barriers to keep them from operating in each other's "lane" to keep them from getting close to the dock's edge or to keep them from driving off the docks edge. Additionally, at the same ther side of the terminal building or from an internal location such as a freight staging area. There are also no lines or other markings delineating crossing aisle ways or acting as stop signs. As a if forklifts were about to collide and an operator had to make an evasive action or movement to avoid a collision.
13. Respondent's forklifts also operate off-dock. Several of respondent's larger facilities have ram	nps which allow its forklifts to have access from the terminal to other buildings, such as the shop. At Charlotte, respondent has a concrete ramp at Dock 141 leading from the terminal to the parking of enclosed from the elements. The ramp does not have guardrails but has a 3" to 4" high curb with a rounded top.
	ng lot to a separate shop building located approximately one hundred (100) to one hundred and fifty (150) feet away. The operators would use a forklift to take materials or freight to the shop, such a would also take freight or materials, such as used brake shoes, from the shop to the terminal for shipment. In traveling to the shop, the operators would descend the ramp with a load on the forklift might ascend the ramp with a load.
15. The respondent has no rule, nor are there any limiting devices on the forklifts, to keep the ope	erators from raising their loads to the maximum height when traveling on the ramp or across the parking lot.
it reached a bay where dock board repair work was to be performed. At the time of the inspection	asionally use a forklift off dock when repairing dock boards. The forklift would be driven down the ramp located at Dock 141 onto the parking lot. It would then be driven along the parking lot ur at issue, a forklift was being used by one of respondent's mechanics to repair a dock board at Dock 182. high-lift trucks with a sit down, non-elevating operator. Each forklift is equipped with a seat belt by the manufacturer. The respondent's forklifts have a maximum speed of 7 to 8 miles per hour.
operator usually travels at maximum speed when not carrying any freight or material. An operato loaded/unloaded, or are making turns.	or may travel at a slower speed when carrying a load. The respondent has no written safety rules or regulations which tell an operator that they cannot exceed certain speeds when traveling
19. When a person applies for a dockworker position at respondent's Charlotte terminal, such app	overnors or any other mechanical apparatus which will reduce the forklift's speed, especially when making a turn. plicant fills out an application and is given a drug screen test. The applicant is then given a copy of respondent's forklift training manual to read on his or her own, and then is given a written test. understand what they are reading. If the applicant passes the written test, he or she is given a driving test which is supervised by another dockworker who has not been trained as a trainer. If that
dockworker is satisfied that the applicant has passed the driving test, he observes the applicant for General Safety Training Manual. Additionally, neither new nor experienced operators are provide	or a short period of time to determine if the applicant properly picks up and moves freight. Applicants are given no other safety training. Further, they are not instructed or tested on respondent's ed, or have available to them for review a copy of the operator's manual for Central's forklifts.
North Carolina. Barloworld's corporate headquarters are located in Charlotte, North Carolina.	Barloworld is a world wide distributor of lift trucks, primarily Hyster forklift trucks, and is the largest Hyster dealer in the United States. It does business in eleven states in the southeast, includin eration of lift trucks. It also provides forklift operation and safety training to its customer's lift truck operators, including training forklift operator trainers. This includes training on the stability of
forklift trucks, the hazards associated with operating forklifts, including safety issues in terms of 22. Mr. Burkholder is the senior trainer in Barloworld's corporate training department. Mr. Burkh	tip-over and driving off loading docks; the safety devices available to protect forklift operators from injury; and the required safety practices for the operation of a forklift. nolder is the trainer who primarily conducts "train the trainer training" This includes training other forklift operator trainers on the operation and safety of sit-down, rider, counterbalanced, high-liming training tra
23. Mr. Burkholder has been a forklift operation and safety trainer with Barloworld for twenty-eig	ift training, including operation and safety. He also participated in the public hearings which culminated in the 1999 amendment of °1910.178(l), the OSHA forklift training standard. ight years. Prior to that he was a road service technician and branch trainer for Barloworld in Charleston, South Carolina. Prior to his employment with Barloworld, Mr. Burkholder worked for a large Burkholder has become familiar with, and has provided training regarding, the operation and business of loading and unloading materials, such as palleted freight from tractor-trailer trucks by us
of forklifts. In addition to his practical and training experience, as part of his job responsibilities I Gary Burkholder was admitted as an expert witness in the field of forklift operation, training and	Mr. Burkholder reviews applicable forklift standards, federal OSHA standards interpretations, forklift accident reports, lift truck operator manuals, and forklift accident studies. Following a voir of safety. Previously, he had testified as an expert in a civil case in the field of forklift stability and safety.
to jump or has fallen out of the forklift.	en the overhead guard and the ground is the primary cause of forklift operation fatalities. Another leading cause of death occurs when a forklift goes off-dock and falls on an operator who attempted the empty), including the hazard of possible tip-over and off-dock incident. He illustrated his testimony with a model demonstration showing how tip-overs may occur. He also used a power point
demonstration, including slides of forklift turnovers, to demonstrate the possibility of a forklift tip to sections of Barloworld's Instructor's Guide regarding forklift stability and possible tip-over. Many to sections of Barloworld's Instructor's Guide regarding forklift stability and possible tip-over.	ip-over even on a smooth, level, concrete surface such as is found on a loading dock. He also testified to the hazards of operating a forklift on a ramp or inclined surface. Mr. Burkholder also refer Ir. Burkholder uses this guide when providing forklift operation and safety training.
the overhead guard and the ground if the operator does not remain within the forklift. Mr. Burkho leaving the trailer, resulting in the lift truck dropping in between the tractor trailer and loading do	imately twenty-five percent (25%) of all forklift related fatalities and serious injuries resulted from lateral tip-overs. When a tip-over occurs, it is likely that the operator's head will be caught betwood that it is a recognized hazard that forklifts will go off-dock. It is a recognized hazard that tractor trailers may move away from the loading dock as a forklift is either entering or ock. Additionally, it is a recognized hazard that a forklift may go off-dock due to trailer creep caused by, for example, a trailer moving away from the dock as a forklift enters due to faulty brakes ft may simply drive off-dock for any number of reasons, including slippery floors and operator error.
27. Based upon his understanding of respondent's operations at its Charlotte facility obtained from	m his conversations with the compliance officer; his review of the photographs of respondent's Charlotte facility and his general understanding of the industry, Mr. Burkholder testified that he is to the operation of forklifts. In his expert opinion, there is a possibility that a forklift operating in the areas shown in the complainant's photographs could tip over.
28. Conditions at respondent's Charlotte terminal which could exacerbate the possibility of tip-ov occur. Based upon Mr. Burkholder's experience, a tip-over can occur on a smooth, flat floor such	ver include cracks in the floors; the monorail on the floor, which is bent up in one area; the ramp, the parking lot, and wet floors. These conditions, however, do not need to be present for a tip-ove as found at a trucking terminal, warehouse, or parking lot.
30. Mr. Burkholder testified that in 1993 the American Society of Mechanical Engineers (ASME)	e, either as a result of the operator driving it off the dock without a trailer present, or as a result of a trailer pulling or creeping away from the dock as a forklift was entering or leaving the trailer. E) amended B56.1, its safety standard for forklifts, to include requirements for the protection of forklift operators in case of tip-over or off-dock incident. Both the American Trucking Association
Industrial Truck Association served on the rules committee which adopted this requirement. This 5 OPERATING SAFETY RULES AND PRACTICES	requirement provides, in pertinent part, as follows:
5.1 Operator Responsibility5.1.4 Before operating any truck, truck operators shall have read and be familiar with the operators.	operator's manual for the particular truck being operated and they shall also abide by the safety rules and practices in paras. 5.2 through 5.5
ASME B56.1 also provides: 5.3.19 An active operator protection device or system, when provided, shall be used. Operator protection device or system.	rator protection in the event of tipover is intended to reduce the risk of entrapment of the head and torso between the truck and the ground However, steps indicated in paras. 5.3.18(d) and
(e) should still be adhered to. Paragraph 5.3.18 of ASME B56.1-1993 provides:	
(d) The operator should stay with the truck if lateral or longitudinal tipover occurs. The operator(e) The operator should stay with the truck if it falls off a loading dock or ramp. The operator	
Paragraph 7.39 of ASME B56.1-1993, entitled Operator Restraint Systems, provides: (a) Counterbalanced and lift trucks an shall have a restraint device, system, or enclosure the	nat is intended to assist the operator in reducing the risk of entrapment of the operator's head and/or torso between the truck and ground in the event of a tipover
(b) Warnings and instructions on the purpose and use of the operator protection provided shapes and the operator protection provided shapes are shapes as th	shall be displayed in clear view on the truck and included in the operator's manual.
	Association recognize the hazard of possible tip-over or off-dock incident, and recommend that forklift operators use the provided operator restraint device. This further shows that both of these e or she does not remain with the forklift, and that the use of an operator restraint device might prevent death or serious bodily injury, or would significantly reduce the seriousness on an injury, in
33. Further, the operator restraint device must have an "active" component, a seat belt. The operator	that a counterbalanced, center control, high lift truck with overhead protection and a sit-down, nonelevating operator is being operated. The respondent's forklifts are of this type. attor protective device installed on respondent's forklifts by the manufacturer, Toyota, consists of a winged seat, a seat belt, and warning labels advising the operator to "buckle up" and, in case of the control
over, to hold onto the steering wheel, brace the feet, and lean away from the direction of tip over. 34. Mr. Burkholder read, in pertinent part, from the Preamble to the 1999 amendment to §1910.17	According to Mr. Burkholder, the provided seat belt is an integral part of the operator restraint device on respondent's forklifts and must be used. 78(1), the OSHA training standard, which concluded, as follows:
III. Powered Industrial Truck Hazard	
1 v 1	npt to jump clear of the vehicle as it tips over. Because the operator's natural tendency is to jump downward, he or she lands on the floor or ground and is then crushed by the vehicle's overhead sposition in a tip-over accident and lean away from the direction of the fall to minimize the potential for injury.
Mr. Burkholder further read from the Preamble:	
sometimes partially obscures the operator's vision.	g the vehicle to skid and tip-over or fall off the loading dock or other elevated walking or working surfaces. This condition can be made more dangerous because the load being carried
fatalities resulted from forklift tip-overs. This was the highest percentage of fatalities in the study contained in the preamble showed that twelve point three percent (12.3%) of the lift truck operator	of forklift accidents and injuries, including injuries from tip-overs and off dock incidents. According to one analysis of 170 powered industrial truck fatalities, twenty-four percent (24%) of the y. Eight percent (8%) were the result of off-dock incidents. Therefore, thirty-two percent (32%) of the forklift related fatalities studied resulted from tip-overs and off-dock accidents. Another studies involving lost workday claims which occurred in 1991-92 were in the trucking industry. These statistics clearly show that a leading cause of forklift operator fatalities and other serious
injuries in the trucking industry is forklift overturns and off-dock incidents. 36. Mr. Burkholder testified that §1910.178(l) (1999) requires that operators be instructed on the	following:
(3) Training Program Content. Powered industrial truck operators shall receive initial traini(i) Truck-related topics:	ing in the following topics
(A) Operating instructions, warnings, and precautions for the type of truck the operator wil	ll be authorized to operate;
(I) Vehicle stability;	
(M) Any other operating instructions, warnings, or precautions listed in the operator's manual	
to the use of the described operator protective device, including the seat belts.	perators on the operator instructions and warnings contained in its Toyota forklift operator's manual, including on the hazards of possible tip-over, as well as on the instructions and warnings related of the operator to use his or her upper body strength to maintain the rest of his or her torso and head inside the confines of the overhead guard. If not buckled up, the
operator will probably not be able to keep himself or herself from coming off the seat and being s seat, or a seat with a hip restraint. Seat belts also assist the operator in avoiding serious injury in t	struck by the overhead guard or other part of the truck. This could result in death or serious bodily injury. A seat belt will help keep an operator in his or her seat whether the forklift has a winged the case of a longitudinal tip-over.
number of fatalities which have occurred as the result of operators who failed to accomplish such	y Mr. Burkholder showed that it is very difficult to impossible for an operator to get far enough away from the truck to avoid being struck by the overhead guard. This is confirmed by the significant an ill-fated attempt. If an operator were to feel that a forklift were beginning to tip-over or go off-dock, the natural tendency would be to attempt to exit on the low side - the side to which the model that the operator would have to go up hill and, as a result of the cabin floor tilting away from the operator, it would be difficult for the operator to sufficiently plant his or her feet in order to be a sufficiently plant his or her feet in order to be a sufficiently plant his or her feet in order to be a sufficiently plant his or her feet in order to be a sufficiently plant his or her feet in order to be a sufficient to be a suffing to be a sufficient to be a sufficient to be a sufficient to be
	ock incident. Jumping clear presents other hazards, such as being struck by another forklift, falling off the dock, being struck by the freight, or, in case the forklift does not turn over, being struck
41. It constitutes a greater hazard for a forklift operator to jump from an overturning forklift, or o employees to jump off rather than to stay with a forklift in case of tip-over or an off-dock inciden	one going off-dock, than to remain with the truck. This is especially true when the operator is wearing a seat belt. It would constitute a greater hazard at respondent's Charlotte facility for its nt.
system to use. According to this study, lateral and off-dock accidents produce the most serious in controlling the force of the lower-body torso in keeping the operator in the seat. If seating can be	operator restraint system would significantly lower injuries in forklift overturn accidents, including off dock incidents. The purpose of the study was to decide upon the types of operator restraint ajury. It found that operators who receive major injuries usually are attempting to jump clear prior to the truck's impact. The study further found that a properly installed seat belt is effective in a maintained, most operators have adequate arm strength to control the initial inertia forces of the upper torso at the truck impact, so that the so-called "fly swatter" effect is manageable. The Hyster
study concluded that the two most effective devices in preventing serious injuries in case of tip-or. The Hyster study further concluded:	over or an off-dock incident are a seat belt and hip restraint. "the seat belt is the primary means and most effective of the two."
The operator restraint system consists of seat belt with the belt retractor, hip restraint brack	tets with latches, hardware, and instruction warning decals
The results showed that the operator restraint system is effective. At impact, the velocity da	ata indicated the low probability of serious injury [a]nd there was no entrapment under the truck.
The Hyster study additionally determined: Tests were done to evaluate the operator restraint system in tip overs at loading docks. Off	E-dock tip-overs are severe The operator's area remained intact throughout the dock related tests. If the operator remains with the truck by wearing the seat belt, the potential for avoiding
serious injury appears to be good relative to other choices	on from an overturning forklift exceeds the time that it takes for the forklift to go from the balance point to impact. In other words, an operator cannot get out of the way quickly enough. This is true
for forklifts that are turning over and going off-dock. The study finally concluded:	
	Hyster forklifts which were involved in side tip-overs, nose overs, and over the dock incidents. Eighty-one (81) of these incidents involved forklifts which were not equipped with an operator
operators of these forklifts were killed or seriously injured as they jumped or were thrown from the	Of the eighty-one (81) incidents without an operator protective device, twenty-nine (29) were off-dock and fifty-two (52) were lateral tip-overs. Approximately fifty-three percent (53%) of the the trucks. Of the seventy-seven (77) instances involving forklifts equipped with an operator restraint device, twenty-seven (27) involved an off-dock incident and fifty (50) a lateral tip-over. Only er five year follow-up study and noted that the results, after the ten year period, were still very favorable for the use of an operator restraint system. The study further concluded that no serious injurity is a standard process.
43. The respondent's Toyota forklifts were outfitted by the manufacturer with an operator protection and illustrations that "restraints must be used to reduce the possibility of injury from overturns or	tive device or system including a seat with wings, a seat belt, and warning labels. The Toyota operator's manual for respondent's forklifts repeatedly warns and instructs the operator with written to other accidents" The Toyota operations manual shows that the provided seat belt is an integral part of the operator protective device. The manual contains numerous warnings and instructions to
operators to fasten their seat belt. The manual additionally repeatedly discusses the hazards of tip	case of truck turnover. Your chances of avoiding serious injury or death in a tip-over are better if you stay with the truck in the operator's compartment.
	roperly. To protect the operator from the risk of serious injury or death in the event of a tip-over, it is best to be held securely to the seat. The seat and seat belt will help to keep you safe within
	instructions, warnings and precautions. These same type warnings and instructions are contained in other forklift manufacturer's operating manuals, such as Hyster's.
	le belts are provided. Retractable belts are consistently available to be pulled out to the right length and retracted. It takes at most two (2) seconds to buckle up, and about a half (1/2) second to affect their production. For instance, the study shows that operators who were required to get on and off a forklift hundreds of times a day would spend only about five minutes of the day buckling the study of the study shows that operators who were required to get on and off a forklift hundreds of times a day would spend only about five minutes of the day buckling the study of the study shows that operators who were required to get on and off a forklift hundreds of times a day would spend only about five minutes of the day buckling the study of the stu
46. Other tests have shown that the use of a seat belt would not perceptively interfere with an ope 47. The use of a seat belt does not interfere with the operation of a forklift, including operating it	erator's ability to quickly exit a forklift in an emergency situation, such as where a load of freight or materials falls into the side of the cab.

48. There exist several federal OSHA letters of standards interpretation in its training manual relating to the required use of seat belts are installed

specifically mentioned, they must be worn if supplied as a part of the operator protective device or system. He further advised that "OSHA has not made any exclusions regarding the use of operator restraint systems" Additionally, in a letter dated May 28, 1997, to the president of the ATA, the

OSHA's enforcement policy relative to the use of seat belts on powered industrial trucks is that employers are obligated to require operators of powered industrial trucks which are equipped with operator restraints, devices, or seat belts to use the devices. OSHA would enforce the

50. The manual also shows an illustration of a decal on an overhead guard advising employees to hold tight, brace their feet, and lean away in case of tip-over. These are the same type warning labels Toyota has placed on respondent's forklifts as part of its operator protective device, except that

51. Mr. Burkholder testified that §1910.178(k)(1) provides that the rear wheels of trailers must be chocked and brakes set to prevent rolling while they are being boarded by forklifts. A chock is a device placed in front of the tires to prevent the trailer from rolling. Typically, they are rubber or aluminum, and are designed to fit the contour of the wheel. A 4" x 4" board would not constitute a wheel chock. Chocks are required to be in front of the trailer. Mr. Burkholder's review of the photographs taken by the compliance officer show that the wheels of some of respondent's trailers were not chocked. They further show that a restraint system was not being used to secure the trailer to be chocked. The respondent's failure to chock the wheels presented a hazard to respondent's employees - the

52. If two forklifts were to collide, it would be a greater hazard for the operators to jump off than to remain with the forklifts. AMSE B56.1-1993 requires an operator to wear a seat belt if provided. Further, the standard makes no exception to this rule. The standard recognizes that it is safer to

53. There are numerous articles and studies concerning forklifts operation. This includes the hazards associated with operating forklifts, including the hazards of tip-over and off-dock/off-truck incidents. There is a consensus among these articles and studies that forklifts will tip over or fall off

54. The respondent has approximately thirty-two Toyota forklifts in use in its Charlotte terminal. Each of the forklifts has an operator safety

"DANGER". The next block shows an illustration of tipping forklift and says, "Don't jump" advising the operator not to jump out of the forklift in case of tip-over. The final three blocks say "hold on tight" (to the steering wheel), "brace feet" and showing a tipping forklift, "lean away" (from the

58. An operator could simply drive off the dock and receive an injury or injury could occur due to trailer drift. This can be caused by the force and weight of a forklift entering a trailer, causing the trailer to move forward and away from the dock, creating a space into which a forklift could fall. Another possible incident could occur if a driver pulls the trailer away from the dock while a forklift is either entering the trailer, or is inside backing out. Such an incident occurred on May 16, 2005 at respondent's facility in Duncan, South Carolina, resulting in the death of the forklift operator

59. There is a natural inclination for an operator to attempt to jump from a forklift which is tipping over or going off-dock. Additionally, an operator not wearing a seat belt could be thrown from the forklift as it tips over. In either case, the likely scenario would be for the operator to be caught between the overhead guard and ground, resulting in death or serious bodily injury. Additionally, without a seat belt, the operator could be thrown forward into the steering wheel or mast. A seat belt would help keep and stabilize the operator in the seat and prevent or substantially reduce the possibility of death or a serious injury. The use of a seat belt he or she could fall out or jump to the

60. It is possible for an operator to receive an injury in a tip-over or off-dock incident even if wearing a seat belt. The use of a seat belt greatly reduces the severity of injury or likely death which would likely occur without its use. It would be a greater hazard for the operator to be unbuckled

61. Effective November 30, 2000, federal OSHA issued Directive CPL 2-1.28A regarding the powered industrial truck operator training standard, °1910.178(1). This instruction provides compliance and assistance for ensuring a uniform enforcement of the standard. Within this Directive, OSHA

Seatbelts on forklift trucks are a component part of the operator restraint system that is designed to reduce the incidents and severity of injuries to the operator in the event of a tip-over accident. Forklift trucks are particularly susceptible to tip-overs. Failure to wear the seat belt that

is provided in the forklift increases the risk of injury to the operator in the event of such an accident. Section 1910.178 does not currently contain requirements for the use of operator restraint systems. However, Section 5(a) (1) of the OSHA Act requires employers to protect

ASME B56.1-2000 safety standard for low-lift trucks. In addition, seatbelts have been supplied by many manufacturers of the counterbalanced, center control and high-lift trucks that have a sit-down, non-elevating operator position. OSHA'S enforcement policy on the use of seatbelts on powered industrial trucks is that employers are obligated to require operators of powered industrial trucks that are equipped with operator restraint devices including seatbelts to use the devices. OSHA will enforce the use of such devices under Section 5(a)-1 of the

63. In June 2001, the National Institute for Occupational Safety and Health (NIOSH), an agency with the Center for Disease Control of the U.S. Department of Health and Human Services issued a NIOSH Alert regarding preventing injuries and deaths of workers who operate or go near

forklift but stay with the truck, hold on firmly, and lean in the opposite direction of the overhead guard is generally the part that

64. Pursuant to its Fatality Assessment and Control Evaluation program (FACE), NIOSH investigates certain accidents in order to formulate prevention strategies to avoid such accidents. Six (6) NIOSH FACE reports involving investigations into forklift tip-over fatality accidents were

68. The purpose of a wheel chock is to prevent trailer movement or trailer creep as they are being loaded and unloaded with forklifts. Failure to properly chock the wheels could result in trailer creep or movement, which could further result in a forklift that was either entering or exiting the

In your letter you discussed incidents where workers have experienced injuries when powered industrial truck falls to a different

Trailer creep and trailer pull-away have long been recognized as a problem in dock operations. . . . If restraint systems are not used, trailers must be properly chocked to prevent movement as required in OSHA standards 29 CFR 1910.178(k)(1) and 29 CFR 1910.178(m)(7)

of respondent's trailers had spring brakes. During his inspection, however, CSO Elgin found and determined that respondent had no written spring brake program and that it was not complying with all of the steps required in Standard Notice 66 to be exempt from the requirements of

70. On March 28, 2003, North Carolina OSHA issued Standard Notice 66 relating to trailer wheel chocking. In this notice it authorized the use of a spring brake system in lieu of wheel chocking. Such permission, however, is contingent upon the employer's routine and unfailing implementation of a corporate policy of periodic maintenance, frequent inspection, and functional checking of the spring brakes prior to each trip to include when parking at the loading dock to ensure effectiveness and reliability. It further contains requirements which must be included in a written policy. Some

71. Randy Miller is the terminal manager of respondent's Charlotte facility. He has been manager of the Charlotte terminal for ten years. Prior to that he was assistant terminal manager for two (2) years in Dayton, Ohio. He has also previously worked for the respondent as a sales representative,

72. Mr. Miller testified that if a forklift makes a turn at a speed faster than two (2) miles per hour the load is going to fall off the skid. He then acknowledged that employees have turned too fast and freight has fallen. Despite this, he admitted that he enforces no speed limit at the Charlotte

73. Two forklifts have been driven off the dock since Mr. Miller became terminal manager in Charlotte. In one case the operator drove the forklift backwards off the dock, resulting in a chipped tooth and a contusion. In the other instance no one was hurt. The forklift did not tip over in either

74. Mr. Miller testified that he was unaware as to whether respondent has conducted any assessment of the risks posed by forklift operations. When asked on direct as to what risks he thinks are associated with operating a forklift, he stated: (1) striking a pedestrian and (2) someone pulling the

77. Tara Murphy is head of corporate safety for respondent. She has been in this position for seven (7) months. Previously, she had been in respondent's safety department since 1996. As part of her duties with the safety department, Ms. Murphy is responsible for the overall safety of 165

78. The respondent is a member of the Michigan Trucking Association, which is affiliated with the American Trucking Association (ATA). The ATA handles all areas of trucking, including LTL freight. The ATA is largely a lobbying group. The ATA also has experts in the regulatory realm and

79. The respondent operates in forty-two (42) states. OSHA has inspected facilities in approximately twenty (20) states. As a result, the respondent was cited by South Carolina OSHA for failure to require its employees to wear seat belts. This citation resulted from an incident in which an

80. Ms. Murphy testified that respondent has conducted an assessment of the risks to which its forklift operators are exposed. This includes assessing by regulatory research. In doing an assessment she would look at multiple government websites. Part of Ms. Murphy's job is to keep up with changing regulatory and industry standards. Another part of respondent's assessment involves looking at its own accident investigation and injury and illness records. Additionally, Ms. Murphy will call terminals and talk with the dock supervisor. She also talks with the dock workers. Ms.

81. According to Ms. Murphy, approximately ten (10) to twenty (20) forklifts go off dock each year at respondent has not experienced a forklift tipping over on the dock. The respondent does not prohibit its employees from wearing seatbelts. Due to its having a

82. Ms. Murphy does not believe that it would be difficult to enforce a seat belt policy, and knows of no reason why respondent could not enforce one. Further, the cost of implementing such a safety procedure or safety mechanism would not prevent respondent from implementing it.

higher rate of injuries when high-lows are ridden down, respondent recommends that the operator of a high-low forklift jump off if it goes off dock. According to Ms. Murphy, she considers it a greater hazard to remain with a falling forklift and recommends that a driver attempt to jump despite

83. The respondent has a policy at its Charlotte facility requiring the use of wheel chocks. When a trailer is backed up to the dock for purposes of unloading/loading, the switcher or driver is supposed to place wheel chocks under both sets of rear wheels. Instead of using standard wheel chocks,

84. Ms. Murphy testified on cross-examination that less than one percent (1%) of its forklift operators wear seatbelts. In most cases when a forklift went off dock at respondent's facilities, the operator was not wearing a seat belt. Further, while she earlier testified that respondent's incident

reports indicate a higher rate of injuries among operators who remained with the forklift going off dock as opposed to those who did not, she did not have done a study of what kind of injury has occurred to operators wearing a seat belt wersus operators not wearing a seat belt was thrown from

85. Ms. Murphy testified that she has reviewed studies relating to the incidents of forklifts overturning on ramps. Although she stated that they have not had any such incidents during her experience with respondent, the studies show that a forklift operating on a ramp, especially if a turn occurs,

86. Ms. Murphy became familiar with ASME B56.1 as part of her involvement in respondent's hazard assessment, including the 1993 amendment. Ms Murphy admitted that, as a result, she is aware that ASME B56.1-1993 requires that an active operator protective device shall be provided and used on respondent's forklifts. She further admitted that she was aware that the standard states that the device is intended to reduce the risk of entrapment in case of tip-over, and that there must be an active component of that device. Additionally, she admitted that the forklifts at respondent's Charlotte facility were equipped by the manufacturer with an operator protective device, including seat belts were an integral part of the device. Ms. Murphy was unaware of any study saying that an employee should plant his or her feet, grab the steering wheel, and lean

87. Ms. Murphy was familiar with the §1910.178(1) training standard as amended in 1999. However, although part of her job responsibilities is to become familiar with applicable OSHA standards, she was only partially familiar with the preamble to the standard. For instance, although she

used at respondent's Charlotte facility and that it discusses the risk of tip-over associated with operator to wear the seat belt when

recalled that the preamble concluded from the studies reviewed that the leading cause of forklift fatalities was due to tip-over, she could not recall that it also concluded that studies showed that off dock incidents was another leading cause of death. Further, even though she could recall that the

88. Ms. Murphy was not familiar with the study done by Hyster in which it determined that the use of seatbelts as part of an operator restraint device would save lives in case of a tip-over or off dock incident. She was, however, familiar with the Toyota Operator's Manual for the type of forklift

operating a forklift, she could not remember whether it does so instruct. Ms. Murphy was also familiar with the fact that respondent's own forklift operator's training manual specifically warns of the hazard of possible tip-over, and that it instructs the operator to hold on, lean forward, and stay

89. Ms. Murphy admitted that, although respondent's assessment of the hazards associated with operating forklift operators. She

90. Ms. Murphy admitted that a seat belt would prevent an operator from being propelled into the mast of a forklift in the case of a straight off-dock incident. She also admitted that there was no way the operator could predict which way it might fall, and that there is the possibility it could strike an operator who either fell or jumped from the forklift. Ms. Murphy further conceded that she has read studies which conclude that the most important factor

91. Ms. Murphy stated that she could not provide any example where an operator using a seatbelt was injured where he or she would not have been injured if not wearing the seat belt. She also stated that she did not have any study or report with her that shows the hazard analysis which she

93 The respondent does not provide any training to its forklift drivers regarding how they should jump from a forklift. It also does not attempt to

98. The respondent was not able to show any prejudice to it by complainant's motion to amend Citation 1, Item 1 and allege specific hazards in the use of forklifts in that these alleged hazards were generally known to respondent to be the arguable reasons for alleging a violation of the General

3. The respondent has violated the provisions of N.C. Gen. Stat. §95-129(1), the General Duty Clause, by failing to require its forklift drivers at its Charlotte terminal to use the seatbelts supplied on their Toyota forklifts during operation. Such violation is a serious violation of the Act.

On one side is the complainant, proceeding under the General Duty Clause to hold the respondent accountable for the failure of its forklift drivers to wear seatbelts. In her favor is the weight of technical evidence such as the ANSI standard and the recommendations of the forklift manufacturers.

The complainant offered considerable credible evidence that use of the seatbelt, in conjunction with the seatwings and overhead guard, would keep the driver within the guard compartment in the event of a forklift tipover or dropoff. This would prevent the driver from succumbing to the urge to

While there is evidence to support a decision either way, I believe the evidence presented by the complainant was more compelling. The original research into this issue supports the safety value of seatbelts in these circumstances. The respondent has had prior employee accidents where injury was caused due to tip over or drop off. The respondent did not counter this evidence with organized studies or research. Rather, their evidence was personal experience, statistical or anecdotal. Even the American Trucking Association supported the ANSI standards. To me it is common sensical that, in the event of tipover or drop off, staying within the guard compartment and holding on is much more likely to reduce injury than trying to jump out. Moreover, within the split second it takes to tip over or drop off, once the condition is recognized by the driver, he very likely has no time

As for the wheel chocks, the responsibility for enforcement of this standard in the hands of the person least likely to worry about it -- the tractor trailer driver. If he fails to chock the wheels, he doesn't get hurt. The forklift drivers are the workers at risk. Yet, respondent does not have a program for ensuring that wheel chocks are in place. Surely someone at the terminal is responsible for knowing when a new trailer is backed up to a dock. That person should be responsible for chocking the wheels or for making sure the driver has done so. The failure to do this is

94. Ms. Murphy is familiar with the warning labels provided by Toyota on its forklift trucks. One label warns operators to buckle-up. She is also aware that both the

purportedly conducted concerning forklift operations. She could not cite any publication from the trucking industry dealing with a hazard analysis of the use of forklifts at terminals such as respondent's terminal in Charlotte. She also admitted that, although she reads federal standards

92. Ms. Murphy testified that it is possible for respondent's truck to pull away from the dock while a forklift is inside the trailer. It is further possible that the forklift could back out of the trailer and fall to the ground. Ms. Murphy classified such an incident as an off-dock incident.

terminals in the United States and Canada. As part of her duties with the safety department since 1996, her responsibilities have included OSHA inspections and visiting respondent's facilities. However, Ms. Murphy has not visited respondent's Charlotte terminal.

respondent uses 4' x 4' lumber. The chocks are to remain in place until the trailer is ready to be pulled. After removing the chocks the trailer pulls off. The respondent has previously been cited for failure to place wheel chocks at the wheels of its trailers.

the forklift and was caught between the overhead guard and the ground. Finally, Ms. Murphy has not observed any videos, and has not attempted to otherwise determine whether employees can jump from a falling forklift in time to avoid death or serious physical harm.

trailer to drop between the trailer and dock to the ground below. If the operator is not wearing a seat belt, he or she could fall or attempt to jump out of the forklift and be crushed between its overhead guard or other hard structure and the ground, and be killed or seriously injured.

crushes the operator's head and torso; and, the risk of being crushed by the overhead guard or another rigid part of the forklift is greatly reduced if the operator remains inside the operator's compartment. The alert then advises again that operators should wear seat belts.

67. The respondent has a policy requiring that the wheel of its trailers be chocked. Pursuant to this policy, the driver is supposed to back the tractor trailer (highway truck) up to the dock, set the tractor's brakes, chock the rear wheels of the trailer, and pull away the tractor.

65. The respondent could have abated the hazard presented to forklift operators at its Charlotte terminal by complying with the Toyota operator's manual and simply requiring the operators to wear the supplied seat belts.

employee was killed when he tried to leave the forklift as it went off the back of a trailer which was being pulled away from the dock. Ms. Murphy could not recall any other instance in which respondent had been cited.

preamble further concluded that an operator is often crushed when he or she attempts to jump from an overturning forklift, she could not recall it recommending that the operator stay with the forklift.

in preventing serious injuries is to protect the operator from being struck by the overhead guard in case of tip-over or off-dock incident. She also admitted that, in case of a tip-over, it is best for the operator to remain in the forklift.

interpretations, she was not certain if she was aware of any stating that seat belts must be worn, or advising that federal OSHA will cite the General Duty Clause if it finds operators of forklifts not wearing seat belts.

4. The respondent has violated the provisions of 29 CFR 1910.178(k)(1) for failure to chock the wheels of trailers being loaded or unloaded at its Charlotte terminal. Such violation is a serious violation of the Act.

Moreover, the forklift drivers seem adamant against using seatbelts, both for perceived safety and for convenience. And, the Act does not, among its thousands of regulations, contain a specific requirement that forklift drivers use seatbelts.

I am troubled by the fact that the rule-makers have not seen fit to make this seatbelt requirement a specific standard, rather than leaving enforcement to the General Duty Clause. Given the research and history of accidents, it seems that this should have been done.

This circumstance nearly tipped the balance in favor of the respondent. On balance, it appeared that the respondent knows that the seat belt use would be beneficial, but it would appear to lessen efficiency and create enforcement issues with its employees.

66. Rule 1910.178(k)(1) requires that the brakes of highway trucks be set and wheel chocks placed under the rear wheels to prevent the trucks from rolling while they are boarded by forklifts.

69. On March 4, 1998, federal OSHA issued a standards interpretation and compliance letter regarding §1910.178(k)(1). The inquiry and response are stated, as follows:

instance and the operator remained in the forklift. According to Mr. Miller, no forklift has driven off the back of a trailer at Charlotte since he became terminal manager.

75. Although seatbelts are provided by the manufacturer on respondent's forklifts at the Charlotte facility, the forklift operators are not trained to use the seatbelts.

employees from recognized hazards. Recognition of the hazard of forklift tip-over and the need for operators to use an operator restraint system is evidenced by certain requirements in the more current version of ANSI B56.1 consensus standard for powered industrial trucks and

62. North Carolina OSHA has adopted this Directive. This Directive shows that both federal and North Carolina OSHA recognize that forklifts are particularly susceptible to tip-over; that an operator restraint system can prevent death or serious bodily injury; that, when provided, seat belts are

forklifts. According to the alert, approximately 20,000 people are injured in forklift accidents each year. Approximately 100 of these are killed each year. Most of these fatalities occur when a worker is crushed by a forklift that has overturned or fallen off a dock. Overturns is the leading cause of fatalities involving forklifts. Approximately twenty-five percent (25%) of all forklift related deaths that occurred from 1990 to 1994 resulted from forklift overturns. NIOSH warns and advises forklift operators to wear their seat belt if available, and not to jump from an overturning sit-down

introduced. In each fatality, the operator, who was not wearing a seat belt, either jumped or was thrown from the forklift and was struck by the overhead guard or other part of the forklift. The conclusion reached by NIOSH in each case concerning how the deaths could have been avoided was to

Side tip-overs can be prevented. If your truck begins to tip sideways, whatever you do, stay in the truck, hold tight, brace your feet, lean away from the direction of the tip, never try to jump. There is not enough time for you to get clear of the lift truck.

trailer could creep away from the dock as forklifts were entering, leaving a gap which a forklift could fall into, resulting in an off-dock/off trailer incident. Both the forklift operator's manual and respondent's own safety manual require that the wheels of trailers be chocked.

device. The purpose of the seat belt is to keep the operator from falling or being thrown out in case of tip-over or an off-dock incident. It also keeps the operator from being thrown into the mast or uprights to the overhead guard in case of a frontal collision or off-dock incident.

57. The edge of the loading dock where respondent's trailers are pulled up to is four feet (4') high and is open sided. There are no doors, guardrails or other barriers or devices to keep the forklifts from getting near or at the edge of the dock when a trailer is not at a dock door.

ground below, only to have the forklift or its overhead guard fall on her or him. A seat belt would assist the operator to remain within the confines of the cab and overhead guard, substantially increasing the likelihood of avoiding death or a serious bodily injury.

55. The respondent's forklifts contain several labels, including warning labels, on the overhead guard. One label references the ANSI/ASME B56.1 standard. Another label consists of a series of blocks or illustrations with different warnings. Starting from the left, the first block states

"WARNING". The next block has a picture of an operator in a forklift attaching his seat belt and says, "Seatbelts help reduce tip-over injury if you follow these instructions". The next block shows a copy of the operator's manual, thereby advising the operator to read it. Next to that it says

on lift trucks, it is required that the belts be worn. He further advised that OSHA would enforce this requirement under the provisions of section 5(a)(1) of the OSHA Act, the general duty clause. In a letter dated May 22, 1998, the Director further advised that, even though seat belts are not

Director refers to an earlier October 9, 1996, Memorandum to Regional Administrators regarding the use of seat belts on powered industrial trucks. In that Memorandum, it is stated:

direction of the fall). The purpose of these labels is to be a continuing reminder to the operator of the hazards and dangers of driving a forklift and the steps to be taken to avoid injury.

49. The respondent has published its own Forklift Truck Training Manual. The respondent includes in its manual the following warning:

56. None of respondent's employees wear seat belts while operating forklifts as it is not required by the respondent.

OSHA Act in accordance with the October 9, 1996, seatbelt enforcement memorandum.

facility and no governor or other mechanical device has been utilized to assure that the operators do not drive too fast.

76. The respondent does not have a Toyota Operators Manual for its Toyota forklifts at the Charlotte facility.

Murphy also stated that as part of the assessment process she reviewed a study showing that seat belts make forklift operators less safe.

has a higher potential for tip over. She also agreed that tip-overs occur to forklifts while driving across parking lots.

also could not recall any specific study, article or treatise relied upon by respondent in conducting its hazard assessment.

determine if they could withstand the impact of jumping from a forklift falling off-dock or from the back of a trailer.

jump from the truck, which has been documented in many cases to be the cause of injury or death to the driver.

Based on the foregoing Findings of Fact, Conclusions of Law and Discussion, IT IS ORDERED as follows:

3. Citation 1, Item 2 is affirmed as a serious violation of 29 CFR 1910.178 (k)(1) with a penalty of \$2,450.00;

4. Citation 2, Item 1 is affirmed as a nonserious violation of 29 CFR 1910.141 (d)(2)(iv) with no penalty;

manifested by the fact that the compliance officer observed at least five trailers without wheel chocks, some with freight inside.

2. Citation 1, Item 1, as amended, is affirmed as a serious violation of N.C. Gen. Stat. §95-129(1) with a penalty of \$2,450.00;

to jump clear before impact. The factual circumstances in other cases bear this out.

5. All penalties shall be paid within twenty (20) days of the date of this Order; and

6. All violations not previously abated shall be immediately abated.

American Trucking Association and the Industrial Truck Association were members of the ASME committee which adopted ASME B56.1-1993.

1. The foregoing Findings of Fact are incorporated by reference as Conclusions of Law to the extent necessary to give effect to the provisions of this Order.

On the other side is the respondent, which daily operates some 5,500 forklifts in some 165 separate locations, with arguably minimal employee safety problems.

The above Findings of Fact and Conclusions of Law support the result contained in this Order, but they do not fully reveal the mental struggle that occurred in making this decision.

96. The undersigned finds the testimony of the complainant's witness and the complainant's exhibits to be more credible and compelling.

wrong trailer by mistake as a forklift operator was attempting to load or unload a trailer.

stay with the forklift than to leave the truck in the case of a tip-over or off-dock incident. This is further recognized by the forklift and trucking industries.

docks. Further, there is a consensus that, if such an incident were to occur, it is best to stay with the forklift and that, if provided, seat belts should be used.

than buckled up as a forklift tips over. It would also be a greater hazard for the operator to be unbuckled than buckled up in an off-dock situation.

an integral part of an operator safety device; and, that employers are obligated to require operators of forklifts equipped with seat belts to wear them.

use of such devices under Section 5(a)(1) of the OSH Act.

who was not wearing his seat belt.

have required the use of seat belts.

elevation causing serious injury to the worker.

 $\S1910.178(k)(1)$ to chock the wheels of its trailers.

dock supervisor, and as a dockworker and switcher.

will take positions on various issues.

the fatality which occurred in South Carolina.

away from the direction of the tip over or fall.

95. Ms. Murphy has never worked as a forklift operator.

2. The respondent is subject to the provisions of the Act.

1. The complainant's motion to amend is GRANTED;

This 29th day of December, 2006.

RICHARD M. KOCH

HEARING EXAMINER

Duty Clause.

DISCUSSION

CONCLUSIONS OF LAW

97. The penalties were calculated in accordance with the Field Operations Manual.

Based on the foregoing stipulated Findings of Fact, the undersigned makes the following

with the forklift in case of tip-over.

respondent's manual does not include the label advising operators to buckle up.