Canada Appeal Office
on Occupational Health
and Safety

Canada

Bureau canadien d'appel
en santé et sécurité
au travail

Case No.: 2007-02
Decision No.: CAO-07-043

CANADA LABOUR CODE
PART II
OCCUPATIONAL HEALTH AND SAFETY

Con-Way Freight Canada Inc.
appellant

December 20, 2007

This appeal was heard by Appeals Officer Serge Cadieux in Toronto, Ontario, on August 27 and 28, 2007.

For the appellant
Ronald M. Snyder, Counsel

[1] This case is an appeal under subsection 146(1) of the *Canada Labour Code*, Part II (the Code), of a direction issued under subsection 145(1) of the Code for a contravention to section 124 of the Code.

Investigation by the health and safety officer

[2] Health and safety officer (HSO) Kim Mordaunt was given a pro-active assignment by her manager through the National Intervention Model (NIM) which targeted Con-Way Freight Canada Inc. (hereafter referred to as Con-Way or the company). The NIM is intended to help federal employers with their health and safety program and to ensure they are in compliance with the Code. The HSO testified that her investigation was not the result of a refusal to work or of a complaint made by an employee of Con-Way nor was it the result of an accident.

[3] Having introduced herself to a manager of Con-Way, HSO Mordaunt scheduled an inspection of the employer's premises for August 29, 2007. During the inspection, she noticed that forklift drivers were not wearing seat belts.

[4] The HSO discussed on a number of occasions the issue of seat belts with Ron M. Snyder, Con-Way's counsel. Mr. Snyder informed her that the health and safety committee had reviewed this issue and believed that there were procedures in place that negated hazards created by not using seat belts. He referred the HSO to a report from the Institute of Advanced Safety Studies dealing with forklift trucks' overturn rates and probabilities.

[5] The HSO asked Mr. Snyder to have the health and safety committee prepare a report on its findings that the employer was not in violation of the Code on the issue of seat belts. The committee did so in a report titled *Health and Safety Committee Risk Assessment Report,* which was submitted to the HSO on November 24, 2006. The HSO noted that in the report, under section (i), Wearing of Forklift Seat Belts, the final bullet states: "Seatbelts would impede an emergency exit from a forklift cab in an unlikely event of a tip over, side impact by other forklifts or brake failure."

[6] The HSO explained that she conducted research to arrive at the decision that Con-Way was in contravention of the Code. She wrote:

> All of the research I have done leads one to the conclusion that, when a forklift rolls over, the safest place to be is *in* the cab to avoid being crushed by the unit. In addition to the *Code* having provisions for wearing all PPE supplied, the following research confirms that staying in the forklift truck and wearing seatbelts is safer during rollover situations: American Nation (sic) Standards Institute (ANSI) Standard B56.1 29 CFR 1910.178 (a) (4), B56.1–1988, B56.1a–1989, B56.1–1993, American Society of Mechanical Engineering (ASME) B56.1–2000, Occupational Safety and Health Act (US) enforces this under Section 5(a)(1) of the OSH Act, ANSI 29CFR 1910.178 (q) (6) prevents employers from removing

seatbelts, appeals officer decision 05-047 Consolidated Fastfrate vs. Teamsters heard by Douglas Malanka, the report entitled *Operating Experience Summary* prepared by the U.S. Department of Energy, Office of Environment, Safety and Health dated September 8, 2003 confirms that "Vehicle tip-over is the largest cause of forklift-related deaths, followed by being crushed by the vehicle.", Canadian Standard Association (CSA) standard 4.9.2.3. states that "With regard to an operator restraint system, (a) the user shall ensure that an operator restraint system is used." And further that "(c) operator protection in the event of a tipover is intended to reduce the risk of entrapment of the body and any part thereof between the truck and the ground..." CSA standard 5.3. provides more detailed specifications for forklift design, CSA standard 6.9 provides further start up specifications which includes training the driver to use the restraint system, U.S. Department of Labor Standard Interpretation dated July 28, 2004, May 22, 1998, October 9, 1996, and National Institute for Occupational Safety and Health (NIOSH) alert 2001-109.

[7] The HSO testified that she did not find any evidence to the contrary in her search about wearing seat belts. Everything she found points to the fact that in the event of a tip-over, staying within the cab is what prevents an employee from being crushed. For example, when referred to ASME standard B56.1-2000, *Safety Standard for Low Lift and High Lift Trucks*, the HSO acknowledged that it was one of the standards considered in support of issuing the direction, specifically its paragraph 5.3.18. However, under questioning, the HSO agreed with Mr. Snyder that this provision only applies to high lift trucks, and that Con-Way does not use high lift trucks but only low lift trucks. The HSO further admitted that she did not observe any of the conditions described therein, such as overloading or traveling with the load elevated, that can result in lateral or forward tip-overs. Other than the references in the various standards considered, the HSO stated that she was unaware of the existence of any empirical studies indicating that it is safer to remain in the cab of a forklift truck during a tip-over.

[8] During questioning by Mr. Snyder, the HSO agreed that the standards considered in issuing the direction referred to the use of an operator restraint system rather than of seat belts. In fact, said Mr. Snyder, CSA standard B335-04, *Safety Standard for Lift Trucks*, provides the following in section 4.9, Safe Operating Procedures, at paragraphs 4.9.2.1 and 4.9.2.3:

> 4.9.2 Start-up
> 4.9.2.1. Before starting to operate the truck, the operator shall
> (a)...
> (b) engage the operator restraint system (where required by Clause 4.9.2.3. or 5.3).
>
> 4.9.2.3. Operator Restraint System
> With regard to an operator restraint system,
> (a) the user shall ensure that an operator restraint system is used.
> (b) ...

> (c) operator protection in the event of tipover is intended to reduce the risk of entrapment of the body and any part thereof between the truck and the ground but might not protect the operator against all possible injury.

The HSO was unable to state whether the winged seats on the Con-Way forklift trucks constitute an operating restraint system.

[9] The HSO was unaware of any study performed by the CSA to support its recommendations regarding staying with forklift trucks in case of tip-over. In fact, Mr. Snyder opined that it is quite possible that CSA relied on the ANSI standard to make that recommendation since the wording in CSA standard and the ANSI standard are near verbatim.

[10] In the document titled *Assignment Activity*, which lists chronologically each activity undertaken in carrying out the Con-Way assignment, the HSO wrote, next to the date and time of the activity, *i.e.* 06-12-19, 7:00 a.m.:

> Met [Inspector] Kathy Salmon at the CCX[1] yard. We went in the back way where the docks are and truck traffic flows. The dock was not busy; there was only 1 forklift moving although 2 others were started up. The forklift driver stopped and asked us what we were doing. This particular forklift driver was not wearing his seat belt. We identified ourselves and advised we were trying to get a picture of operations when busy. It was very quiet, therefore we left without actually entering the premises. We were watching dock operations from outside. All trailers were chocked.

[11] The HSO stated that the above situation and especially the fact that the Code supports the wearing of seat belts --and all personal protective equipment (PPE)--, while operating a forklift truck led to the issuance of the direction. The HSO was clear: the direction was issued solely on the basis that the drivers of Con-Way were not wearing seat belts. The HSO acknowledged under questioning that the primary reason therefore for issuing the direction was to ensure that the driver remains in the cab of the forklift truck in the event of a tip-over.

[12] The direction is issued under the authority of subsection 145(1) of the Code and alleges that the employer is in contravention of the general duty imposed to the employer by section 124 of the Code, which specifically states:

> The said health and safety officer is of the opinion that the following provision of the *Canada Labour Code*, Part II has been contravened.
>
> 124. – Canada Labour Code
>
> Every employer shall ensure that the safety and health at work of every person employed by the employer is protected.

---

[1] CCX is a reference to Con-Way Canada Express.

> The employer has failed to ensure their forklift drivers are wearing the manufacturer supplied seatbelt/restraining device while operating their forklift trucks.

[13] The HSO directed the employer to terminate the contravention by a specified date. She further directed the employer to take steps to ensure that the contravention does not continue or reoccur. The direction was appealed in a timely manner.

Witnesses

Phil Morrow

[14] Phil Morrow has been working for Con-Way since 2001, specifically at the Mississauga Terminal, also referred to as the XTN Dock[2]. He is employed as a tractor-trailer driver and delivers freight throughout Toronto and the area. He also operates forklift trucks on a daily basis. When he shows up for work in the morning, if the load is not ready for transport, he will proceed onto the dock, get on a forklift and start pulling freight off inbound line haul trailers that transport freight from terminal to terminal. The freight is transferred upon the day's delivery trailers so it can be delivered to the customers. At the end of the day the process is reversed. Once the drivers finish their deliveries, they start making pick-ups at the customers' premises. The freight is then brought back at the terminal on the pick-up trailers, which are then stripped of the freight and put onto the outbound line haul trailers for delivery to other destinations and terminals. Forklifts trucks are utilized in the process.

[15] There are approximately twenty one drivers at the terminal. Mr. Morrow has driven forklifts trucks for the last six years at Con-Way and for six years at another terminal essentially equipped with the same dock. Ideally, all drivers are working at the same time. Mr. Morrow has also been co-chair of the terminal health and safety committee since 2004.

[16] Mr. Morrow was referred to a series of photographs of the forklifts (Exhibit A-23, Tab 1) used at the terminal. The first photograph represents a typical forklift truck used at the XTN Dock. That forklift has a side frame, called the falling objects protection system (FOPS). It also has a grille on top to prevent objects from falling through. The seat, slightly curved, is a wrap around known as a winged seat that provides lateral support to drivers. It provides more stability and helps keep the driver within the operating parameters of the forklift. The forklift is equipped with an elevating mast behind the forks, allowing it to travel with the load at the

[2] XTN is used interchangeably in the text with Terminal, XTN Dock, XTN work place, all of which represent Con-Way's Mississauga Terminal.

desired height. At that dock, the forklifts are equipped with low lift masts, as opposed to customers' facilities that may use high lift masts, the difference being the height at which the forks can be elevated to carry the load. The maximum height that the low lift masts could elevate the forks would be approximately five to six feet.

[17] At this facility, the forklifts trucks are operated indoors exclusively. Other than the opening dock doors, the facility is completely enclosed. The forklifts do not drive up and down a ramp because there are no ramps. The flooring upon which they travel is smooth polished concrete. No portion of the floor is slanted or uneven; it is perfectly flat. The lighting is more than adequate.

[18] When a forklift truck travels with a load, its forks are two to three inches off the floor. On some occasions, such as when loading in the trailers themselves, the forks will be raised at four feet. In these cases, the standard practice is to approach the load racks inside the trailers, come to a complete stop, raise the load at the desired height and proceed forward to position the load on the racks. This is done at idle speed. The low mast trucks are more stable than the high mast trucks because the load is at the bottom. With the high mast trucks, raising the load creates a pendulum effect from side to side, which renders the trucks more prone to tip over.

[19] The maximum speed of the forklifts trucks used in the facility is ten miles per hour. The trucks seldom travel at speeds in excess of slow walk. The company expects drivers to operate the forklifts trucks in a safe manner. Issues of bad driving habits or unsafe acts by some employees have been raised and dealt with by their immediate supervisors on the dock. There is also a great deal of peer driven discipline as well.

[20] There is a progressive discipline system and open door policy at Con-Way: it can start with a simple conversation with the employee and escalate to involving the supervisor, depending on the circumstances. Mr. Morrow has been approached by employees who felt uncomfortable presenting an issue to the supervisor or who wished to remain anonymous. In such cases, he raises the issue with the supervisor directly and deals with the matter accordingly because they have the freedom to do so. There is also on the dock a freight operations supervisor, whose role is not only to see to the safe and efficient movement of the freight but also to enforce company policy and safety procedures and ensure that everybody adheres to them.

[21] Mr. Morrow testified that Con-Way's policy regarding safety is of primary importance to the company. It is also the first value of importance in the company's Corporate Constitution (Exhibit A-23, Tab 2), which reads:

> Con-Way is the industry-leading provider of innovative, differentiated services. We are driven by our Values of SAFETY, INTEGRITY, COMMITMENT and EXCELLENCE. Guided by these principles, we provide Service Excellence to our customers, challenging and rewarding careers for employees and a superior return on shareholder investment.

[22] Con-Way also has a four-star logo, each star having a specific color and representing one of the four values identified in the Constitution, which forms part of the orientation program for new employees. The Gold Star is for safety. According to its description: "This star is first because Safety must be our number one concern... Safety is a no-nonsense issue at Con-Way" and its key elements are:

> **Safety**
>
> - Provide a safe work environment
> - Exercise safe practices in the public domain
> - Demonstrate personal responsibility for self and others
> - Conduct business with policies, procedures and training that ensure safety

[23] Con-Way applies the Smith system for driver training, which is an advanced driver training program. It allows drivers not only to anticipate accidents but to keep themselves from getting into situations where accidents can occur. It is applied in the driving techniques of tractor trailer drivers and sometimes it is brought again to the drivers' performance on these forklifts so they operate in a safe manner all the time. The Con-Way Corporate Constitution also includes a segment titled *Employee Recognition,* which emphasizes an employee recognition process in support of Con-Way's core values.

[24] As a health and safety committee representative, Mr. Morrow described Con-Way's training program as incredibly thorough and ongoing. The level of safety training received at Con-Way is incomparable to some competitors. For example, at his previous employer, Mr. Morrow was only taught the basic operating procedure of forklift driving, such as how to turn it on, how to raise and lower the forks and how to proceed with the forklift truck. At Con-Way, a new employee cannot drive a forklift truck without going through the Con-Way certification process, a two part process that combines a classroom and practical approach.

[25] The classroom part includes going through the manual for training, which also covers the forklift training manual as well as the employee orientation manual, then there is a video, a written test and, finally, a practical test. Mr. Morrow described the section of the employee orientation manual titled *Freight Handling*. It addresses training on the following subjects: Freight Handling Tools, Forklift, Situations for Discussion, Working on the

Con-Way Dock and Loading Procedures. Under the training section dealing with the forklift, the trainee must do the following:

> **During this important training section you will be asked to:**
> Read and review the *Driver's Handbook on the Safe and Efficient Operation* of *Forklifts and Freight Handling* [73261-00 *(1/05)]*.
> Note: This handbook has been specifically developed for Con-Way. It makes several references to OSHA Regulations 1910.178 (Note added for emphasis)
> Observe a forklift demonstration.
> Watch a video.
> Demonstrate basic forklift knowledge and skills.
> Review all six scenarios. Review all forklift safety and operations procedures with employees.
> Ask questions to ensure understanding.
> At the conclusion of this section, upon successful completion of the forklift skill examinations, you will be issued a card that certifies you as a qualified forklift operator. **You must carry this card with you at all times.** You **will** also have a certificate placed in your personnel file.

[26] A written test is administered to newly trained forklift operators as part of the in-class portion of the forklift training. The passing grade required for this test is 80%. Also part of the practical exam is the Con-Way *Forklift Operator's Performance Checklist*, which is used to show the practical abilities or skills of the employee on the forklift. The passing grade for the three skills test is a perfect score, *i.e.* pass or fail. It is part of the annual re-certification that all Con-Way drivers must undertake.

[27] According to Mr. Morrow, no driver has ever driven off a deck at Con-Way. The safety measures in place to ensure this include the following:

1. The trailer to be moved is not assigned to a driver until the loader signs off the loading manifest and hands it in to the supervisor stating that the trailer has been loaded;
2. the driver assigned to a trailer performs a three step process when going to the dock, *i.e.*
   i) examines the load to make sure it is correctly loaded and that it is the right plate;
   ii) raises the back plate at the back of the trailer, shuts the trailer door and pad locks it; and
   iii) after hooking the tractor, removes the wheel chocks.

[28] That protocol, said Mr. Morrow, is rigorously enforced. It is completely engrained in every driver. "This, he added, is how we do our job every day, with every load that we approach. There has never been an instance where a driver has pulled away from the dock without the above having been done."

[29] If spillage occurs on the floor at XTN, the policy is to clean it up immediately. Employees are informed of it through markings or other means, so they can be careful.

[30] Mr. Morrow referred to the *Health and Safety Committee Risk Assessment Report,* which assessed if the drivers were required to wear a seat belt on Con-Way's forklift trucks. The committee was made up of two employee representatives and two employer representatives. A copy of the report was sent to the HSO with the mention that "the wearing of seat belts by forklift drivers ... would not likely contribute to their safety." That, said Mr. Morrow, is the conclusion of the report. Specifically, the portion of the report dealing with seat belts reads as follows:

WEARING OF FORKLIFT SEAT BELTS

- CONCLUSION: Seat-belts not likely to contribute to the safety of the operator.

  Safety practices/safeguards currently in place reasonably practicable to eliminate or control driver injuries at the workplace within safe limits without the necessity of having to wear seat belts.

- RECOMMENDATION: The forklift drivers not to be required to wear seat belts.

- RISK ASSESSMENT:

  ♦ Negligible *risk of lateral tip over*

- Forklifts utilized have low centre of gravity
- Forklifts have clearly marked capacity rating warnings
- Forklifts operate solely on even/flat surfaces
- Forklifts do not travel with elevated goods
- Forklifts do not lift loads into high racking
- Forklifts are governed for speed

♦ *Forklift policies are enforced by supervisors who are present during forklift operations*

* *Negligible risk of inter-forklift accidents*

* All drivers aware of protocol of "lanes" to be used on dock for forklift travel
* All forklifts equipped with back-up alarms, horns and lights (i.e. warning devices)
* Dock is well lit
* Forklift design permits good visibility with minimal blind spots

♦ *All drivers are trained on usage of forklifts, appropriate driving techniques and speed requirements*

♦ *Excellent forklift driver safety record to date*

- Historical data on injuries to forklift drivers available back to January 2000 (Note: Now goes back to 1996; one minor incident)
- No incidence of forklift tip-overs or forklifts exiting dock
- No incidence of driver injury (Now one since 1996)

- Solely 4 letters of instruction issued and one discussion with a driver held since January 2000

- *Seatbelts would impede an emergency exit from a forklift cab in an unlikely event of a tip-over, side impact by other forklifts or brake failure*

[31] It should be noted that all Con-Way forklift drivers are "Class A" drivers bringing in experience as truck drivers. According to Mr. Morrow, "[w]e are considered at Con-Way as the best at what we do, including driving."

[32] Commenting the incident that occurred in 2001 to a Con-Way forklift truck operator, *i.e.* a sudden stop that caused the operator to hit the front protective metal grille, Mr. Morrow testified that the lap seat belt would not have prevented the employee's injuries given the proximity of the grille to his head (see Exhibit A-23, photographs 3 to 7). Photographs 8 to 10 show the operator extending his torso outside the frame of the forklift while wearing the lap seat belt and holding on to the steering wheel. Also, Mr. Morrow stated that he has never seen a shoulder seat belt strap and is unaware whether any manufacturer in the world makes them. It is Mr. Morrow's testimony that in the approximate total of 80,000 hours of forklift service, there has been only one incident at XTN.

[33] Mr. Morrow was asked to elaborate on tip-overs with regards to the forklifts used at Con-Way. He explained that Con-Way's forklifts have low masts, as opposed to high mast forklifts. In a high mast situation, raising an elevated load creates a pendulum effect that could be exaggerated with a heavy load. If the forklift is going to go over with that elevated load, there is a chance that the operator will feel it and may have time to brace himself. If a low mast forklift is going to go over, it will happen very quickly, so quickly that the operator will have no time to brace himself, especially with the seat belt on. In such case, the operator will be like a fly being swatted and when the forklift goes over, he will be held in and propelled down and his skull will be flattened against the concrete. Therefore, said Mr. Morrow, the seat belt would contribute to the "fly swatting" or pendulum motion effect. Generally, concluded Mr. Morrow, the consensus is that the operators would prefer to have the opportunity to bail off the forklift and take their chances of either being pinned under the frame or perhaps being thrown clear. The prospect of hitting the concrete with their head outweighs any possible guidelines of wearing seat belts.

[34] With respect to the issue of collisions, Mr. Morrow stated that the pendulum motion is what happens in these cases. If hit from the side, the operator will be thrown against the seat belt laterally. If hit hard enough and the forklift goes over, the same scenario as above applies. It should be noted that there are no side protection on these forklifts. If, for any reason, someone is coming at the forklift operator with a set of forks or a

piece of freight or anything else, the operator will want to exit his forklift quickly without having to deal with a seat belt impeding his movement.

[35] With regards to brake failure, Mr. Morrow explained that if the forklift is skidding towards an open dock door and the operator can exit the forklift, he certainly will not choose to fly off a dock that is four feet off the ground and try to brace himself on the frame of the forklift. Mr. Morrow was clear: he knows and so do his peers that there is no way that one can brace himself. He will want to get off the forklift. That is an emergency situation. Mr. Morrow feels he deserves the right to get off that forklift. Generally speaking, Mr. Morrow stated that in those cases, he cannot see any instance where a seat belt would be of any assistance.

[36] When asked what instances at Con-Way would justify wearing seat belts, Mr. Morrow explained that the culture of safety at Con-Way, the way they work on the dock, the way they operate their forklifts and the general safety practices and training make it generally safe. There are no such instances and there are no hazards that would justify it.

Professor Ralph Barnett

[37] Professor Ralph Barnett has been qualified as an expert in the field of mechanical safety as it relates to forklift usage, as well as an expert in human factors with respect to forklift usage (Exhibit D-23, Tab 9). The details of his credentials are on file and will not be repeated here. He has been a Professor of Mechanical and Aerospace Engineering at the Illinois Institute of Technology, Chicago, Illinois, since September 1969. Of particular interest to this case, Professor Barnett is a member of eighteen professional societies, including the American Society of Mechanical Engineers as a life member, the American Society of Safety Engineers (ASSE), the American National Standards Institute and many others involved in engineering, mechanics, ergonomics, etc.

[38] Professor Barnett explained that he is the owner of Triodyne Inc., a mechanical, engineering and scientific "for-profit" firm that specializes in the safety of mechanical devices and mechanical systems, including forklift trucks. Triodyne engineers have been involved in the B.56.1 standard as Board members of both the ASME and ANSI committees. Professor Barnett addressed the committees on several occasions with regards to forklift truck safety. He also owns the Institute for Advanced Safety Studies, Northbrook, Illinois, a non-profit safety research consortium that he developed in 1984 to perform pure safety research for organizations such as the U.S. National Institute for Occupational Safety and Health (NIOSH). This institute conducted the study referred to by the Con-Way health and safety committee and made for Allis-Chalmers, in

Matheson, Illinois, one of the largest manufacturers of forklift trucks in the United States.

[39] Mr. Snyder went to great length to establish that Professor Barnett had not only a vast experience with various types of forklift trucks and similar equipment but was also involved in the study and development of safety mechanisms on these machines. For example, Professor Barnett studied safety devices with respect to whether they should be recommended or prohibited. Not all safety devices, said Professor Barnett, are of Type 1, *i.e.* a safety device that helps you all the time. If they are, there is no problem and if they are not too expensive, they should be put in automatically. It is the safety devices that help you some of the time and hurt you some of the time, *i.e.* Types 2 to 7, that need to be studied. Each one becomes more complicated and different philosophies apply to them. In this respect, Triodyne Inc. has developed a protocol called the *Safeguard Evaluation Protocol – A Decision Tree for Standardizing, Optionalizing, Prohibiting, Ignoring, Enhancing, or Characterizing Safeguards* (Exhibit A23, Tab 13). According to its Abstract:

> This decision making process intellectually disposes of the judicial position that a manufacturer has a non delegable duty to include safety devices with his machines. It further challenges the advocacy pronouncement that "safety should not be optional".

Professor Barnett believes that you compromise safety if you do not make safety devices optional.

[40] Professor Barnett conducted studies which indicate that forklifts have a number of dangerous safety systems, such as the seat belt, the winged seat, the overhead guard, etc. There is a dangerous side to them and they have a good side and a bad side. You select them with a value system that helps you make a decision as to whether you can use a device that will hurt you some time. Professor Barnett stated that we do not allow engineers to make decisions or individual companies to play God, to say "it helps more people than it hurts and therefore, we will use it." We reject that notion. He believes that a value system like a standard, the judicial value system, something that represents the societal values must stand up and say: "We evaluated the safety[3] belt in an automobile and here are the good sides: the frontal crashes and what not. Here are the bad sides: the driving of a vehicle in a body of water – the safety belt is grimed when you do that; when your car is on fire – the safety belt at two thousand degrees is a terrible device to deal with; with the seat belt, we compromise your ability to turn backwards when you are backing up; the people who are pregnant or who have compromised lower abdomen, the seat belt puts too much pressure over a small part of their body. These

[3] Professor Barnett uses interchangeably the terms "safety" belt and "seat" belt.

are the downsides and we weigh them against the upside and society has said we will accept the down sides because the upsides are so terrific. However, we do not allow technical engineers or individual companies to do that. It has to be done by technical societies, co-writing societies, administrative forums, etc."

[41] Mr. Snyder asked Professor Barnett to explain the history of seat belts in forklift trucks. Professor Barnett said that at one time, there were no overhead bars in forklifts trucks. In the forestry industry, where they were harvesting trees and cutting large branches, forklift operators would have the branches fall directly on them. Therefore, they fashioned a falling object protective structure for that industry. Every manufacturer of forklifts, at one of their annual trade shows, showed one novel overhead guard called the falling object overhead protection structure (FOPS). The following year, this was put into B56.1 standard and everybody had to have this protective structure. What followed is that the loads fell from the forks onto the FOPS, causing the machines to tip over and, as a result, the operator to be crushed by the overhead guard. To protect the operator from being crushed by the guard itself, something had to be added to the forklift, so they introduced a safety belt into the research, *i.e.* the lap seat belt. This was done with the American Trucking Association. However the research was not conclusive. Therefore, other research programs were initiated, including a study on caterpillars performed by Professor Barnett. A new phenomenon was identified, the "fly swatter effect".

[42] Technically, the "fly swatter effect" is a double pendulum. When a forklift starts to tilt and gets to the top of its apex, for a second if you do not have a seat belt on, you free fall strait bound. It is at a certain velocity that you will hit the ground. This is referred to as the transference model. However, if one is wearing a seat belt, the machine rotates over; you are dragged behind it and whipped into the ground. That increases your speed over a free fall significantly. This was dubbed in the forklift industry as the "fly swatter effect". This effect attracted a huge interest because it raised the question of whether the operator was being protected by the seat belt from the overhead guard which in turns protects the operator from falling objects. It now seems that the seat belt is causing more mischief than good, so that something must now be put in the forklift to protect the operator from the seat belt. Professor Barnett testified that in order to solve this problem, he took over one hundred forklifts and destroyed them in his testing program just to study this "fly swatter effect". He found that this effect is at its minimum on unimproved surfaces such as ground or soil that are not concrete or asphalt (See Exhibit A23, Tab16, *Three Wheeled vs. Four Wheeled Turf Work Trucks*).

[43] In attempting to resolve the issue of seat belt, Professor Barnett stated that the winged seat was a contrivance to protect the operator from the seat belt. A number of designs were studied, such as seats with

wraparound the shoulders, then wraparound the hips and in the case of the Toyota forklifts trucks used in the instant case, wraparound the middle. Various combinations of these designs were also studied. According to Professor Barnett, the literature is beginning to suggest that the winged seats used at Con-Way are the best. The studies that he conducted on the forklifts trucks, with only the winged seat used without the seat belt, have shown that the operator's head or torso was never pinned underneath the overhead guard. Although it did happen that the operator's head would hit the overhead guard inside the forklift when thrown around during the various tests performed, the operator was never crushed by the overhead guard when wearing the unbelted winged seat.

[44] Professor Barnett carried out a study titled *Static Overturns of Forklift Trucks, Safety Analysis and Testing Program of Operator Restraint Systems* (Exhibit A23, Tab 17), that was produced in 1986 by the Institute for Advanced Safety Studies for the Industrial Truck Division of Allis-Chalmers. Its Summary reads:

> The Institute.for Advanced Safety Studies completed 56 forklift truck lateral tip-over tests. These tests[4], simulating tip-over accidents, were conducted by turning a stationary forklift truck onto its side after placing a head-instrumented anthropometric dummy in the operator's seat. The purpose of the tests was to determine if using a winged seat and/or seatbelt would affect the frequency and severity of impact of the operator's head hitting the ground during tip-over accidents.
>
> Severity of impact was quantified by interpreting the output of a tri-axial accelerometer in the dummy operator's head in terms of the Head Injury Criterion (HIC) Index which is employed[5] by the National Highway Traffic Safety Administration to define head injuries; and, the Severity Index (SI), NHTSA's previous method. Both indices recognize the importance of both the time duration and the magnitude of acceleration impulses; values of HIC in excess of 1000 are interpreted as critical impacts producing irreversible brain damage.
>
> In these experiments, the dummy's head was found to always impact the ground. Critical impacts (HIC>IOOO) were found to frequently occur with the dummy operator not restrained, or restrained by winged seat, seat belt or both. The winged-seat-with-belt always produced HIC's>1000 and the average value of HIC produced by this combination was approximately twice the average severity indicated for winged seat alone, conventional seat with belt, or conventional seat without belt. Application of the Severity Index criterion produces identical conclusions. Thus, the serious head injuries meant to be alleviated by the operator restraint system (impact by the FOPS) were found to occur when the dummy operator's head impacted the ground.
>
> It should be noted that the restraint system is a passive device. To be effective, it cannot rely on specific operator responses or the strength of the operator. If the restraint system is effective as a safety device, it should be possible to protect

[4] The tests were conducted on cement floors.
[5] The HIC is used by most government agencies in the U.S.

the anthropometric dummies used in these experiments. The results of the tests reported herein thus show that the restraint system does not protect the operator.

Effects of Seat/Belt Combination on Head Injury

	Averaged Peak Resultant Acceleration (g's)	Averaged Head Injury Criterion (HIC)	Averaged Severity Index (SI)
Conventional Seat without Belt	362	1200	1427
Conventional Seat With Belt	426	1164	1556
Winged Seat Without Belt	377	1240	1447
Winged Seat With Belt	528	2331	2691

[45] This study shows that, for the first three tests using a conventional seat without a belt and with a belt, and a winged seat without a belt, the SI have values that are statistically insignificant. However, once the test is carried out using a winged seat with a seat belt, both the HIC and the SI almost double in value, indicating that the operator would suffer either death or irreparable brain damage as a result of a tip-over on a concrete surface. This significant difference is caused by the "fly swatter effect".

[46] Furthermore, to explain the inability of an operator to rely on response and strength to hold onto the frame in the event of a tip-over, Professor Barnett also carried out another study titled *Safety Analysis of Rollover Compactors Exposed to Rollover* (Exhibit A23, Tab 18). The Emergency Protocols of the study reads:

> **Emergency Protocols**
> *Grab Onto Steering Wheel and Lean to High Side.* Forklift truck manufacturers have determined that a stuntman is capable of grabbing onto the steering wheel, forcing his back to the seat, and leaning to the high side of the tipping forklift, and that this procedure retains his body within the protective zone without allowing his head to strike the operating surface (7-8). A review of these stuntmen testing programs indicates that the heads of these stunt professionals "almost" touch the operating surface which suggests that ordinary forklift operators who are not expecting an excursion cannot succeed with this protocol. Tests involving forklift

> tipping with non-professional operators had to be terminated at tip angles[6] which were less than 90° because the injury threshold of these operators was being violated (9). Part of the protocol involves on-product warnings and instructions which are repeated in the forklift manual. Warnings of this type can impart information, but cannot be dependent on to influence an emergency response during a tipover which involves training and not just information transfer.

[47] In this study, stuntmen actually know when the tip-over is going to take place and they are wearing helmets. They are padded everywhere and are in top physical condition. In grabbing the steering wheel, they are capable of producing 200 lbs. of resistance. With the winged seat with no seat belt on, it is necessary to develop approximately 125 lbs of resistance to hold on the steering wheel. At this level, Professor Barnett stated that anyone is capable of surviving. However, his research indicates that, with the winged seat and the seat belt on, the actual numbers for calculating the HIC jumped to incredible values[7]. You cannot survive at those levels said Professor Barnett. At those levels, 100% of people will be killed.

[48] Professor Barnett explained that seat belts are good, winged seats are good and you would expect that when putting both together, it would be even better. However, it turns out that it is just the opposite. It is a calamity when a winged seat is used with a seat belt.

[49] Under those conditions, Professor Barnett was of the view that individuals should not be required to wear seat belts if using the forklift on concrete floors. On other surfaces, it is different. If a wide forklift is used, for example one that is twice as wide as the ones used at Con-Way, then the head cannot hit the ground when the operator is swept down. Again that is a different situation. However, if a seat belt is required to be worn on a Con-Way forklift under the conditions described above, you can expect the driver of the forklift to perish in the event of a tip-over. The likelihood of the operator dying is just overwhelming.

[50] Professor Barnett was asked whether he was aware of the survival rate of drivers being thrown clear from a forklift in a tip-over. He explained that the literature is not helpful in this respect because there is no good scientific base for the number of people who survived when they jumped. When somebody jumps from a forklift and survives, nobody records this. Data is recorded only when people are hurt. The dilemma now is whether to make recommendations about jumping out. A group of forklift truck operators[8] testified in a number of hearings held in California, which wanted to introduce seat belts on forklift trucks. The operators testified

---

[6] Tests were actually terminated at 45 degrees.

[7] Professor Barnett quoted numbers in the range of 4000, 6000 and 8000, indicating that these numbers were HIC numbers, meaning they were numbers used in calculating HIC values.

[8] Professor Barnett declared that hundreds of operators testified in the same manner in these hearings.

that if seat belts had been required, they "would not be here to testify." They essentially said:

> I work at the docks and everyday, two or three forklifts go into the "Gate". Nobody ever gets killed. If we have seat belts on, the machine falls to the bottom instantly and now we have to get out of those seat belts in order to survive. We have no trouble now in getting off. I cannot imagine what is going to happen to us if you make us wear seat belts.

[51] There is no scientific program to study the response time of forklift operators. According to Professor Barnett, forklifts tip over "slowly" *i.e.* in one to three seconds. If operators anticipate that they are headed for a mischief, they can jump off the machine and free of the machine. However, there are situations where complications can occur, such as shifting in reverse rather than forward. In such a case, a passive system is needed to save the operator because no active system will go into effect fast enough. He declared that this business of jumping off is clearly not well studied. However, it used to be the method of getting off a machine that tipped over. The operators would swing their feet to the side and simply stand up and the machine would fall off right next to them. Professor Barnett admitted that "there is a whole area where we are ignorant and where there is no data..." to testify about. Nonetheless, it is clear from Professor Barnett's testimony that he strongly believes that, without the seat belt, operators have a fighting chance.

[52] With respect to frontal collision such as the forks hitting a wall or a dock plate and causing a sudden stop, Professor Barnett said that if you do not have a seat belt on, you translate forward and smash into the steel meshes that are on the forklift. However, if you are wearing a seat belt, you will hit the steel mesh at a much faster speed. It is the same problem as with a person sitting in the back seat of an automobile. You rotate forward at this high speed and you smash your face into the mesh system on the forklift. He believed that you are better off without the seat belt on.

[53] With regards to forklifts that jump off a dock, Professor Barnett explained that, having looked at so many of the tests that have been made, they are out of control and there is just not enough information to really make a conclusion about these situations. Sometimes, he said, if the forklift falls off perfectly, having a seat belt will "package" the operator completely and will really be helpful. However, the forklifts could come off at different angles and twist and do things that you just cannot predict where the person is going to go. It is a violent exercise. Jumping off is a perfectly sensible thing to try to do in order to only free fall. Jumping off from a height of four feet[9] is not fun but most people who are prepared can manage to do so if they are careful.

---

[9] By referring to the four feet height, Professor Barnett was likely referring to the height of the dock at XTN which is four feet off the ground.

[54] With regards to side collision, Professor Barnett explained that the options of the operator in such cases are either to slow down or speed up so as not to be hit by the coming forklift, or to jump off the unit. If the forklift that hits your unit is carrying boxes, when it hits you, all the boxes tend to go right through the compartment of the forklift that is doing the striking. It sweeps through. The operator really does not want to be sitting there at that moment, restrained by a seat belt. He wants to move away from those objects, which can be heavy because these forklifts can lift up to four thousand pounds. Therefore, a load of more than a thousand pounds can easily come at the operator at five or six miles per hour. The operator is better to jump off or, if he is not restrained, to let himself be swept off and not remain sitting while his torso is being pushed by the load.

[55] Professor Barnett mentioned that he has conducted many studies with forklifts and operators who must travel in reverse. He expressed the view that the more you restrain an operator, the more difficult it is for the operator to look rearwards. In conventional forklifts where more than half the time driving is done backwards, having an operator that can freely look backwards turns out to be a major safety device. The operator is really restricted if you put wings on the seat to prevent him from turning around and wearing a seat belt again restrains the operator from turning around. It has been recognized that driving an automobile with a seat belt restricts the driver's ability to look rearwards when driving backwards. Therefore, there is no question that the operator is being compromised as a result of this. The units at Con-Way are superior in that sense because the operators do not drive rearwards. Also, they only carry things that are, at the most, four feet tall and, that way, they always have forward visibility. That is the proper way to drive whenever possible. Con-Way happens to have a concept which is superior.

[56] The ASME B56.1-2000, *Safety Standard for Low Lift and High Lift Trucks*, is a pure work in the engineers' code of ethics Its number one canon is that engineers shall hold as paramount the public safety, health and welfare in the discharge of their professional duties. Hence safety is an essential element of the standard, which involves numerous areas, including forklift truck safety. Professor Barnett, a life member of ASME, confirmed that the term "seat belt" does not appear in the standard. He was referred to paragraph 7.40 of the standard by Mr. Snyder. It reads:

> **7.40 Operator Restraint Systems:**
>
> Counterbalanced, center control, high lift trucks that have a sit-down, nonelevating operator position shall have a restraint device system, or enclosure that 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 tip over...

[57] Professor Barnett noted that the Con-Way forklift trucks are low lift trucks and consequently, this provision simply does not apply to them. Also, given their design, the high lift trucks are definitely more prone to tip-overs, something that does not exist with the Con-Way trucks.

[58] When asked to explain the absence of the term "seat belt" in the standard, Professor Barnett opined that as soon as you put that term in the standard, all research on restraint systems comes to an end. It is an extremely expensive business to keep researching this business of restraint systems. Once you obtain permission from a standard to just put on a seat belt and nothing else is required, that, said Professor Barnett, is the end of all research. They do not give such permission because they know, from people like Professor Barnett and others who conducted extensive research on this issue that the seat belt is not the answer. The seat belt is a Type 4 or Type 5 safety device. Sometime it helps you, sometime it hurts you and sometime it does nothing. Those are very complicated safety devices because, using the analogy of penicillin, they do good things and they do bad things. And the bad things are really bad.

[59] Again, in reading paragraph 5.3.19 of the standard, Professor Barnett reiterated that this provision does not make reference to seat belt but only to the use of an operator protection device or system. Since that provision also referred to the application of paragraph 5.3.18, Professor Barnett reiterated that this provision does not apply to the low lift Con-Way forklift trucks, as explained above, since it reads:

> 5.3.18 The operation of a counterbalanced, center control, high lift truck with a sit-down, nonelevating operator requires special safety considerations...

The reference to the type of trucks specified above was intentional.

[60] Notwithstanding that paragraph 5.3.18 does not apply, Professor Barnett was asked to comment on the validity of subparagraphs (d) and (e), which state that the operator should stay with the truck in the event of a tip-over or when the truck falls off a loading dock or ramp. He replied that there is no scientific data to support these statements, adding that it is frightening since, as reported above in the anecdotal testimonies in California, so many people survived because they jumped off their forklift trucks.

[61] One document referred to by the HSO in support of the direction is the U.S. Department of Energy document titled *Operating Experience Summary* (Exhibit A23, Tab 20). The HSO underlined the following at page 3 of the 9 page-document:

> The U.S. Bureau of Statistics reports that every year in this country there are about 95,000 powered industrial trucks accidents that result in injury and more than 100 deaths from forklifts mishaps occur annually. Vehicle tip-over is the

> single largest cause of forklift-related deaths, followed by being crushed by the vehicle. The same applies to non-fatal accidents, where tip-over and being struck by the vehicle, followed by being struck by falling loads, account for the majority of industrial truck accidents...

[62] With respect to falling loads as a source of injuries, Professor Barnett was unsure of the sources for these statistics and did not elaborate very much on this point. With respect to accidents occurring as a result of being struck by the vehicle, he explained that unlike cars, which are on the road while people are on the sidewalk, people and forklift trucks mix together since people walk on the same floor used for forklifts and share the same environment, which explains why accidents are more likely to occur.

[63] The HSO had also underlined, at page 4 of the document, one of the errors given under the heading Commonly Made Errors during Forklift Operation, *i.e.* Attempting to jump clear of the forklift during a tip-over accident. Professor Barnett stated that there is no data at all to confirm this statement. In fact, said the professor, it may very well be that jumping clear of the forklift is a proper course of action. No government organization and no agency or otherwise have conducted studies or kept statistics as to the number of drivers who escaped injury free from a tip-over. There is a very high probability that the number of those who did because they jumped actually exceeds the number of those who remained in the cab. In mixed results, *i.e.* the combined statistics of those who go over the docks and those involved in tip-overs without a seat belt, the ratio would be 50:50, that is 50% escape and 50% are injured. However, said Professor Barnett, we do not know why this happens. Is it because they jumped? Or because they held on to the steering wheel and were just lucky? Many of those who escaped were not included in the statistics because nobody kept track of them. There is a very good possibility, said Professor Barnett, that jumping is one of the best strategy around.

[64] Another document relied upon by the HSO, the NIOSH Alert *Preventing Injuries and Deaths of Workers Who Operate or Work Near Forklifts*, Publication No. 2001-109, refers to ASME/ANSI B56.1-1993, which requires the following:

> Operation
>
> • The operator of a sit-down type forklift should stay with the truck if lateral or longitudinal tipovers occur. The operator should hold on firmly and lean away from the point of impact. (ASME/ANSI B56.1, ¶ 5.3.18[d] [ASME 1993]

[65] As mentioned earlier, there is no data to support the statements made in subparagraphs 5.3.18 (d) and (e). According to Professor Barnett, "they (the people at NIOSH and ASME) are extrapolating from the automobile experience which has shown that it is better to stay with the automobile in a roll over incident. They have not studied the forklift and therefore, they

should be careful about making statements like this because they may be doing harm." Jumping from a forklift may be the best solution, however, Professor Barnett clarified that he is not saying that it is necessarily the best strategy: he admits that he does not know this but he believes that no one else knows. This strategy should not be discarded without doing research. Therefore, the recommendation in the Alert that "operators of sit-down type forklifts should be instructed not to jump from the operator's compartment but to stay inside by leaning in the opposite direction of the overturn" does not consider the "fly swapper effect" which is the real hazard in this case. It is clear that wearing a seat belt will prevent the operator's head from being crushed; however, said Professor Barnett, we also know that utilizing the winged seat will ensure the operator's head will also not be crushed.

[66] The *Occupational Safety and Health Act of 1970* (the OSH Act) was also relied upon by the HSO to issue the direction. The general duty clause of the Act is found at section 5. It reads in part:

SEC. 5. Duties

(a) Each employer –

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

[67] Professor Barnett stated that nowhere does the OSH Act make any reference to seat belts. The OSH Regulations, at section 1910.178, Powered industrial trucks, also do not make any mention of seat belts. The Occupational Safety and Health Administration (OSHA) has not done any research to determine the viability of using seat belts for the simple reason that it does not do research and has to rely on others to do this. It relies on voluntary standards like ANSI and ASME standards and none make any reference to seat belts. The use of the general duty clause by compliance officers is really overreaching. It is acceptable as long as it reflects the standards referenced, but they should not use it to make their own laws.

[68] Mr. Snyder referred Professor Barnett to the OSH Regulations, paragraph 1910.178(l), Operator training, which reads under clause(3)(i)(A):

1910.178(l)(3)

Training program content. ....

1910.178(l)(3)(i)

Truck-related topics:

1910.178(l)(3)(i)(A)

Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate;

[69] The operating instructions referred to in this provision are the manuals provided by the forklift trucks manufacturers. The Administration is relying on their expertise to do this while it is supposed to be regulating this expertise. The manufacturers' recommendations are still based on anecdotal information. They talk to a number of users, they tend to employ people who are familiar with forklifts, but there is no empirical evidence at all to support their recommendations.

[70] In response to the comment made by Mr. Snyder as to whether he was suggesting that seat belts should never be worn on forklifts, Professor Barnett was adamant that this is not the case. If you are working on a surface that is forgiving, *i.e.* that is not a concrete surface - like soil or sod, then since you have essentially brought the "fly swatter effect" under control, you can reap all the advantages of the seat belt. Professor Barnett would recommend wearing the seat belt in those circumstances. If you have machines that are sufficiently wide so that once the operator leans to the side he cannot extend beyond the frame of the unit[10], then he would also recommend wearing the seat belt.

[71] In discussing the accident frequency rate[11] (AFR), Mr. Snyder referred to the AFR for all industries as well as the AFR for the specific industries involved with machinery (Exhibit A23, Tab 25). The statistics for all industries show that, from 1921 to 1993, the lowest AFR of 5.99 was reported in 1961 while the lowest AFR of 3.65 for the specific industries involved with machinery was reported in 1962. According to the *Safety Bulletin* released by Triodyne in June 1995,

> When a design has an AFR much greater than 6, the time has come to revisit the drawing board; an AFR lower than 6 means that the safety strategy is moving in the right direction.

[72] Professor Barnett stated that after putting together some exposure numbers, they obtained that 145.5 millions of hours of exposure produced 5 tip-overs. That, said Professor Barnett, does not mean 5 injuries.

---

[10] Professor Barnett referred to photographs 9 to 12 of Exhibit A23 showing an operator extending his torso beyond the frame of the Toyota forklift trucks used at Con-Way. In this case, he does not recommend wearing seat belts because of the "fly swatter effect".

[11] The accident frequency rate is the number of disabling injuries per million "man" hours of employee exposure.

Maybe some escaped. Notwithstanding this, assuming that all 5 operators were injured, that would mean an AFR of 0.03; it is 145 times better than the lowest AFR ever recorded. Tip-overs are regarded as very rare. Nevertheless, a great amount of money is spent on research in ways to abate the injuries related to tip-overs comparatively to any other areas. In the trucking industry, tip-overs are one of the less frequent events and almost never happen. Professor Barnett submitted that having only 5 tip-overs for 145.5 millions hours of exposure is truly a rare event.

[73] In referring to the one injury that occurred at Con-Way in 80,000 hours of operation of forklift trucks, Professor Barnett opined that it means that Con-Way has a superb safety program. Tip-overs are not an issue at Con-Way, just like going off the dock is not an issue there as well for a good number of reasons. Seat belts would compromise the safety of Con-Way forklift trucks operators if they were required to wear them.

Submission for the employer

[74] Mr. Snyder submits that the HSO's direction under appeal was not issued in response to a complaint by an employee or to a refusal to work under section 128 of the Code. It was issued solely because the drivers of forklift trucks were not wearing seat belts. The issue before the Appeals Officer (AO) is whether that omission by the drivers is in itself sufficient to constitute a contravention of section 124 of the Code. The evidence, said Mr. Snyder, is that not only was the HSO incorrect in her assessment that the appellant breached the obligation of section 124, but further that her direction has the consequence of placing the employees at greater risk of irreparable injury, or even death, by requiring them to wear seat belts. For this reason it is necessary to have the direction set aside.

[75] With respect to the obligation imposed by section124, the question is, according to Mr. Snyder, what exactly is this employer's obligation. The employer, said Mr. Snyder, is required to take all reasonable steps to ensure that the health and safety of the employees are protected. Having regards to various statements made by this Appeals Officer in *Mr. Juan Verville et al. and Correctional Service Canada, Kent Institution*, 2002 CAO Decision No.13, and found in the Federal Court decision in *Juan Verville and Service Correctionnel du Canada, Institution Pénitentiaire de Kent*, 2004 FC 767, as well as in *R. v. Saskatchewan Wheat Pool*, 47 WCB (2d) 82, Mr. Snyder concludes that provided the employer is acting reasonably, *i.e.* has taken all reasonable steps to protect the health and safety of his employees, that is sufficient to meet the section 124 obligation test.

[76] Mr. Snyder stated that the various measures taken by the employer constitute, in his terms, the *margins of error* that are built into its policies to

prevent or minimize the possibility of injuries that may arise in the event of a tip-over or collision. Those *margins of error* are as follows.

[77] Firstly, the Con-Way forklift drivers must undergo a mandatory detailed certification training program, which includes both a classroom and a practical component. The training program is mandatory not only for new employees but also for those who already possess previous forklift experience. Each new prospect obtains individualized attention since the training is given one on one. The candidates must exceed 80% on the written portion and obtain 100% on the practical component. The certification is conducted on an annual basis for all drivers.

[78] Secondly, in addition to the forklift training manual, Con-Way has gone the extra step of developing its own handbook on driver safety and the efficient operation of forklifts. This handbook is required reading for all of Con-Way's forklift operators.

[79] Con-Way has also taken other reasonable steps to ensure the safety of its forklift drivers. For example, there is the physical environment. The facility in which the forklift drivers operate is essentially an enclosed industrial complex with several bay doors. Therefore, the drivers are generally protected from the exterior elements. The warehouse provides very good lighting. The forklifts are driven over completely leveled and smooth concrete floors. There are no ramps to drive up and down. At no time do the forklifts ever leave the enclosed warehouse area. The forklifts are driven in a stable and controlled environment.

[80] Other factors also minimize the possibility of tip-overs or other accidents at the Con-Way facility: other *margins of error* minimize the possibility of injuries. The forklifts go no faster than quick walking pace. In fact, at maximum speed, the forklifts travel at 10 miles per hour or 16 kilometers per hour. The forklifts are all equipped with low mast, which means they have a very low center of gravity which, in turn, minimizes the possibility of tip-overs. They travel with goods at a maximum height of 2 to 3 inches above the floor; just enough to clear the floor surfaces, which further negates the possibility of tip-overs. Furthermore, when the goods are placed on the forklift high power, as Mr. Morrow has testified, the forklifts are in a dead spot position and move exceptionally slowly approaching the power to place the goods thereon. Drivers never transport goods that exceed the maximum capacity designated by the manufacturer. The design of the forklifts permits good visibility with minimum blind spots, thus minimizing the possibility of collision. They are all equipped with the necessary warning devices, *i.e.* the back up alarm, the horn and the lights, which are regularly used, as testified by Mr. Morrow, who also said that operators also yell at each other in addition to these warning devices. The drivers are also aware of the dynamic range, *i.e.* the travel range referred

to in the *Health and Safety Committee Risk Assessment Report*. Equally important is the fact that all drivers, who all hold a Class A driver license from the Ontario Ministry of Transport (MOT), have ingrained in them the SMITH driving system taught in the training manual, *i.e.* to be constantly aware of their surrounding.

[81] Mr. Snyder suggests that I also take note of other *margins of error*. As for the insurance that a delivery truck does not pull away from the dock prematurely while a forklift truck is going back and forth onto the trailer, Mr. Morrow confirmed that it is engrained in all drivers to follow the established protocol:

1. the goods on consignment must be signed off. The driver must ensure this is done before anything else can be done;
2. the dock plates are raised;
3. the driver then closes the back door of the trailer and locks it; and finally,
4. the driver removes the wheel chocks which are utilized to prevent what is referred to as trailer creep.

[82] Other *margins of error* include the adherence the employer requires to its forklift safety policies. Not only are the policies enforced by the managers through a progressive disciplinary program, but the peer pressure is equally important. The drivers themselves will not hesitate to impose peer pressure to ensure the drivers drive safely. This form of pressure is the strongest mode of enforcement. Also, the company's Constitution reflects its commitment to safety. It is its core value. In over 80,000 hours of forklift operation in Canada and the United States, there has been one forklift driver injury, an injury that could not have been prevented even if the driver had been wearing his seat belt. In fact, the injury could have been worse had the employee worn his seat belt as a result of the "fly swapper effect" reported by Professor Barnett. Hence, the employer has exceeded the requirement of section 124 of the Code.

[83] Since 1996, there has never been one incident of forklift tip-over, which is the primary concern for which the HSO issued the direction. There has never been an incident of forklift falling off the dock. There has never been an injury arising from forklifts colliding with each other, or with pallets or otherwise. The HSO presented no evidence to suggest that the environment where these forklifts operate is unsafe or that drivers operate in an unsafe manner.

[84] When paragraph 5.3.19 of the ASME standard was reviewed with the HSO during cross-examination with respect to factors that give rise to tip-overs, the HSO confirmed that she did not observe any transgression at the Con-Way facility giving rise to the possibility of tip-overs. Her only

reason for issuing the direction was that drivers were not wearing seat belts.

[85] Hence, argued Mr. Snyder, the employer has taken all the reasonable measures to protect forklifts drivers and therefore exceeds the requirement of section 124. Furthermore, failure by this Appeals Officer to set aside the direction is to guarantee that the forklifts drivers will meet a certain death or, as a minimum, they will sustain serious irreversible irreparable brain damage if they encounter the unfortunate incident of a tip-over. The only empirical evidence before this AO confirms that the wearing of the lap seat belt in these forklifts equipped with wing seats achieves the opposite of their intention, *i.e.* they do not enhance driver safety but rather will kill them or at the very least render them vegetable.

[86] Mr. Snyder referred to the afore-mentioned expert report submitted at the hearing by "the most foremost safety expert in North America, if not the world, on the subject of forklift truck safety", *i.e. Static Overturns of Forklift Trucks, Safety Analysis and Testing Program of Operator Restraint Systems* and produced in 1986 by the Institute for Advanced Safety Studies for Allis-Chalmers' Industrial Truck Division. The report confirms how treacherous it can be if the drivers are compelled to wear these lap seat belts. Combined with winged seats, such seat belts will exacerbate the level of injury and will not minimize it in tip-overs. The consequence of wearing lap seat belts in these particular forklift trucks is devastating.

[87] The photographs shown in evidence have demonstrated how easy it is to extend oneself beyond the frame of the forklift truck even when strapped in. When a tip-over occurs with these forklifts, the "g" force in action when the head of a driver wearing a seat belt hits a concrete floor would be almost 200% greater than if the driver was not restrained. Mr. Snyder was adamant that there is no other counter empirical data before this AO that negates any conclusion in this expert's report. In fact, he said, Professor Barnett stated that the Michigan study confirms his own study.

[88] In fact, declared Mr. Snyder, this expert report has been accepted by judges in the U.S., as it will be discussed later, who set aside similar directions issued by OSHA officers. Not to quash the direction is to place the appellant in a position of breaching section 124 of the Code.

[89] As to all the literature that the HSO relied upon, in a *bona fide* fashion, to issue the direction, the unfortunate truth is that the recommendation is not based on empirical study but on a presumption which Professor Barnett's testing proved otherwise. For example, as all the other references made in this case which replicate the recommendation, the ASME B56.1-2000 standard suggests that the operator should stay with the forklift if a tip-over occurs, hold firmly onto the steering wheel and lean away from the point of

impact. Professor Barnett, a member of the ASME committee, testified that there is insufficient data to confirm whether it is preferable to remain inside the forklift. He testified that no organization or government department, including OSHA, NIOSH, the Department of Energy, ASME, ANSI or the forklift manufacturers have ever maintained statistics on employees who successfully jumped and prevented injury versus those who jumped but were injured.

[90] As Professor Barnett stated, it is very possible that the number of drivers who have escaped, injury free, by jumping off a forklift truck in a tip-over actually exceed those who have been injured. However, we do not know that today. It is because some employees are injured in their attempt to jump free -- and these are the statistics that are being kept--, that ASME and the other organisations presume that drivers should remain in the cab in the event of a tip-over. Mr. Snyder conceded that we do not know the answer to this issue but affirmed that we do know that if a Con-Way driver, in a tip-over situation, remains strapped into his wing seat with his lap belt, he is history. Therefore, he asked, should a Con-way driver take the chance of jumping free and possibly be injured by the forklift frame, or should he be compelled by the direction to wear the seat belt and be assured of his death or becoming a vegetable for the rest of his life. According to Mr. Snyder, this is not a difficult choice to make.

[91] With respect to the recommendation of leaning against the fall, Professor Barnett has testified that although it is good advice, if the operator chooses to remain in the cab it is unlikely to save him. One must consider the aforementioned study on rollover of roller compactors that Professor Barnett referred to in his safety brief. He references the study of forklift tip-overs involving professional stunt men who are presumably in top physical shape, who are wearing protective clothing, who are anticipating a tip-over in a stage event and who can brace themselves accordingly. In that perfect scenario, Professor Barnett found that their head were virtually[12] touching the cement floor, which suggests "...that ordinary forklift operators who are not expecting an excursion cannot succeed with this protocol." That study essentially shows that tip-over tests involving non professionals happened to start at tip angles which were less than ninety degrees because these non professionals could not withstand the injury threshold being experienced at these much lesser angles. Consequently, Mr. Snyder stated that these studies just cannot be ignored.

[92] Mr. Snyder also suggested that I reflect on Mr. Morrow's testimony that, given the short mast of these forklifts, if a tip-over was to occur, the driver would have virtually no warning of it as it would happen instantaneously and there would be no time to react accordingly. All of this suggests that

[12] The actual term used by Professor Barnett is "almost"

the recommendation to brace oneself in the forklift, such as those used at Con-Way, is really not an option to preclude irreparable brain damage, if not death, which is the very reason that Professor Barnett found in his report that in order for a restraint system to be effective, it cannot rely on specific operator's response or on the strength of the driver.

[93] The aforementioned ASME standard states at paragraph 5.3.19:

> 5.3.19 An active operator protection device or system, when provided, shall be used...

[94] When asked why nowhere the ASME standard referenced by all the previously mentioned organizations uses the expression seat belt instead of restraint system, Professor Barnett replied that it was because ASME recognizes the downside regarding seat belts. Specifically recommending their usage would mean the end of research and viability of seat belts.

[95] Mr. Snyder also addressed the CSA standard with regards to operator restraint systems, which was referenced by the HSO. He noted the complete absence of evidence that the CSA conducted its own empirical study on the utilization of seat belts. As the HSO acknowledged under questioning, the wording of the standard appears to have been plagiarized from the ASME standard: the CSA uses virtually identical wording; it never specifically uses the term seat belt but refers rather to the expression operator restraint system, which can include a number of possibilities, a winged seat, for example. The fact is that the CSA apparently predicated its entire standard on the ASME standard, which, said Mr. Snyder, we know conducted neither empirical evidence nor study to confirm whether it is safer to remain in the forklift cab in the event of a tip-over.

[96] Mr. Snyder noted that it is also interesting that section 4.9.2.3 of the CSA standard which HSO Mordaunt referred to begins by "[W]ith regard to an operator restraint system..." (Mr. Snyder's emphasis)

[97] Mr. Snyder further noted that this provision does not say that "all" operator restraint systems must be used but only that "an" operator restraint system is to be used. He added that it is worthy to note that not even the OSH Act or its Regulations ever make specific reference to seat belts. The reason for this, said Mr. Snyder, is that the jury is still out on the benefit of seat belts. OSHA has never conducted studies on the viability of these seat belts. It has tried to enforce their usage through the general duty clause of the Act, but this has been rejected by the courts. As confirmed by Professor Barnett, the utilization of seat belts on the Con-way forklifts trucks would only exacerbate an employee injury by virtue of the "fly swatter effect" in the case of tip-overs, falling off the seat, collisions and sudden stops. The seat belts do not enhance employee safety. Professor

Barnett's empirical studies are powerful and compelling evidence that the direction should be set aside.

[98] Mr. Snyder submits that the testimonies of Professor Barnett and Mr. Morrow are wholly consistent with the relevant provisions of the Code and its Regulations dealing with forklifts, *i.e.* section 124 of the Code, which is the employer's general duty clause, and section 14.7 of Part XIV, Materials Handling, of the *Canada Occupational Health and Safety* (COHS) Regulations, which deals specifically with seat belts. These provision read:

> *Canada Labour Code*, Part II
>
> 124. Every employer shall ensure that the health and safety of every person employed by the employer is protected.
>
> COHS Regulations, Part XIV
>
> 14.7 Where motorized materials handling equipment is used under conditions where a seat-belt or shoulder-type strap restraining device is likely to contribute to the safety of the operator or passengers, the materials handling equipment shall be equipped with such a belt or device. (Mr. Snyder's underline)

[99] Mr. Snyder submitted that the empirical evidence before this AO is that the forklifts are not operated in those relevant conditions where the seat belt is likely to contribute to the safety of the operator. Professor Barnett confirmed that he is not saying that seat belts should never be worn but rather that when they are combined with the winged seat in forklifts such as those utilized at Con-Way, with driving over cement floors, they are deadly. There may be other conditions where, according to Professor Barnett, the seat belt ought to be worn. For example, where the forklifts are wider and the torso of the driver cannot extend beyond the boxed frame of the forklift or where the forklifts are utilized outdoors perhaps on more forgiving ground. As an analogy, Mr. Snyder referred to air bags used in motor vehicles. It is now recognized that under certain conditions air bags can cause injury or death to specific categories of people such as children, short people or older people.

[100] Mr. Snyder affirmed that there is no breach of section 14.7 of the COHS Regulations in respect of the evidence of Professor Barnett and Mr. Morrow. He referred the AO to paragraph 14.23(3)(*b*) of the COHS Regulations, which reads:

> (3) An employer shall ensure that every operator of manual materials handling equipment receives on-the-job training by a qualified person on the procedures to be followed for
>
> (b) its safe and proper use, in accordance with any instructions of the manufacturer **and** taking into account the conditions of the work place in which

the operator will operate the manual materials handling equipment and the operator's physical capabilities. (Mr. Snyder's underline)

Note: The reference to paragraph 14.23(3)(*b*) of the COHS Regulations, which deals with manual materials handling equipment, is undoubtedly an unintentional mistake on Mr. Snyder's part. I accept that Mr. Snyder is referring in reality to paragraph 14.23(1)(*c*), which deals with motorized materials handling equipment, given that the wording referred to by Mr. Snyder is virtually identical in both provisions. That provision reads:

> 14.23(1) Subject to subsection (2), every employer shall ensure that every operator of motorized materials handling equipment has been instructed and trained in the procedures to be followed for
>
> (*a*) its inspection;
>
> (*b*) its fuelling; and
>
> (*c*) its safe and proper use, in accordance with any instructions provided by the manufacturer **and** taking into account the conditions of the work place in which the operator will operate the materials handling equipment.
> (Mr. Snyder's underline)

[101] Mr. Snyder submits that the instructions of the manufacturer must take into consideration the conditions of the work place, which is consistent with Professor Barnett's testimony. It is also consistent with the risk assessment conducted by the health and safety committee, which determined that the utilization of the seat belts by the forklift drivers would not enhance their safety in the event of emergency circumstances. They would be better to exit the forklift in this case.

[102] Mr. Snyder added that the manufacturer's recommendation as well as those of ASME, NIOSH, the Department of Energy, etc. is that in the event of an emergency, including a tip-over or if the forklift is about to fall off a dock, the driver should remain in the cab of the forklift. That recommendation is at odd and possibly in conflict with the Code provisions. The HSO did not take into consideration the very important provision found at section 14.32 of the COHS Regulations, which reads:

> 14.32 Except in the case of emergency, no employee shall get on or off of motorized or manual materials handling equipment while it is in motion.

[103] Contrary to the U.S standards, this regulation recognizes that it may be necessary to exit the forklift in the event of a tip-over or a forklift going over the dock or otherwise. Again, the testimonies of Professor Barnett and that of Mr. Morrow on behalf of the health and safety committee are wholly consistent with the application of the COHS Regulations.

[104] Mr. Snyder then turned his attention to the jurisprudence on this subject. Specifically, he referred to two decisions issued by U.S. judges. The first is *Virginia International Terminals*, OSHRC Docket No 96-1735, and the second is *Crowley American Transport,* Inc., OSHRC Docket No. 97-1231. Mr. Snyder took an analytical approach by reading the decisions almost entirely and emphasizing key points as they relate to the case at bar. Both cases are similar in nature to the instant case since both deal with the use, or non use, of seat belts. In both cases, the employer was cited (issued an order equivalent to a direction) by a compliance officer for having breached the General Duty Clause under the OSH Act.

[105] The summary of the decision in *Virginia International Terminals* reads:

> General Duty Clause-Feasibility of Corrective Measures-Forklift Seatbelts. A § 5(a){1) general duty charge that employees of a marine terminal facility were routinely permitted to operate forklifts without using seat belts was vacated; although tip over is a recognized hazard in forklift operation, the Secretary failed to meet her burden of showing that seat belts are a feasible means of abating the hazard. Although the use of seat belts was urged in the manufacturer's operating manual, one study showed that the use of seat belts contributed to the severity of head injuries; and an ASME/ ANSI recommendation concerning the use of an operator restraint system in forklifts does not specifically require the use of seat belts. Moreover, experts testified that it is not the custom and practice in the marine terminal industry to require the wearing of seat belts on forklifts; and longshoremen and union officials testified that seat belts delayed them from jumping from the truck in an emergency. Even the Secretary's expert acknowledged that it was best to jump from the truck in certain situations.

[106] In this case, the evidence submitted included the study performed by Professor Barnett, which was considered favorably in establishing that the Secretary (OSHA Safety Specialist) did not meet the burden of persuasion which would allow the judge to find that the employer was in violation of the General Duty Clause. Many individuals testified that it was their experience that it is better to exit forklifts in case of emergencies than to stay inside the cab. In fact, the OSHA Safety Specialist provided a testimony in line with this experience. In this respect, the decision states:

> The Secretary's expert witness, Mr. Richard Sauger[13], voiced an opinion that differs from the [ASME B56.1-1993] Standard in that he does not advocate staying with the truck in the event of a longitudinal tipover. In that situation, Mr. Sauger advocates jumping clear.

[107] In the case of *Crowley American Transport,* the issue of not wearing seatbelt was again discussed. The compliance officer held similar beliefs to HSO Mordaunt that wearing seatbelts in moving vehicles on public roads is safer and consequently, they should also be worn by forklift drivers. The judge in that case was not persuaded that a violation of the

---

[13] Richard Sauger is an OSHA employee working as a Safety Specialist in the Office of Electrical, Electronic & Mechanical Engineering Safety Standards and acting as the Director of the Safety Standards Program for OSHA. He is a member of the ASME B56.1 Committee that wrote the standard the Secretary relies on.

General Duty Clause occurred and rescinded the order. The summary of the case reads:

> General Duty Clause-Existence of a Hazard-Seat Belt Use on Capacity Brand Tractors. A serious charge of violating the General Duty Clause by failing to require drivers of Capacity brand tractors to wear seat belts was vacated for lack of proof that the drivers were exposed to the hazards of being thrown around in the vehicle or thrown from the vehicle in the event of an accident. The employer operated a marine terminal where it loaded and unloaded one-, two-, or three-level cargo barges. A driver was killed as he tried to shift his tractor into reverse while attempting to negotiate a turnaround area at the top of a second level ramp. Unable to shift into reverse, the tractor inadvertently went forward, jumping a low curb and crashing through a guardrail before falling to the concrete dock 20 feet below. Proof that a hazardous incident can occur under an utterly implausible concurrence of circumstances is insufficient to establish a hazard. The Secretary failed to present evidence regarding hazards posed by not wearing a seat belt while operating a tractor that makes frequent stops, travels a quarter of a mile at most at one time, and is capable of a maximum speed of 25 m.p.h.

[108] In both cases, there was no evidence tendered to rebut the overwhelming evidence that wearing lap seat belts at the appellant's facility is going to increase the level of danger and possibly death.

[109] Mr. Snyder referred to the sole Canadian jurisprudence on this matter, *i.e. Consolidated Fastfrate Inc. and Teamsters Canada, Local Union 938*, 2005 CAO Decision No. 47, issued by Appeals Officer Douglas Malanka. This decision was also relied upon by HSO Mordaunt to issue the direction. In this case, which is very similar to the one at bar, the HSO had issued a direction to the employer under section 124 of the Code, because forklift drivers were not wearing seat belts. The AO also had to deal with two additional issues, *i.e.* "trailer creep" and "early departure".

[110] Mr. Snyder read specific portions of the AO decision and commented on the pertinence and accuracy of the statements made therein.

[111] For example, Appeals Officer Malanka writes at paragraph 84 of his decision:

> 84. The concern I have with Mr. Migliazza's position and that of the health and safety committees is that without the seat-belt, there is no safety margin for human error should, for example, an employee inadvertently exceed the normal speed and be involved in a collision or unexpectedly experience a wet or slippery floor...

Mr. Snyder stated vigorously that Mr. Malanka's analysis is completely wrong, because the very *margins of error* built in are those safety precautions instituted to abate the hazard. He explained that he spent a good amount of time in his argument initially setting out what are those margins of error, *i.e.* safety features, that are installed. The mere wearing of a seat belt does not in itself constitute an abatement of the hazard.

[112] Appeals Officer Malanka states at paragraph 85:

> 85. Moreover, as confirmed by the evidence, "trailer creep" and "early departure" are potential hazards associated with this type of operation. "Trailer creep", which can occur as a result of the momentum caused when an operator enters a trailer too quickly and stops rapidly, can cause gaps. Worse, a fork lift truck could fall to the ground and potentially tip over if a truck driver prematurely left the dock without authorization in the same type of accident that required the involvement of HSO Shimono. While Mr. Migliazza and Consolidated Fastfrate Inc. argue that the risk of a tip over in their operation is low, the consequences of a tip over to an operator not wearing a seat-belt could be severe.

Mr. Snyder affirms that, given the confirming evidence heard in the Con-Way case, "trailer creep" and "early departure" are not an issue, while in the case before AO Malanka, there was a history of "trailer creep" and "early departures". He added that even if that was a concern in this case, the empirical evidence before me is that being strapped in a winged seat and going over the dock is not going to serve your purposes. It is going to exacerbate the injury. Also, contrary to AO Malanka's statement that "the consequences of a tip over to an operator not wearing a seat-belt could be severe", the evidence before me is that wearing the seat belt in conjunction with the winged seat is detrimental to the employee's life; irreparable brain injury or death will occur.

[113] Appeals Officer Malanka states at paragraph 87:

> 87. Therefore, I conclude that a seat-belt is likely to contribute to the safety of the operator and section 14.7 of the COHSR applies. I further conclude from section 14.23 that Consolidated Fastfrate Inc.'s operators at Woodbridge, Toronto, must comply with Toyota's warning that the seat-belt must be worn at all times when operating the fork lift trucks.

According to Mr. Snyder, AO Malanka is making a presumption that "a seat-belt is <u>likely</u> to contribute to the safety of the operator", which is based on no empirical data. The problem, he said, is that AO Malanka is merely extrapolating the figures and the results in motor vehicle accidents to the forklift context, which is something he cannot do. Also, with regards to the second sentence of his statement, Mr. Snyder submits that AO Malanka's analysis is incomplete. He opined that when we reviewed the section dealing with training, *i.e.* paragraph 14.23(1)(*c*) of the COHS Regulations, we saw that it requires that the training take into account the manufacturer's operators manual **and** the conditions of the work place. Paragraph 14.23(1)(*c*) reads:

> 14.23(1) Subject to subsection (2), every employer shall ensure that every operator of motorized materials handling equipment has been instructed and trained in the procedures to be followed for

> (*c*) its safe and proper use, in accordance with any instructions provided by the manufacturer and taking into account the conditions of the work place in which the operator will operate the materials handling equipment. (Mr. Snyder's underline)

Mr. Snyder opined that AO Malanka's analysis stopped after considering that the training took into account the manufacturer's operators manual and did not examine the work place conditions under which the driver operates the forklift trucks.

[114] Appeals Officer Malanka states at paragraph 89:

> 89. I am further compelled to comment on the views expressed by employees through T. Koenig that it is safer not to wear a seat-belt in the event of an accident because the driver can jump off the fork lift truck before it crashes to the ground. Not only is this view contrary to Toyota's operating manual but it also places fork lift operators at perilous risk.

Mr. Snyder argues that AO Malanka's totally ignores section 14.32 of the COHS Regulations, which deals with the issue of leaving the forklift in emergency circumstances. AO Malanka is of the opinion that you must remain with the forklift even if it goes over. That is contrary to the Code. Also, the statement he makes in the last sentence of paragraph 89 is completely untenable in light of the evidence submitted in this case. In other words, it is completely contrary to the empirical evidence demonstrating otherwise.

[115] For all the reasons given, AO Malanka confirmed the direction. However, his analysis should carry no weight in deciding the Con-Way case. There is no evidence of "trailer creep" or "early departure" in the instant case. The expert evidence of Professor Barnett was not available in the case inquired by AO Malanka but it is here. AO Malanka made presumptions about the benefits of wearing a seat belt where evidence should demonstrate otherwise. The same presumptions were made in the two aforementioned U.S. cases, which were lost by the appellants for making those presumptions. Furthermore, AO Malanka completely ignored section 14.32 of the COHS Regulations, which allows a driver to remove himself from the forklift in case of emergency.

[116] Mr. Snyder submits that the general duty clause of section 124 of the Code should be read in conjunction with the more specific provisions of the COHS Regulations dealing with materials handling equipment. He asks that the appeal be granted and the direction be set aside, given that

- the appellant demonstrated that he has not contravened any of the Materials Handling Regulations by not enforcing the wearing of seat belts nor has the HSO alleged any breach of the COHS Regulations;

- the HSO failed to identify any study and testing program or any other scientific evidence that would show that wearing seat belts will promote the safety of Con-Way drivers, and the evidence submitted rather indicates otherwise;

- the appellant has demonstrated that it has taken all reasonable steps to ensure the safety of its employees under section 124, through the provision of all the *margins of error* discussed above;

- Professor Barnett has testified that in the trucking industry, the tip-over possibility is a non event or statistically a novel and is not an issue; and

- the appellant has shown a phenomenal near perfect safety record; the records he keeps since 1996 attest to his vigilance towards safety.

DECISION

[117] The issue to be decided in this case is whether the employer is in contravention of the general duty clause of section 124 of the *Canada Labour Code*, Part II, for not requiring its employees to wear the manufacturer supplied lap seat belts while operating forklift trucks at XTN. As suggested by Mr. Snyder, I will consider section 124 in conjunction with the more specific provisions of the *Canada Occupational Health and Safety Regulations* found in Part XIV, Materials Handling.

[118] The applicable provisions are:

> *Canada Labour Code*, Part II
>
> 124. Every employer shall ensure that the health and safety of every person employed by the employer is protected.
>
> COHS Regulations, Part XIV
>
> 14.7 Where motorized materials handling equipment is used under conditions where a seat-belt or shoulder-type strap restraining device is likely to contribute to the safety of the operator or passengers, the materials handling equipment shall be equipped with such a belt or device.
>
> 14.23(1) Subject to subsection (2), every employer shall ensure that every operator of motorized materials handling equipment has been instructed and trained in the procedures to be followed for
>
> (*a*) its inspection;
>
> (*b*) its fuelling; and
>
> (*c*) its safe and proper use, in accordance with any instructions provided by the manufacturer and taking into account the conditions of the work place in which the operator will operate the materials handling equipment.

14.32 Except in the case of emergency, no employee shall get on or off of motorized or manual materials handling equipment while it is in motion.

[119] Before analyzing these provisions, I believe it is necessary to clarify the unusual situation I find myself in deciding this matter. The standard that applies to Appeals Officers in making a quasi-judicial decision is the standard of "balance of probabilities". This means that I must decide this case by considering and weighing the evidence and applying the relevant legislation, as well as the jurisprudence submitted by the opposing parties, and come to a conclusion that more likely than not will be the correct decision given the above. However, in this case, there are no opposing parties. Given that the HSO, who is not a party to this case, issued a direction that was being opposed solely by Con-Way and no one else, including the health and safety committee, I attempted unsuccessfully to entrust the HSO, with the agreement of Mr. Snyder, with a greater adversarial role than normally would be expected from any HSO. The HSO was not comfortable in that role and withdrew from the proceedings. It is certainly her right to do so and I accept her decision. However, this means that the decision I will now render is based on the evidence before me, without that evidence having been challenged by an opposing party.

[120] Mr. Snyder has gone to great length to submit persuasive evidence. I will deal with some of the key points underlining it before analyzing it in detail in light of the applicable legislation.

[121] Mr. Snyder has introduced a report prepared by the health and safety committee who, in accordance with its role under the Code, advised the employer on a recommended course of action. The health and safety committee's recommendation is against wearing the manufacturer's supplied lap seat belts on Con-Way's forklift trucks. Although the committee's recommendation is not binding either on the employer or on a HSO carrying out duties under the Code, it cannot be disregarded or discarded without giving it due consideration. The committee performed a risk assessment of the issue of wearing seat belts in a thorough manner, after consulting with the employees at the work place as well as with a professional in the field of forklift truck safety. It looked at all aspects of the forklift operation and determined that the safety measures in place did not warrant the wearing of seat belts on the particular type of forklift trucks used at XTN. The committee formed the opinion that it would be detrimental to the health and safety of forklift truck operators to wear the seat belts under the existing conditions at XTN. For this reason, the recommendation of the health and safety committee influences my decision positively and I will give it appropriate weight, as I should under normal circumstances, given that the legislator intended for the committee to take on this type of responsibility under section 135 of the Code.

[122] Mr. Snyder has also called upon the expertise of Professor Barnet which, to quote Mr. Snyder, has been qualified before me as "the most foremost safety expert in North America, if not the world, on the subject of forklift truck safety." There is no doubt that Professor Barnett is a leading expert in this field. His *curriculum vitae* is most impressive and leaves no room for interpretation with respect to his qualifications. His testimony has shed light on a subject which is not only complex but is evidently misunderstood by many. It had a powerful positive influence on my decision as I give it considerable weight with respect to his recommendation not to wear the manufacturer supplied lap seat belt.

[123] Section 124 of the Code imposes an important duty on the employer to ensure that the health and safety at work of the employer's employees are protected. The word "ensure" is seen by many as a stringent word. It was included in the general duty clause intentionally. To ensure means to make sure, to make certain, or to guarantee. However, this word cannot and does not impose an unreasonable duty on the employer. This duty can be satisfied when the employer has taken all measures reasonable in the circumstances to protect the employees' health and safety at work. In order to find that Con-Way is not in contravention of section 124 of the Code, I must therefore be satisfied that the measures taken by Con-Way in the instant case are, more likely than not, reasonably sufficient to protect forklift truck operators, who are not wearing the manufacturer supplied lap seat belts, against possible injuries.

[124] The issue that I must decide will be analysed by dividing it into two parts. The first part is whether Con-Way is justified in not requiring its operators to wear the manufacturer supplied lap seat belts on its short mast forklift trucks equipped with winged seats and operated over a concrete floor at XTN. The second part is, if I find that Con-Way is justified in doing the above, whether the measures in place are sufficient to protect the forklift truck operators at XTN against possible injuries while not wearing the manufacturer supplied lap seat belt. If I agree with both parts above, I will rescind the direction given by HSO Mordaunt since I will have found the employer to be in compliance with the relevant provisions of the Code and Regulations.

[125] Before addressing the first part of the issue, I will make an observation on the ASME and ANSI standards considered by the HSO in issuing the direction under appeal. These standards have been shown to apply to high mast forklift trucks. They do not apply in the instant case to the short mast forklift trucks used by Con-Way at XTN. The comments made by NIOSH, OSHA or the Department of Energy with regards to staying with the forklift truck in the event of a tip-over, going over the dock or side collisions are most likely based on the use of high mast forklift trucks. These trucks are wider and apparently offer a "secure" cage in those

events. However, I will not deliberate over standards that do not apply and that should not have been given preponderance in the first place, since the COHS Regulations have superseding specific provisions that address the issue of seat belts. Rather, I will concentrate on analyzing the evidence submitted and deciding the matter by applying that evidence to the applicable provisions of the Code and the pursuant Regulations.

[126] With respect to the CSA standard, which appears to rely on the ANSI standard when recommending staying with the forklift truck in the event of a tip-over, I note that it does not address seat belts specifically but rather references a "restraint system", that includes the winged seat. However, this reference is not limited to the winged seat and could also refer to a more effective restraint system. Regardless, I will apply the same principles in analyzing the evidence as noted above and I will do the same as to the manufacturer's instructions.

[127] With respect to the first part of the issue, I am compelled to take good note of the testimony of Professor Barnett, who declared that the particular type of forklift trucks used by Con-Way at XTN have characteristics that make them dangerous to use with the manufacturer supplied lap seat belts. For example:

- These forklifts trucks are narrow forklift trucks. In such trucks, the torso of the operator extends almost half way on either side, beyond the frame of the forklift, even when the operator holds on firmly to the steering wheel. It should be noted that there are no side protections and that the seat is positioned at the center inside the frame.

- These forklifts trucks have a short mast. In the event of a tip-over, the overturn takes place very quickly, giving the operator little if any time to react. It was shown through a study using stuntmen that the operator could not hold on to the steering wheel even in situations where he expected a tip-over to take place.

- These particular forklift trucks are equipped with winged seats. These seats are considered by the literature among the best on the market because they are more effective in restraining the operator. The winged seat is a restraining device. When used without a seat belt, it will prevent an operator from being crushed by the FOPS in a tip-over incident, but it may not protect the operator from other injuries.

- However, once the winged seat is used in combination with the manufacturer supplied lap seat belt, it gives rise in the event of a tip-over to a phenomenon called the "fly swatter effect". This unusual effect is the direct result of wearing a lap seat belt in combination with a winged seat. In the "fly swatter effect", the head of the operator is

propelled to the floor, in this case is a cement floor, with such speed and force that death or irreparable brain damage will occur. In fact, the study conducted by Professor Barnett shows that the HIC and the SI values are doubled with this combination, which indicates that 100% of the operators cannot survive in those circumstances.

- The purpose of wearing a seat belt is to keep the operator inside the frame of the forklift trucks, where it is believed to be safer in the event of a tip-over, a frontal or side collision or going over a dock or a ramp. In those instances, wearing a seat belt will protect the operator from being struck by or pinned under the FOPS. That is the message conveyed by the various standards considered by the HSO as well as by the manufacturers. However, the same phenomenon, *i.e.* the "fly swatter effect", takes place during those incidents if the winged seat is used in combination with a lap seat belt.

[128] It is clear from the uncontradicted evidence submitted above that Con-Way is justified in not requiring its forklift truck operators to wear the manufacturer supplied lap seat belt on this type of forklift trucks. Requiring the wearing of the manufacturer supplied lap seat belt is contrary to the requirement of section 14.7 of Part XIV of the COHS Regulations, which provides:

> 14.7 Where motorizes materials handling equipment is used under conditions where a seat-belt or shoulder-type strap restraining device is likely to contribute to the safety of the operator or passengers, the materials handling equipment shall be equipped with such a belt or device. (My underline)

[129] With respect to the *Fastfrate* case, *supra*, I am of the opinion that the AO could rely on no empirical evidence to reach a different decision than the one he made. In the instant case however, the empirical evidence clearly establishes that not only is the wearing of the manufacturer supplied lap seat belt not likely to contribute to the safety of the forklift truck operators, but when this particular type of forklift truck is operated over a concrete floor and the lap seat belt is used in combination with a winged seat, these short mast forklift trucks will cause the operator to perish in the event of a tip-over. The injuries sustained by operators in other types of events such as side or frontal collisions or going over the dock would, under the same conditions, also be devastating because of the "fly swatter effect".

[130] Section 14.7 of the COHS Regulations also refers to the use of a shoulder-type strap as another type of restraining device that may contribute to the safety of the operator. However, given the evidence submitted, I would greatly hesitate in directing Con-Way to use any different type of restraining device without proper evidence as to its effect on the health and safety of forklift truck operators in these particular types of forklift trucks. I have no evidence before me indicating that any other

type of restraining device, such as the shoulder-type strap, would be any safer under the current operating conditions. Therefore, the onus is on Con-Way to show that it has put in place adequate safety measures to protect the health and safety of the forklift truck operators not wearing the manufacturer supplied lap seat belts.

[131] For these reasons, I will proceed with analyzing the second part of the issue before me.

[132] Mr. Snyder has submitted that Con-Way has instituted safety features that constitute the *margins of error* that will allow the forklift truck operators to work safely without having to wear the manufacturer supplied lap seat belts. Strictly for the purposes of my analysis, I am dividing these safety features in the following health and safety categories, *i.e.* policy, educational, environmental and procedural features.

Policy features

[133] Mr. Snyder has submitted that not only does Con-Way comply with the Code, but it is truly committed to health and safety. The company has a Corporate Constitution which puts safety at the forefront of its core values because it believes that safety is its number one concern. It has gone the extra step of developing its own handbook on driver safety and the efficient operation of forklifts. It has put in place a system for identifying and resolving work place related issues. For example, Con-Way has on the dock a freight supervisor who enforces company policies and who deals with immediate problems either directly with the employee or with the health and safety committee representative; it has a progressive disciplinary system which is complemented by an Employee Recognition Process in support of the core values of Con-Way; it sits on the health and safety committee and listens to and acts on its recommendations.

[134] Mr. Morrow has testified that the training program at Con-Way is incomparable to any other he is aware of. After observing the operations at XTN, Professor Barnett has testified that the company has a superb safety program. Finally, the HSO may have unknowingly added weight to Mr. Morrow's assertion that Con-Way is serious about its policies when she testified that she did not observe any condition in contravention of the Code or the COHS Regulations that could result in tip-overs or collisions. Furthermore, she reported that she observed that an important safety measure at XTN was being adhered to. She wrote:

> We were watching dock operations from outside. <u>All trailers were chocked</u>.
> (My underline)

Although this is not by itself a measure of the quality of Con-Way's hazard control program[14], it is nonetheless one indicator that that program is in effect at Con-Way. Since the HSO has provided no specific information with respect to the quality of the program other than an observation that the forklifts truck drivers were not wearing their seat belts, I must rely on the evidence before me to evaluate the quality of the hazard control program at Con-Way.

[135] Given all the above, I am satisfied that Con-Way is serious about health and safety and that it takes the necessary steps to ensure its employees adhere to its health and safety policies.

Educational features

[136] All Con-Way forklift truck operators must apply the Smith system for driver training, which is an advanced driver training program. All operators at Con-Way must also be Class "A" drivers under the MOT. The training program includes both a comprehensive classroom segment and a detailed practical segment. High standards are applied to both segments in order to be certified as a Con-Way forklift truck operator. For example, the passing grade for the classroom segment is 80% and it is 100% for the practical segment. Failing any component of the practical segment means that the operator must repeat the training until passing. Only after obtaining the passing grade on the classroom segment and a perfect score on the practical segment will the operator be issued a certification card to allow him to drive Con-Way's forklift trucks. Furthermore, all operators must be recertified on an annual basis and no one is permitted to drive a forklift truck unless recertified.

[137] At Con-Way, the training is not limited to the manufacturer's instructions, as Mr. Snyder suggested they were in *Fastfrate, supra*. Training has been designed to take into account the specific conditions at the XTN work place, as required by paragraph 14.23(1)(*c*) of the COSH Regulations, which provides:

> 14.23(1) Subject to subsection (2), every employer shall ensure that every operator of motorized materials handling equipment has been instructed and trained in the procedures to be followed for
>
> (*c*) its safe and proper use, in accordance with any instructions provided by the manufacturer **and** taking into account the conditions of the work place in which the operator will operate the materials handling equipment.
>
> (My underline)

[14] I am using this expression loosely in the text as a reference to any group of preventive measures that are intended to control hazards in the work place. Also, it is by no means a reference to the prescribed Hazard Prevention Program, which is more elaborate.

Hence, the training at the Con-Way work place includes reading and reviewing the *Driver's Handbook on the Safe and Efficient Operation* of *Forklifts and Freight Handling,* which was specifically developed for Con-Way, observing a forklift demonstration, watching a video, demonstrating basic forklift knowledge and skills, reviewing six scenarios and, most importantly, reviewing all forklift safety and operations procedures with employees as they apply to XTN. Also, with respect to the freight that operators are expected to handle, the *Freight Handling* orientation manual addresses training with respect to Freight Handling Tools, the Forklift, Situations for Discussion, Working on the Con-Way Dock and Loading Procedures. Clearly, all of this training amounts to a comprehensive forklift training program that takes into account not only the limited instructions of the manufacturer but also the prescribed procedures for the safe and proper use of the CON-Way forklift trucks operated under the XTN work place conditions.

[138] In my opinion, the training program at Con-Way is high quality forklift truck training.

Environmental features

[139] The physical environment where operators work at XTN has been described in detail and will not be repeated here. Basically, there are no physical conditions in the XTN work place that would facilitate tip-overs or collisions. Also, the design of these short mast forklift trucks, which are not prone to tip-overs, permits good visibility, including forward visibility when freight is being transported. That, according to Professor Barnett, is the safest method of transporting material with forklift trucks. The mere fact that the freight is being moved at two to three inches off the floor further negates the possibility of tip-overs. Notwithstanding this and of particular importance to this case is the fact the floor at XTN is a concrete floor. Professor Barnett stated that the "fly swatter effect", resulting from the combination of the winged seat with the lap seat belt supplied by the manufacturer, is maximized over a concrete floor in the event of a tip-over. In other words, the fact that the operator's head is smashed over a concrete floor rather than a more forgiving surface such as soil, or sod is what causes the operator to perish in the event of a tip-over.

[140] Therefore, it is Professor Barnett's recommendation, as well as that of the health and safety committee, that the manufacturer supplied lap seat belt not be worn when operating this particular type of forklift truck over a concrete surface. If operators do and a tip-over occurs, the possibility of dying as a result of the "fly swatter effect" is overwhelming. I cannot ignore that this situation exists and neither can I order the employer to require that the operators wear the manufacturer supplied lap seat belt.

[141] Therefore, I agree with the recommendation without any reservation. Con-Way drivers should not be required, as specified by the direction issued by the HSO, to wear the manufacturer supplied lap seat belt while operating their forklift trucks over a concrete floor.

Procedural features

[142] Firstly, it should be noted that, unlike the *Fastfrate* case, *supra*, "early departures" and "trailer creep" are not an issue in the instant case. The HSO did not observe or report any of those hazardous situations and there is no evidence before me that would lead me to believe that they represent a problem at Con-Way. Mr. Morrow has testified that such situations do not exist at Con-Way. Furthermore, Mr. Morrow testified that the loading protocol ensures that these situations do not occur.

[143] I am satisfied that the hazardous situations involving "early departures" and "trailer creep" are under control at the XTN dock. In any event and in the words of Mr. Snyder, "even if that was a concern in this case, the empirical evidence before this AO is that being strapped in a winged seat and going over the dock is not going to serve your purposes. It is going to exacerbate the injury." I am satisfied that compliance with the protocol to prevent these hazardous situations from occurring is, as Mr. Morrow has testified, engrained in the drivers. I am further satisfied that any instance of non compliance will be met with progressive disciplinary measures.

[144] However, I am concerned that when the winged seat is used without a seat belt, the winged seat will, as it has been shown above, prevent an operator from being crushed by the FOPS in a tip-over incident but may not protect the operator from other injuries. The same is true for frontal or lateral collisions and for going over the dock. For example:

- The studies that Professor Barnett conducted on the forklifts trucks, with only the winged seat used without the seat belt have shown that the operator's head or torso was never pinned underneath the overhead guard. Although it did happen that the operator's head would hit the overhead guard inside the forklift when thrown around during the various tests performed, the operator was never crushed by the overhead guard when wearing the unbelted winged seat.

- Regarding the 2001 incident that occurred to a Con-Way forklift truck operator, *i.e.* a sudden stop that caused him to hit the front protective metal grille, Mr. Morrow testified that the lap seat belt would not have prevented the injuries to the operator given the proximity of the grille to his head (see Exhibit A-23, photographs 3 to 7). The injuries that he sustained, which required medical attention, are described in the Injury

Detail document (Exhibit A-23, Tab 7), under Injury Description, as follows:

> DRIVING FORKS WERE DOWN. HIT XTN DOCK PLATE EDGE (RAISED) WHILE DRIVING DSR[15]. WENT HEAD FIRST INTO STEEL CAGE OF FORK. LASCERATIONS (MULTIPLE UNDER AND ABOVE EYES AND EYEBROWS). EMPLOYEES (sic) GLASSES BROKEN POSSIBLE CONCUSSION
>
> Although it turned out that Mr. Savickas did not suffer serious injuries, the injuries that he sustained required clinical/hospital remedies.

- With respect to frontal collisions such as the forks hitting a wall or a dock plate and causing a sudden stop, Professor Barnett said that if you do not have a seat belt on, you translate forward and you smash into the steel meshes that are on the forklift. Evidently, not wearing some form of seat belt or other type of restraining device, other than the winged seat, will cause the operator to be injured in some other ways. These injuries have the potential of being serious injuries.

- Professor Barnett has acknowledged that complications can occur in situations where the operators shift mistakenly in reverse rather than forward. He admitted that "in those situations, you need a passive system to save you because there is no active system that is going into effect fast enough." This is just another one of the possible scenarios that must be taken into consideration when attempting to protect the operator from possible injuries.

[145] Professor Barnett has testified that tip-overs are not an issue at Con-Way. In fact, Professor Barnett explained that they are such a rare event in the industry itself that they are considered statistically as a novel event. The AFR calculated by Professor Barnett is so low that, when compared to the statistics of industries using machinery, he concluded, as I would, that tip-overs practically never happen. In light of this, I agree that tip-overs are truly rare. Nonetheless, they cannot be ignored. Neither can I ignore that frontal or lateral collisions can and do happen, as shown above. Going over the dock is also a reasonable possibility given that mechanical failure such as brake failure can happen.

[146] I have accepted that the manufacturer supplied lap seat belt should not be used, as submitted by Mr. Snyder, because of the injuries that would be sustained as a result of the "fly swatter effect", in the event of the incidents described above. Hence Mr. Snyder's arguments are indicative that these incidents can reasonably be expected to occur notwithstanding the measures taken by the employer to prevent them from occurring. The end result is that they cannot be ignored and therefore, measures must be taken to protect against them.

---

[15] DSR stands for Driver/Sales Representative Regular

[147] Professor Barnett has suggested that jumping off a vehicle in motion is possibly the most sensible thing to do if the operator knows he is heading for a mischief. While I do not necessarily disagree with Professor Barnett on this point, I note that section 14.32 of the COHS Regulations does not institute jumping off a forklift truck as a safety measure. It reads:

> 14.32 Except in the case of an emergency, no employee shall get on or off of motorized or manual materials handling equipment while it is in motion.

[148] In my opinion, the legislator has anticipated that, under certain exceptional circumstances, the driver of a forklift truck may have to exit quickly, such as jumping off of the vehicle while it is moving. We should keep in mind that this only happens in an emergency and that the chances of surviving such a jump must outweigh the devastating injuries that are likely to be sustained by staying in the cab of the forklift truck. Presumably, an employee would choose to jump off a vehicle in motion if he knew that he could not survive otherwise. That was the case of the dock workers in California who made representations against wearing of seat belts on their forklift trucks. They testified that when their forklift trucks go over the dock and into the "Gate" river, if they have their seat belt on, they are dragged down with their truck to the bottom of the river where they are likely to drown. Under such circumstances, jumping off their forklift truck appears to me to be a reasonable option, and possibly the only option.

[149] The bottom line here is that, if jumping off from a moving forklift truck is going to save one's life, health or safety, then the COHS Regulations do not prohibit one from doing this. In the end, common sense would dictate to do whatever is necessary to protect oneself. However, this would not and should not be instituted as an ongoing safety measure by Con-Way to protect forklift truck drivers.

Conclusion

[150] I am of the opinion that, contrary to the direction issued by HSO Mordaunt, Con-Way forklift truck operators should not be required to wear the manufacturer supplied lap seat belt. My decision therefore applies to the narrow type, short mast Toyota forklift truck equipped with a winged seat and a lap seat belt as supplied by the manufacturer and operated at XTN over a concrete floor.

[151] Therefore, in accordance with paragraph 146.1(1)(*a*) of the Code, I will vary the direction issued on December 19, 2006 by HSO Kim Mordaunt under subsection 145(1) of the Code, by removing the following reference from the direction:

> The employer has failed to ensure their forklift drivers are wearing the manufacturer supplied seatbelt/restraining device while operating their forklift trucks.

Furthermore, I will replace it with the reference to the risk assessment described hereafter

[152] It has been shown that the winged seat will not protect the operator from other injuries in the event of a tip-over, a frontal or lateral collision, or going over the dock. Hence, the contravention to section 124 of the Code is maintained since one cannot eliminate a risk of injury and create another one by this action. Therefore, I will direct Con-Way, in accordance with subsection 145(1) of the Code, to carry out a risk assessment of the operation of the above forklift trucks with the purpose of putting in place measures that will ensure that the health and safety of Con-Way's forklift truck operators are protected.

[153] The employer, Con-Way, will also be required to report to health and safety officer Kim Mordaunt or any other health and safety officer, within 10 days of receiving this decision, on the measures taken to comply with the direction.

[154] Furthermore, pursuant to subsection 145(5) of the Code, the employer shall without delay cause a copy of this decision and accompanying direction to be posted and give a copy of it to the policy committee and to the work place committee or the health and safety representative.

Serge Cadieux
Appeals Officer

Case No: 2007-002
Decision No CAO-07-043

IN THE MATTER OF THE *CANADA LABOUR CODE*, PART II, OCCUPATIONAL HEALTH AND SAFETY

On August 29, 2006 and on December 19, 2006, health and safety officer Kim Mordaunt conducted a scheduled inspection in the work place operated by Con-way Freight-Canada Inc., being an employer subject to the *Canada Labour Code*, Part II, at 5425 Dixie Road, Room 202, Door #80, Mississauga, Ontario, L4W 1E6, the said work place being sometimes known as Con-Way Freight-Canada Inc. Following this inspection, the health and safety officer issued on December 19, 2006 a direction to the employer under subsection 145(1) of the *Canada Labour Code*, Part II.

Further to an appeal of the direction timely brought under subsection 146(1) of the *Canada Labour Code*, Part II, the undersigned Appeals Officer, pursuant to subsection 146.1(1) of the *Canada Labour Code*, Part II, inquired into the circumstances of the direction issued by health and safety officer Mordaunt.

Having analysed the circumstances, the facts, the provisions of the *Canada Labour Code*, Part II, and the relevant case law, the undersigned Appeals Officer, varies the said direction as follows, pursuant to paragraph 146.1(1)(*a*) of the *Canada Labour Code,* Part II:

DIRECTION ISSUED UNDER SUBSECTION 145(1) TO Con-way Freight-Canada Inc., 5425 Dixie Road, Room 202, Door #80, Mississauga, Ontario, L4W 1E6

The said Appeals Officer is of the opinion that the following provision of the *Canada Labour Code*, Part II, is being contravened:

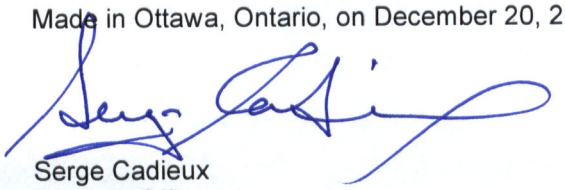
> Section 124. Every employer shall ensure that the safety and health at work of every person employed by the employer is protected.

It has been shown that when the winged seat is used without the manufacturer supplied lap seat belt on the narrow type, short mast Toyota forklift truck, it will protect the operator from being crushed by the falling objects protection structure but will not from other injuries in the event of a tip-over, frontal or lateral collisions or going over the dock.

Therefore, you are HEREBY DIRECTED, pursuant to paragraph 145(1)(*b*) of the *Canada Labour Code*, Part II, to carry out a risk assessment of the operation of the above forklift trucks with the purpose of putting in place measures that will ensure that the health and safety of Con-Way's forklift truck operators are protected.

Furthermore, you are also required to report to health and safety officer Kim Mordaunt or another health and safety officer, within 10 days of receiving the present decision, on the measures taken to comply with the present direction.

Made in Ottawa, Ontario, on December 20, 2007



Serge Cadieux
Appeals Officer