

CANADA LABOUR CODE
PART II
OCCUPATIONAL SAFETY AND HEALTH

Review under section 146 of Part II of the
Canada Labour Code of a direction issued
by a safety officer

Applicant: Air Alliance
Val D'Or, Quebec
Represented by: Jacques Gagnon
Customer Service

Interested Party: Safety and Health Committee
Represented by: Bruno CrJpeault
Employee Representative

Mis-en-cause: Denis Caron
Safety Officer
Human Resources Development

Before: Serge Cadieux
Regional Safety Officer
Human Resources Development

The oral evidence was heard in Val D'Or, Quebec, on January 26, 1994.

Summary of facts

On September 28, 1993, Bruno CrJpeault, an employee representative on the safety and health committee of the company Air Alliance, at Val D'Or Airport, filed a written complaint with Human Resources Development Canada (one of the components of this Department used to be known as Labour Canada). He requested that a safety officer visit the premises and conduct an investigation to determine whether the situation in question constituted a real danger. Mr CrJpeault's letter, which offers an excellent description of the circumstances and the grounds for his complaint, is reproduced below in its virtual entirety:

We are an airline that operates DASH-8 Series-100 planes. When these planes are on the ground, either here in Val D'Or or somewhere else, and the engines are not operating, it is necessary to feed an electrical current into the aircraft so that certain essential functions (*eg* lighting and communications systems) can remain operational.

In addition, a substantial amount of electrical energy is essential to operate (*ie* start up) the aircraft's two engines.

This electricity is supplied by a GPU (Ground Power Unit). The GPU is actually a strong battery that we have to wheel into place on the runway according to the aircraft's position during stop-over.

The GPU is supplied directly from the air terminal by means of a cable measuring approximately 150 feet--which I will call cable [A]--that is connected to a plug sticking up about two feet from the surface. This plug is the intermediary for the underground external feed.

The current supplied to the aircraft is fed by another cable (cable [B]) from the GPU. Cable [B] transmits electricity only when the ramp agent (one of our employees) turns the GPU switch to the ON position, which is done only with the agreement and approval of the pilot. As soon as the aircraft is ready to leave the ramp, the agent waits for the signal from the pilot to cut the power supply.

So the problem is as follows: while it is possible, and even mandatory, to cut the current in cable [B] (from the GPU to the plane) when there is no need for it, it is impossible to cut the very powerful current from the source (the plug sticking out of the ground) to the GPU through cable [A].

What's more, when the GPU is wheeled on the runway, cable [A] is dragged, pulled and rubbed against the asphalt, which in all likelihood results in future wear. The weather conditions in which agents work are often unsafe when it comes to handling high-voltage electrical equipment; water and snow are two obvious examples. They have to manually unwind or wind back cable [A], sometimes in the rain, and so a gash in this cable could cause a catastrophe.

Having consulted with the official in charge at Val D'Or and with the ramp agents, I feel it would be safer and more farsighted to install a switch at the power source itself: the plug, where it sticks up from the ground. This way, the current would not run non-stop, 24 hours a day in cable [A], which is subject directly to every type of poor weather condition. The employees would never have to handle this cable when a current is running through it. The switch would be turned on only when the current is ready to be transmitted into the aircraft, with cable [B] properly in place.

As representative for the Val D'Or station in CSST meetings at the head office in Quebec City, I saw this proposal turned down a few months ago for lack of evidence that the situation constituted a danger.

Safety officer Denis Caron was assigned to conduct an investigation. On November 5, 1993, he inspected the work place where the GPU is located. The safety officer took photographs and checked the live cable connecting the GPU with the location where this cable enters the ground (cable [A]). He noted the presence of cracks and wear on the cable. He also observed that the

cable drags on the ground in water and snow and that there is no way to cut the current. The employees told the officer that they are very afraid of handling the cable, which is always live. Mr Caron also inquired about the training received by the employees with respect to the safe operation of the GPU device, and confirmed that they had received no specific training.

Based on all this information, the safety officer felt that the situation constituted a danger for the employees who had to handle this live cable. In his opinion, there was a risk of electrocution. Consequently, the safety officer issued a direction to the employer under paragraph 145(2)(a) of the Canada Labour Code, Part II. The partial text of the direction is as follows:

The said safety officer considers that the use of a thing constitutes a danger to employees while at work:

1. Pending the installation of a circuit breaker system between the power supply and the Transformer Rectifier - GPU400, there are no written work procedures for employees to use it safely. This constitutes a risk of electrocution for employees required to use it.
2. The #10 electrical cable for the Transformer Rectifier - GPU400 used between the power supply and the equipment is dried out and worn in several places, and drags on the ground in water and snow. This constitutes a risk of electrocution for employees required to use it.
3. Employees required to use the Transformer Rectifier - GPU400 have received no training with respect to its use or operation. This constitutes a risk of electrocution for employees required to use it.

Therefore, you are **HEREBY DIRECTED**, pursuant to paragraph 145(2)(a) of the Canada Labour Code, Part II, to take immediate measures for guarding the source of the danger.

Evidence by the employer

Mr Gagnon requested a review of the direction because the device in question, the GPU, was purchased and installed by specialists according to the manufacturer's instructions. There have never been any incidents involving the device, which, according to him, was designed to withstand the specific conditions found at airports. The specialists who installed it never indicated that a circuit breaker, as specified in the direction, was needed to cut the power. Furthermore, almost immediately after the direction was issued by the safety officer, the original cable was replaced and then inspected. Mr Gagnon claims that the inspection found no trace of premature wear or significant damage to the insulation.

While Mr Gagnon recognizes that there is an inherent risk in handling a live cable, he maintains that such a risk exists everywhere, since this type of device is commonly used in airports. If Air Alliance is required to install a circuit breaker, all other airports should have to as well, he reasons.

As for the question of employee training, Mr Gagnon stated the following in a letter to Mr Caron dated November 22, 1993:

When the device was delivered to Val D'Or, the employees on duty were given instructions on how to use it and told to pass this information on to the rest of the ramp crew. Furthermore, our entire ramp staff had already been operating a gas-powered GPU for the same purpose (*ie* aircraft takeoff).

Evidence by the employees

Mr CrJpeault claims that the employees were not trained in the use of the GPU. The problem lies not so much in the ordinary operation--the employees are well acquainted with this by virtue of their considerable experience; rather, it is the emergency procedure to be followed in the event of a catastrophe that the employer failed to demonstrate to the employees. For example, what should be done in the event of fire? No one knows for sure, since the employees were not trained to deal with such situations.

According to Mr CrJpeault, "you have to be prepared for the most likely dangers". Employees have to use their hands to unwind the cable when wheeling the GPU towards the aircraft; in so doing, they run the risk of being electrocuted. The circuit breaker eliminates that possibility.

Decision

Having considered the testimony of the parties involved and the complaint by Mr CrJpeault, I feel that the question at issue in this case is the following: was there, on the day of Mr Caron's investigation, a situation constituting a danger to ramp employees who had to handle the live cable? I must also consider the question of training. However, I feel that this is secondary to the question at issue, since the safety officer linked it directly to the existence of a danger.

To answer the question, I must refer to the definition of "danger" found in subsection 122(1) of the Canada Labour Code, Part II:

"danger" means any hazard or condition that could reasonably be expected to cause injury or illness to a person exposed thereto before the hazard or condition can be corrected.

The safety officer concluded, on the basis of the information available to him on November 5, 1993, that the risk of electrocution was sufficiently serious and real that he had to intervene immediately; otherwise, in all likelihood, the employees would be injured. I can neither blame nor criticize the safety officer for his decision. That is precisely his role: to decide, based on the information available to him at the time of the investigation, whether a danger exists. *Where a safety officer considers, under subsection 145(2) of the Code, that the use or operation of a machine or thing or a condition in any place constitutes a danger to an employee, he must issue directions to protect any person from the danger.* As far as I am concerned, that is what the safety officer did in this situation.

If, during a review of the safety officer's direction and, hence, of his decision that a danger exists, it emerges that he erred, it is up to the regional safety officer to remedy the situation in accordance with section 146 of the Code. In light of the explanations and facts submitted to me, I have concluded that the safety officer erred in this case.

In the case at hand, I feel that the risk of electrocution could materialize, insofar as the conditions necessary for this to transpire do exist. In fact, there is an inherent risk in working with any equipment powered by electricity. Thus, whenever a person handles a live cable or operates some type of electrical device, he is exposing himself to the possibility of electrocution simply by virtue of the presence of electricity in the cable or device used. However, this risk is, generally speaking, so minor and remote that it could not reasonably be expected to cause injury to the persons exposed to it. This is due in part to the design of the electrical equipment, which must meet very stringent standards such as the Canadian Electrical Code, the safety devices incorporated into the equipment and work methods that take into account the hazard posed by any electrical equipment.

In the case at hand, I feel that, for all intents and purposes, the possibility was almost nil that an employee could be electrocuted by handling the cable in question, because the conditions at the time were incapable of producing an electrical discharge. Only a hazard that could reasonably be expected to cause injury to the employee exposed to it, before the hazard can be corrected, constitutes a danger. Consequently, in the case at hand, the possible (but exceedingly remote) risk of electrocution does not constitute a danger, as defined in the Code. There are a number of facts and reasons that support this conclusion.

Although the safety officer felt that the cable was worn and cracked, he did not consider or demonstrate the degree of wear or the actual extent of the cracks. In fact, based on the photographs taken by the safety officer, I am sceptical of his claim regarding the cable, since the cracks are barely perceptible--which leads me to believe that they were superficial. As for the wear and dryness of the cable, these are not apparent from the photographs. The mere fact that the cable, designed to withstand any poor weather conditions that may arise, was somewhat cracked, worn or dried out is clearly insufficient, in light of the principles of electricity, to conclude that the situation was conducive to electrocution, even in the presence of water. The conducting wire transmitting the electrical charge would have had to be exposed, which was clearly not the case. In reality, a multitude of factors need to exist for a situation to constitute a danger, as defined in the Code. It is impossible for me to deal here with the many conditions that must exist before the possible risk of electrocution can become a "hazard that could reasonably be expected to cause injury to a person exposed thereto before the hazard can be corrected".

There is another very important point that I must take into account, one that runs counter to the results of the inspection carried out by the safety officer. Following a more thorough inspection, the employer contradicted the safety officer's claim regarding the cable. Mr Gagnon maintains that no trace of premature wear or significant damage to the insulation was found on the original cable. The employer had all the equipment inspected by a specialist, a master electrician, who provided written assurance that it was in conformity with the Canadian Electrical Code. Even without this assurance, I must acknowledge that the device, including the cable, was designed to comply with the Canadian Electrical Code. This makes it a highly safe device, capable of withstanding the

most severe operating conditions. It should also be pointed out that the ramp agents are not required to plug in and unplug the live cable. They only have to unwind it in order to wheel the GPU towards the aircraft.

I must also take into account the fact that the parties agreed that there have never been any accidents, either at the Val D'Or station or any other station, involving the handling of the cable or the operation of the GPU. This is a very important point, as it demonstrates the resistance and reliability of the equipment even when exposed to the poor conditions found at Canadian airports.

All these facts run counter to the decision made by the safety officer and are, in my opinion, very persuasive.

I feel that it was actually the fear of handling a live cable, even a properly designed and insulated one, that motivated the employees in the case at hand. In my opinion, this fear is the result of a lack of understanding of the principles of electricity. Clearly, the employer would have done well to call in an electrical specialist to explain to the employees the conditions that would need to exist before a risk of electrocution could reasonably be expected to cause injury, as well as the regular precautions that should be taken to ensure that such a risk does not materialize. The employer did not do this; as a result, a safety officer had to make--on the basis of a brief inspection--a determination as to the existence of a danger. The safety officer erred on the side of prevention, which I feel was reasonable under the circumstances.

Upon review of the direction and the testimony provided by the parties at the hearing, it appears that the safety officer ordered the installation of a circuit breaker on a pole near the point where the cable enters the ground. If the effect of this mushroom-shaped circuit breaker is to prevent the current from flowing when it is activated a first time, and to enable the current to flow when it is reactivated, this device would eliminate at the source any possible risk of electrocution and would thus constitute the ideal solution. However, contrary to the opinion of the safety officer, who invoked the possible application of section 8.23 of Part VIII (Electrical Safety) of the Canada Occupational Safety and Health Regulations, there is nothing in the Code or the Regulations that requires the installation of a circuit breaker to be used to cut the current at will.

I do not share the opinion expressed by the safety officer at the hearing that the ramp agents had not received the training provided for under subsection 8.5(1) of the Regulations and were therefore in a situation that constituted a danger. First of all, I do not think that this provision applies in this case, since the employees in question neither maintain nor repair the equipment and, consequently, are not required to work with live conductors. Second of all, lack of special training on GPUs does not in and of itself constitute a source of danger, since the ramp agents had operated similar devices in the past and had operated the GPU for quite some time, without incident. This shows that these employees, thanks to the fact that the GPU is very easy to operate and the rudimentary training received in the work place, operated the equipment in complete safety during all those years.

The safety officer could have determined that another provision of the Code and of the Regulations had been contravened, without necessarily concluding that a danger existed. For example, the Code and the Regulations contain specific provisions on training and information. However, I am

unable, under section 146 of the Code, to take the place of the safety officer and issue a new direction to the employer under subsection 145(1) of the Code. The sole focus of my inquiry must be the direction issued by the safety officer, and I can only vary, confirm or rescind it, as stipulated in section 146 of the Code.

As for the employees' apprehension regarding an emergency situation, the safety and health committee is duly authorized to discuss this subject and to make whatever recommendations it considers appropriate and necessary. I have no doubt that the safety officer would be available to offer the employees guidance in their search for solutions to this problem. However, since this would involve the prevention of a potential incident, I cannot deal with it in this decision.

In conclusion, I consider that--contrary to the opinion expressed by the safety officer following his investigation--a danger did not exist at Val D'Or Airport. For all the above reasons, I hereby rescind the direction issued on November 9, 1993 by safety officer Denis Caron to Air Alliance.

Decision rendered this February 15, 1994

Serge Cadieux
Regional Safety Officer