



TRANSPORTATION APPEAL TRIBUNAL OF CANADA

Citation: *Canadian Pacific Railway Company v. Canada (Minister of Transport)*,
2022 TATCE 4 (Review)

TATC File No.: RO-0045-41

Sector: Rail

BETWEEN:

Canadian Pacific Railway Company, Applicant

- and -

Canada (Minister of Transport), Respondent

Heard by: Videoconference from June 7 to June 11, 2021

Before: Raymon Kaduck, Member

Rendered: January 21, 2022

REVIEW DETERMINATION AND REASONS

Held: The violation and the administrative monetary penalty are upheld. The Minister of Transport has proven, on a balance of probabilities, that the applicant violated section 17.2 of the *Railway Safety Act*.

The total amount of \$74,800 is payable to the Receiver General for Canada and must be received by the Transportation Appeal Tribunal of Canada within 35 days of service of this determination.

I. BACKGROUND

[1] By Notice of Violation – Contravention of Designated Provision – Issuance of Monetary Penalty (Rail Safety) (Notice of Violation) dated April 29, 2020, Transport Canada (TC) assessed a monetary penalty of \$74,800 against Canadian Pacific Railway Company (CP). Schedule A to the Notice of Violation stated:

On or about May 11, 2019, in or near Thunder Bay, Ontario, Canadian Pacific Railway Company operated railway equipment on a railway otherwise than in accordance with Rule 439 of the Canadian Rail Operating Rules that apply to Canadian Pacific Railway, when its employees failed to stop a movement at Signal 1219 on the Nipigon subdivision displaying Stop, thereby violating section 17.2 of the Railway Safety Act.

[2] On May 29, 2020, CP made a request for review to the Transportation Appeal Tribunal of Canada (Tribunal).

II. ANALYSIS

A. Issues

[3] The Tribunal must determine whether CP failed to stop a movement, in violation of section 17.2 of the *Railway Safety Act (RSA)*. If that is found to be the case, the Tribunal must also determine whether CP has met the defence of due diligence set out in *R. v. Sault Ste. Marie*, [1978] 2 SCR 1299 (*Sault Ste. Marie*).

B. Legal framework

[4] Section 17.2 of the *RSA* provides:

17.2 No railway company shall operate or maintain a railway, including any railway work or railway equipment, and no local railway company shall operate railway equipment on a railway, otherwise than in accordance with a railway operating certificate and — except to the extent that the company is exempt from their application under section 22 or 22.1 — with the regulations and the rules made under sections 19 and 20 that apply to the company.

[5] It is alleged that CP failed to comply with Rule 439 of the *Canadian Rail Operating Rules (CROR)*. This rule requires a rail company to stop at least 300 feet in advance of the STOP signal unless the movement has been authorized by Rule 564 or unless required to clear a switch, crossing, controlled location, or spotting passenger equipment on station platforms.

[6] Paragraph (a) of Rule 564, Authority to Pass Stop Signal, provides that a train or transfer must have authority to pass a block signal indicating Stop.

[7] Pursuant to subsection 40.16(4) of the *RSA*, the burden is on the Minister of Transport (Minister) to prove the violation. The standard of proof is on the balance of probabilities, as per subsection 15(5) of the *Transportation Appeal Tribunal of Canada Act*.

C. Did CP violate section 17.2 of the RSA?

Did the Minister prove the violation?

[8] The non-compliance is not contested. In fact, counsel for CP argued that CP had effectively made the Minister's case when it reported the non-compliance and admits that the crew of CP Train 101 failed to stop at Signal 1219 and violated *CROR* 439.

[9] Although there was no collision in this case, there is also no disagreement between the parties that this was a serious matter. CP reported the violation to the Transportation Safety Board (TSB) on May 13, 2019, as required by law and, after investigating the matter, suspended both employees for 30 days without pay.

[10] CP admitted the facts of the violation when it reported the incident to the TSB through a Rail Daily Notification Report. The Rail Daily Notification Report dated 2019-05-11 (R19H0086) (Exhibit M-1) clearly indicates that Train 101 "failed to stop for a signal and went past by 1500 feet without proper authority."

[11] Therefore, I find that the Minister has proven, on a balance of probabilities, that CP violated section 17.2 of the *RSA*.

D. Due diligence in this case

[12] With the violation having been proven, the applicant has a defence available set out in *Sault Ste. Marie* at page 1331. This will be referred to as the defence of due diligence:

Where an employer is charged in respect of an act committed by an employee acting in the course of employment, the question will be whether the act took place without the accused's direction or approval, thus negating wilful involvement of the accused, and whether the accused exercised all reasonable care by establishing a proper system to prevent commission of the offence and by taking reasonable steps to ensure the effective operation of the system. The availability of the defence to a corporation will depend on whether such due diligence was taken by those who are the directing mind and will of the corporation, whose acts are therefore in law the acts of the corporation itself.

[13] The burden for proving due diligence lies entirely on CP, which in this case requires that CP prove it took all reasonable care to prevent commission of the specific offence. The Minister may challenge evidence or testimony. The parties debated the relevance of past similar offences but, aside from using them tangentially to calculate the penalty, I have restricted the analysis of due diligence to the defence presented in this case.

(1) *Nature and location of the error that led to the violation*

[14] While the violation occurred when the train passed Signal 1219, the event that led to the violation took place at the previous signal for the train's direction of travel. It is also uncontested that the proximate causes were that the engineer improperly identified the Clear to Stop warning at the previous signal (variously described in testimony, but hereafter Signal 118.5), believing he had an Advance Clear to Stop indication and that the conductor failed to identify the indication and confirm it with his crew member as was required. The effect was that when the crew saw the stop signal at Signal 1219, it was no longer possible to bring the train to a halt 300 feet in

advance of the signal as required by Rule 439, and the train ran 1,500 feet past the signal on track that was protected for another train.

[15] The defence of due diligence presented by CP was that it had taken all reasonable care to prevent the crew errors at Signal 118.5 that led to the violation at Signal 1219.

(2) *Positions of the parties*

[16] As previously mentioned, the burden of proving due diligence rests entirely on CP. The company argues that the training given to the crew was adequate and this is a matter of human error that it could not have prevented. CP contended that the evidence and testimony brought before the Tribunal is sufficient to meet the *Sault Ste. Marie* due diligence requirements. It argued that the test does not require perfection, but simply that it had taken all reasonable measures to establish an effective system to prevent such occurrences. CP further argued that to impose too high a standard would be tantamount to elevating this matter from a strict liability offence to one of absolute liability.

[17] CP argued that it has produced credible witnesses who were consistent in their testimony and that the detailed accounts they provided are sufficient to demonstrate that the company has specific programs in place and additional measures “woven into” its operations, by which it means that “it’s covered in every aspect of the company’s approach to safety and training.” These measures, taken together, meet the requirements of the *Sault Ste. Marie* due diligence test. It also argued it had taken specific measures related to Crew Resource Management (CRM) training, which was the major focus of testimony.

[18] In contrast, TC argued that the evidence is insufficient to conclude that CP had “exercised all reasonable care by establishing a proper system to prevent commission of the offence and by taking reasonable steps to ensure the effective operation of the system.”

[19] It contended that the safety measures presented by CP were inadequate to prevent the violation. In particular, the Minister argued that the CRM training, which CP relies upon for its due diligence argument, was not sufficient. This matter is comprehensively discussed below in section 5: *Analysis of CP’s due diligence defence*.

[20] With respect to interpreting the due diligence defence, CP argued the standard at para. 99 in *R. v. Syncrude Canada Ltd.*, 2010 ABPC 229 (*Syncrude*), should be followed:

[99] To meet the onus, Syncrude is not required to show that it took all possible or imaginable steps to avoid liability. It was not required to achieve a standard of perfection or show superhuman efforts. ...

[21] CP also cited *R. v. Commander Business Furniture Inc.*, [1992] O.J. No. 2904, *R. v. Bata Industries Ltd.*, 1992 CanLII 7721 (ON CJ), and *R. v. Wholesale Travel Group Inc.*, [1991] 3 SCR 154, to similar effect.

[22] In response, the Minister cited *Canadian National Railway Company v. Canada (Attorney General)*, 2020 FC 1119, issued on December 4, 2020, to stand for the proposition that “the defendant must establish that it took all reasonable steps to avoid the particular deficiency that is alleged.”

[23] In other words, while perfection is not expected, CP has a burden to prove that it took all reasonable precautions to avoid the specific offence, a Rule 439 violation. In the context of this hearing, this means to prevent the crew errors that led to the violation.

(3) *Arguments of the parties with respect to previous incidents*

[24] The Minister presented documents related to previous *CROR* 439 violations (Exhibits M-9, M-10 and M-11).

[25] CP objected to mentions of previous similar incidents by TC, arguing that these in no manner bound this tribunal, which should rely only on the facts adduced in this case. I allowed the evidence of previous violations with respect to the Minister's explanation of the rationale and calculation of the administrative monetary penalty (AMP). I explained at the time that the hearing was not an inquiry and any attempt to establish a pattern of behaviour would face a more rigorous test. No further evidence or testimony was put on the record that would allow me to rule on similarities to other cases that would be sufficient for this latter purpose. As detailed below, CP did acknowledge the existence of previous violations and that the TSB was concerned about the persistence of Rule 439 incidents.

[26] CP also argued that the Minister could have provided rebuttal witnesses but did not. The only evidence on due diligence was provided by CP.

(4) *Allegation of institutional bias*

[27] CP argued that the fault lies entirely with the employees and that there is an institutional bias on the part of the regulator, which has the power to charge not only corporations but individuals. It did not do so in this case. Nor did the regulator call the employees involved as witnesses.

[28] Both employees were suspended immediately pending a determination by the company and assessed 30-day suspensions without pay on May 30, 2019, including the time off already served (Exhibits A-2 and A-3). CP witnesses considered this to be at the high end of the discipline scale. CP raised this as evidence that the company recognized the seriousness of the violation and had dealt with it appropriately. The *Hybrid Discipline & Accountability Guidelines* system (Exhibit A-4) states serious offences such as this "may warrant immediate removal from service pending a formal investigation and may warrant suspension or in certain cases, dismissal."

[29] With respect to the allegation of institutional bias, the Minister argued that a 30-day suspension without pay imposed by CP through its hybrid discipline system amounts to a \$12,000 loss for a locomotive engineer and that imposing an additional \$25,000 AMP on the employees would not "fix the issue." Counsel for the Minister also commented that the credibility of CP's witnesses was not in question.

[30] The burden lies entirely on CP to prove that it did meet the *Sault Ste. Marie* test. The Minister is not required to disprove it. Whether or not CP's employees could also have been issued a Notice of Violation is not relevant to the defence of due diligence.

[31] The Minister exercised its discretion to charge the railway in the instant case and all of the evidence presented for the record by both parties properly relates to this case and not a counterfactual approach. In this respect, the level of assessment relates to system level decisions, not simply the crew errors that led to the violation:

The availability of the defence to a corporation will depend on whether such due diligence was taken by those who are the directing mind and will of the corporation, whose acts are therefore in law the acts of the corporation itself.¹

(5) *Analysis of CP's due diligence defence*

[32] The essential matter of this case relates to why an experienced train crew failed to obey a signal that, as the parties agree, was visible and required a slowing of the train at Signal 118.5. The details are drawn from crew interviews conducted by TC inspectors. The questions to be answered here are what specific hazards CP needed to guard against to have taken reasonable care to prevent the violation, and whether it did so. To discover the answer to the first question, it is necessary to detail the events. Once the root causes are identified, it is necessary to analyze whether CP has provided evidence that it took all reasonable care to prevent these causes.

(a) *The events of May 11, 2019*

[33] The two crew members operating Train 101 were Engineer Mario Veneziano and Conductor Shane Joubert. They were both veteran employees, familiar with the equipment, company policies, the *CROR*, the subdivision in question and recently tested on their knowledge of signals.

[34] CP investigated the crew schedules and there is no evidence they were fatigued. The crew members were tested, and alcohol or drug impairment was ruled out as a factor. There was also no evidence presented of overarching stress or other mental impairment for either of them. None of these points was contested by the Minister.

[35] Nor was there any meteorological or other obstruction to vision that prevented the identification of the signal. This is evident from forward facing video footage provided by the company (Exhibit A-12).

[36] Neither of the crew members were called as witnesses by either the company or the Minister, nor did CP provide details of the crew interviews it conducted. The evidentiary record of events in the cab on the day is therefore derived from interviews by TC inspectors on June 18, 2019 (Exhibits M-4 and M-5). This was more than a month after the occurrence.

[37] A Clear to Stop signal tells the crew that the next signal will be a stop. The crew is authorized to proceed, preparing to stop at the next signal. Although there are a variety of forms the signal may take, it always involves a solid yellow light. In this case, the Clear to Stop signal given to Train 101 at Signal 118.5 indicated that Signal 1219 would be a red light requiring the train to halt 300 feet in advance. In addition to the *CROR* requirement, CP has a company-specific rule, a System Special Instruction (SSI), that requires the train speed to be reduced to 30

¹ *Sault Ste. Marie* at page 1331.

mph when a Clear to Stop signal is given, meaning that the train speed should have been reduced from 50 mph, which was normal for that track.

[38] An Advance Clear to Stop indication is the same as Clear to Stop, except the yellow light is flashing. This tells the crew that they may “proceed, prepared to stop at second signal,” meaning that, in this case, Signal 1219 would not be a stop, but the crew had to be prepared to stop at the following signal. This is the indication the crew mistakenly thought they had, which I will detail below. Importantly, this indication (as they perceived it) would not require any specific or immediate reduction of speed in anticipation of a stop at Signal 1219 to comply with the *CROR* and it would not call for commencement of a reduction to 30 mph as required by company SSI as a Clear to Stop would have.

[39] Once the locomotive had passed the misidentified signal, the crew would not have had any further indication of the impending problem until they identified a stop signal at Signal 1219. Engineer Veneziano reported in the interview that he had already commenced braking in anticipation of a Clear to Stop at Signal 1219 and when he identified that the signal was, in fact, STOP, he applied emergency braking. According to his statement, he had already slowed the train to approximately 30 mph when he commenced emergency braking.

[40] Errors by both crew members led to this occurrence. First, from interviews, it is clear that Engineer Veneziano was inattentive and misread the signal. He explained this as being a flashing effect caused by telephone poles beside the track. The locomotive camera video shows that, for whatever reason, there is a flash just after the signal comes into view; however, this occurs only once and the solid yellow indication is obvious until the train passes the signal, a duration of approximately 18 seconds.

[41] However, if the initial flash misled him, this does not explain or justify the failure. The procedure is clear: The *CROR* Rule 34(a) states that “[t]he crew on the controlling engine of any movement . . . must know the indication of each fixed signal (including switches where practicable) before passing it.”

[42] Put simply, the engineer must monitor the signal continuously until it is passed, because it is possible that it may change while it is still visible. So, if he misread the signal, there should have been time to recognize and correct the error.

[43] There is also a fail-safe procedure with a two-person crew. *CROR* Rule 34 states that:

(b) Crew members within physical hearing range must communicate to each other, in a clear and audible manner, the indication by name, of each fixed signal they are required to identify. Each signal affecting their movement must be called out as soon as it is positively identified, but crew members must watch for and promptly communicate and act on any change of indication which may occur.

[44] The conductor is required to independently observe the signal. Whichever crew member sees it first will call out the signal. In this case, Engineer Veneziano claims he saw the indication and called out what he thought he saw. At this point, Conductor Joubert should have looked at the signal, verified that it was the same as the engineer said it was, and confirmed it. If it was not the same, he should have said what he thought it was and the crew should have concurred, or the engineer should have halted the train to seek instruction. According to the interview and

documentary evidence, he was doing paperwork and trying to make out conflicting yarding instructions that would have applied miles ahead in Thunder Bay. He never looked at the signal, but he repeated what the engineer had said. Both crew members were required to monitor the signal until it was passed (Exhibit M-7 and testimony of Mr. Phillips). Had Conductor Joubert looked at it at all, he should have recognized the error while there was still time to correct it.

[45] One factor that is not immediately obvious is that for many miles, Train 101 had been following another train. This meant that they were getting either Clear to Stop or Advance Clear to Stop indications for 100 miles or so. According to Conductor Joubert, they had been trying not to follow Train 113 so closely that they would have to repeatedly slow the train. In his interview with TC, Conductor Joubert stated the following:

From Firehill we followed train 113, we were on his lights and we were trying to pace ourselves for advance clear to stops or clear signals. Out of Mackenzie we were on an advance clear to stop at the west switch at Mackenzie....

[46] Train 101 is a flagship train, meaning that it is a high value multimodal train running from Toronto to Vancouver. Since it is priority cargo and the train ahead seemed to have a problem with a locomotive, the evidence suggests that the yarding instructions were to allow Train 101 to bypass the train it was following at Thunder Bay. As they approached the signal at 118.5, Train 101 was still behind Train 113. The crew was anticipating Advance Clear to Stop, Engineer Veneziano “saw” what he expected to see, and Conductor Joubert did not look, but repeated what the engineer said, because it was what he expected to hear. I will return to the topic of *Theory of the Situation* later.

[47] There was also radio traffic related to yarding instructions and the various instructions were contradictory. This is only relevant in the sense that Conductor Joubert was trying to resolve the instructions at the time he should have been observing the signal. While it added workload and perhaps a small measure of stress, there is little to suggest that it was so complex that it should not be considered part of a normal workload in the circumstances. It is also the case that all CP witnesses agreed that monitoring the signal as required by *CROR* 34 was a higher priority duty than paperwork and that dealing with radio traffic should not have distracted him from observing the signal. Based on the evidence presented, I agree with these assessments.

[48] The radio traffic may also have contributed to the distraction in the sense that Conductor Joubert heard some traffic related to Train 113, and the shops in Thunder Bay may have tended to reinforce his idea that Train 113 was being marshalled to allow Train 101 to pass it, but the details do not matter. His eyes were not on the signals ahead, as they should have been. There is every reason to think it is normal for Conductor Joubert to try to understand and plan for the movements in Thunder Bay yard. No witness really commented upon this, except to say that it did not have priority over observing the signals. The best one can make of this is a problem of *task fixation* on a task that was clearly of lower priority.

[49] The case of Engineer Veneziano is more perplexing. Since the solid yellow aspect was clearly visible for essentially all of the 18 seconds, and since it was his duty, and according to his interview, his practice to monitor the lights correctly, and since he was aware that Train 113 was ahead of him and that the light could change, nothing in the evidence explains what he was actually looking at during that period. If he was properly focused on the light, how could he

misidentify a signal that required him to reduce speed in preparation for a Stop signal at 1219, as required by the *CROR*? And further, to commence reduction in speed to 30 mph prior to passing the signal to comply with a company SSI, which is more restrictive than the *CROR*?

[50] The most obvious explanation was that neither crew member was paying proper attention to the lights at that point. Rather, they were discussing the yarding instructions. In his interview with TC, Conductor Joubert said the following:

We put our handheld to channel four and we called Thunder Bay and there was a lot of confusion with our yarding instructions. During this time of the confusion we went by the approach to Navilus, I don't know if I saw the light but I heard Mario call Advance clear to stop in the cab and that's what I called on the handheld.

[51] In response to interview questions by Inspector Jason Wynne, Engineer Veneziano's answers illustrate that both crew members were distracted:

Q.11 Did the conductor confirm that indication?

A. The conductor was communicating with Thunder Bay at the time regarding arrival into the city. But he did confirm/acknowledge the signal indication in the cab.

Q.12 Was this from the conductor seat and was he looking at paperwork?

A. He was looking towards my vicinity account confusion with the instructions from Thunder Bay.

[52] When asked whether he had anything to add, Engineer Veneziano commented about the telephone poles and flashing mentioned above. Two inspectors were taking notes, Inspector Wynne in person in Schreiber, Ontario, and Inspector Jeff Creighton, who was listening by telephone. There are small differences between their notes. Inspector Wynne's notes (which were reviewed by Engineer Veneziano), read: "Had we not been having the discussion (crossover discussion) I would have been focussing on that light until we went by it." Inspector Creighton's notes (Exhibit A-1) read: "If we had not been in discussion with Thunder Bay we would have been focused and looking ahead at the light."

[53] I am forced to conclude that the most likely explanation, on a balance of probabilities, is that the engineer glanced at the signal and misidentified it, then was in discussion with the conductor until the signal was passed and that neither were following the correct procedure for monitoring but were caught up in discussing the yarding instructions and looking at each other or at documents. There could have been other distractions; however, there is nothing in the record to support this.

[54] The reason I am detailing these apparently small points is not to belabour the mistakes that were made by the crew, but to map them onto the training system implemented, the subject matter of the training system and the training material in the *Crew Resource Management – Participant Guide* (rev. September 2001) (*Participant Guide*) (Exhibit A-7), records of which have been submitted by CP in its defence. The defence of due diligence set out in *Sault Ste. Marie* requires the applicant to prove that it established "a proper system to prevent commission of the offence" and took "reasonable steps to ensure the effective operation of the system."

[55] In other words, the occurrence of the violation is not sufficient in law to prove that the system was ineffective. Sometimes, an applicant will demonstrate that it took all measures that

were reasonable, but an employee ignored a rule purposely, for example, because they did not consider it important. Such is not the case here. The crew members both made mistakes at the same time and it could have had significant consequences, but the record shows that the actions prior to and after the error were consistent with normal railroad operations. The engineer was managing the pace of the train to avoid unnecessary stops or speed reductions. The conductor was planning for events in the yard. Both had been actively and attentively engaged in the operation prior to Signal 118.5 but were distracted by duties of much lower priority.

[56] The point here is that the crew did not consciously disregard their duties, but they did unconsciously do so, and this is the domain of Human Factors. Descriptions from the interviews fit quite well with some of the examples provided in the *Participant Guide* and other CP evidence.

(b) Broad-based safety programs and culture

[57] Before analyzing the specific hazards CP needed to demonstrate in order to establish due diligence, I will turn first to the broader context of safety culture in the company.

[58] Mr. Keith Shearer, Assistant Vice President Safety and Sustainability, outlined a number of general safety measures in place at CP. In his words, the company considers safety a never-ending process of improvement.

[59] The effectiveness of the safety system is monitored by what the company calls efficiency tests (“e-tests”). In the case of this subdivision, in a two-year period, 15,000 e-tests were conducted, of which 1,200 related to Rule 34 signal recognition (Exhibits A-10 and A-11). In addition, there were tests for communication and compliance with the company speed SSI and “set-up tests”. According to Mr. Shearer, CP documents and does trend line analysis on the results of the tests, but no evidence was presented to document that it actually measures what caused this violation because the root cause relates to Human Factors. And to be clear, observational e-tests monitor operational deficiencies and set-up e-tests ensure knowledge of and compliance with the *CROR* and company rules, but neither of them have been demonstrated to address the loss of situational awareness of a crew.

[60] CP witnesses, including Mr. Shearer and Team Lead Instructor Mr. David Allen Phillips, explained that safety is “woven into” its operations and reinforced by a variety of methods, including “safety footboard meetings,” handover briefings, General Bulletin Orders (GBOs), Daily Operating Bulletins (DOBs), Special System Instructions (SSIs) and the Home Safe Program, all of which are meant to establish a “safety first” culture. No documentary evidence was filed to support this claim.

(c) Informal and regulatory incorporation of CRM

[61] In addition to the formal training methods, which are documented and discussed below, CP argues that CRM is “woven into” its training. This claim is very difficult to assess, given that it is argued to occur in the course of “footboard meetings” and discussions in the course of other rules-based training, and as part of other safety programs and initiatives. Unfortunately, if true, it is undocumented (or no such documents have been submitted for consideration by the Tribunal). I recognize that in the case of oral briefings, not a lot of evidence can be expected, and I do not

doubt the factual basis of the testimony given; however, CP has a burden to demonstrate due diligence.

[62] Mr. Phillips suggested that some CRM concepts are incorporated in the *CROR* (such as mandatory read-backs), but these are also basic radio procedure across transport modes. It is also possible that CP company SSIs, which are essentially more restrictive procedures supplementing the *CROR*, reflect such practices. For example, CP has attempted to reduce the likelihood of Rule 439 violations by the SSI previously discussed; however, this rule does not address distraction but instead mitigates the possible outcome of an error (which is still safety-enhancing).

[63] The Minister has suggested that, rather than being “woven into” other training, CRM is “buried in it.” Leaving aside the pejorative aspects of the term, this characterization is not entirely inappropriate. If, as CP claims, CRM is a significant company goal, it should be relatively easy to produce GBOs, SSIs, DOBs or policy documents that support the contention. The only CP documents on record are the disciplinary and training records of the crew and the training documents listed above, neither of which are evidence of the presence of CRM in any larger context.

[64] As the Minister demonstrated on cross-examination, Supervisor Jason Inglis, who was responsible for the investigation (a subordinate actually conducted it), was not familiar with the concept of Crew Resource Management or the acronym “CRM.” Mr. Phillips opined that this was because “we use the programs to not use and teach the term, but teach the behaviours surrounding crew resource management.” While it may be the case that the terminology is less important than the behaviour for frontline crew, it does not inspire confidence that the knowledge required to change behaviour (specific aspects of Human Factors error) was well understood by line employees.

[65] Mr. Shearer admits that “safety culture” is difficult to define, although he points to improvements in safety metrics such as personal injury performance and US Federal Railway Administration train accident performance (CP also operates in the United States and therefore reports accidents to that authority). He also stated that CP has made investments in technology to reduce its top causes of train accidents. While all safety efforts are beneficial, it is difficult to relate these metrics to the specifics of this case. The evidence required for the defence of due diligence is not general but must be specifically related to the prevention of the violation in question.

[66] Mr. Shearer testified that the company has led the industry for 15 years in terms of safety as measured by number of accidents per train mile. It currently has the lowest rate of personal injuries in its history. He described processes within the company for safety management, knowledge management, continuous improvement and risk assessment that seem quite robust. There is a continuous improvement program for safety management.

[67] The company appears to have a serious commitment to safety in the general sense; however, the issue at hand is more limited. It relates to whether the company had a system in place to prevent the specific behaviours that led to the violation.

[68] The analysis of the effectiveness of the system is not limited to listing measures the railway actually took. Rather, it extends to alternatives that a reasonable person would have considered.

[69] *Synchrude* was cited by CP with respect to the due diligence defence. At para. 116, that decision cites Stewart, C.J. in *R. v. Gonder*² at para. 25:

Reasonableness of care is often best measured by comparing what was done against what could have been done. The reasonableness of alternatives the accused knew or ought to have known were available is a primary measure of due diligence. To successfully plead the defence of reasonable care the accused must establish on a balance of probabilities there were no reasonable feasible alternatives that might have avoided or minimized injury to others. See also: Libman at pp. 7-135 to 7-141.

[70] The company points to its CRM training and a considerable amount of testimony related to the concepts underlying CRM, to which topic we will now turn. The key question here is whether CRM, as practised by CP, constituted “a proper system to prevent commission of the offence” and whether it had taken “reasonable steps to ensure the effective operation of the system.” In other words, the issue is not simply whether it had CRM training, but rather whether that training program, as implemented, would be effective and whether the railway should have considered alternative reasonable approaches.

(d) Human Factors

[71] Human Factors research is an increasingly important field in all modes of transportation but perhaps advanced most significantly in aviation. Human Factors is a field that studies cognitive, behavioural, physiological, social, and motivational aspects of human performance and human interactions with other elements of a workplace system, such as human-machine interactions. It lies at the heart of CRM training.

(e) Crew Resource Management – Initial training

[72] The *Participant Guide* is a 54-page document presented as a handout to new hires and would have been given to the crew members in their CRM training. According to CP training records (Exhibits A-5 and A-6), that training course was a two-day workshop and took place in 2002 for both Engineer Veneziano and Conductor Joubert. I find that the topics discussed in the *Participant Guide* are consistent with the purpose and content usually associated with CRM training.

[73] As outlined in the *Participant Guide*, the railway initially borrowed much of its CRM training from aviation sources. While aviation technology improved considerably through the 1970s and aircraft operated at higher altitudes and therefore out of the weather, accident rates remained stubbornly high, and occurrences were increasingly blamed on a catch-all phrase called “pilot error.” The National Aeronautics and Space Administration (NASA) and major US airline carriers conducted research and started to develop what was originally called Cockpit Resource Management and currently Crew Resource Management in an attempt to drill down to root causes and to try to instill behaviours that would counteract human errors.

² *R. v. Gonder* (1981), 62 C.C.C. (2d) 326 (Yukon Terr. Ct.)

[74] The *Participant Guide* refers to several high-profile accident cases to demonstrate the potentially tragic consequences of Human Factors errors, such as Eastern Air Lines 401 (p. 27), in which the crew fixated on a burned-out indicator light while ignoring audible low altitude warnings while the aircraft descended into the Everglades. The video presentation relating to Eastern 401 was not presented at the hearing; however, it is listed as an activity under the topic of Avoiding Distractions in the *Participant Guide*, so it is part of the training. I note that the accident is widely studied in the aviation industry and other industries that have adopted CRM. The *Participant Guide* also contains references to other well-studied cases in the rail industry.

[75] Since I am familiar with all of the case studies included, even though they were not shown at the hearing, I can reasonably conclude it demonstrates that CP did present appropriate subject matter in its initial training program. The Eastern Air Lines example is extremely *apropos* to this case. The aircrew in that case made the same fundamental error as the train crew, which was to allow a task of lower priority, and which could have been resolved later, to interfere with a critical monitoring task that was required at the time.

[76] The first distinction that has to be made is between the general topic of CRM and the specific behaviours that led to this incident. They are a subset of the Human Factors that are discussed in CRM training. These behaviours are referred to in the *Participant Guide* and are specifically outlined under the topic of Situational Awareness (pages 13 to 16) and Avoiding Distractions (pages 24 to 27). The defence of due diligence must apply to these behaviours and the degree to which CP “exercised all reasonable care by establishing a proper system to prevent commission of the offence and by taking reasonable steps to ensure the effective operation of the system.” It will not be sufficient to establish that the company provided general training relating to CRM, had other unrelated safety programs or that it took the offence seriously.

(f) Situational awareness

[77] The topic of Situational Awareness is material to the events that led up to this violation. The *Participant Guide* describes “situational awareness” thusly:

Situational awareness can be explained as the “understanding of the components in the environment at a particular moment in time and space, the comprehension of their meaning and the projection of their status in the near future” (Endsley, 1988). Put simply, it means knowing where you are, what’s going on around you, as well as what and how to do what’s needed.

[78] This latter comment, while useful as an introduction, does not entirely capture the scope of situational awareness, which also implies understanding what is potentially going on within one’s own consciousness. The loss of situational awareness in this case did not relate to a lack of understanding of rules or lack of understanding of prevailing conditions, such as the fact they were following another train. This crew was very aware of those things and engaged in managing them. The loss of situational awareness was as a result of distraction with tasks of lower priority and brief inattentiveness.

[79] However, it is noteworthy that the term “situational awareness” was often used by CP witnesses to describe the state of external factors, such as operating rules and physical factors, whereas the situational awareness that is at issue here is neither of those. It relates to the topics later in the exhibit associated with distractions and their management. In other words, the issue

was about Human Factors at play in the minds of the crew members. These are canvassed on pages 36 and 37 under the topic of Regaining Situational Awareness:

Error Chain

Accident studies have shown that it usually wasn't one isolated event that caused an incident or accident. Many mistakes and miscalculations probably occurred prior to the actual accident. This is called the error chain. You must be able to recognize, arrest, resolve, and monitor these problems to prevent an error chain and the subsequent loss of situational awareness.

Problems that could result in an error chain are as follows:

- failing to plan and prepare.
- being distracted.
- dwelling on a problem.
- overloading on information.
- failing to prioritize decision making.
- failing to recognize a deteriorating situation.
- failing to communicate.

The essential factor of regaining lost situational awareness is recognition. No one likes to admit to human frailty, but the risk is too great to keep lost situational awareness a secret. It is your responsibility to recognize a loss of situational awareness in yourself or in other crew members and to notify crew members of this loss as soon as it is detected. ...

[80] Several of these elements were at play as the crew approached Signal 118.5. In addition, some of the critical concepts discussed on page 14 also later come into play, specifically, *Theory of the Situation* and *Reality of the Situation*.

[81] When asked what the root cause was, Mr. Shearer echoed the comments of the previous witnesses that “the conclusion on this one is crew error, and it’s hard to say anything other than that.” However, he continued using the precise terminology of the *Participant Guide* and stated the following:

That’s clear in the evidence. Despite what we saw in the ... video, the locomotive engineer – his mind saw something different, and we know in Human Factors that the mind can overpower what the eyes actually see. And this is an example of that – where he saw what he thought he should see, not what he actually saw. And we call that the *Theory of the Situation*, as opposed to the *Reality of the Situation*.

[82] From their testimonies, Mr. Shearer and Mr. Phillips were both aware that the issues at play in this incident were not about knowledge of rules or lack of understanding of external factors. The violation occurred because of what the crew was thinking about and directing their attention to while they should have been monitoring Signal 118.5.

[83] I find that the key behaviours that contributed to this violation were task fixation, task distraction, an incorrect *Theory of Situation* that led to an improper assessment of the *Reality of the Situation*, improperly prioritized work, failure to recognize a deteriorating situation and failure to communicate effectively. It is also possible that a *Theory of Practice* was over-learned to the extent that it inhibited resolution. The factors I have listed are the subject matter of CRM

and the purpose of the training is to teach crews to recognize when they are making these errors and strategies to mitigate them.

[84] The more salient issue is the effectiveness of the training for the employees actually involved. Here, I make the distinction between the relatively comprehensive CRM training provided to new hires (and to the employees in the year noted) and the truncated version that is presented in recurrent training provided to seasoned employees, which these specific employees have also received. The recurrent training is a topic covered during Required Qualification (RQ) training, which is required by *CROR* General Rules A(vii) to take place no less often than every three years. Both employees completed their most recent RQ training in 2017.

[85] For this discussion, the railway provided a PowerPoint version of the training program incorporated into the RQ program mandated by regulation. This document is entitled *Field Operations – RQ 3 Crew Resource Management (CRM)* (Exhibit A-8).

(g) CP's recurrent training on CRM

[86] I will now turn to the topic of the recurrent CRM training that employees receive as part of their RQ training. Exhibit A-8 was provided by CP and is indicative of the level of CRM training provided to experienced employees. The exhibit is a series of PowerPoint slides³ that would be shown in the course of RQ training.

[87] In the case of CP, this is provided as an addendum to the training on signals and rules required by the *CROR*. I make this distinction because it is not nearly as comprehensive as the initial training as outlined in Exhibit A-7 and in testimony by Mr. Phillips. As the slides demonstrate, the emphasis is different.

[88] Mr. Phillips went through the slides, and I summarize his explanation here. First, employees on RQ training would be reminded that data showed that 34 to 39 per cent of rail accidents were caused by Human Factors (period data). Railroad operations are increasingly complex and rely on a variety of trades and equipment and the resulting complexity can lead to loss of situational awareness. Recognition of this allows safeguards to be created.

[89] This is followed by a brief history of CRM from the aviation industry. Training has become more specific and delivering CRM has evolved. The trainer then leads a discussion about how these ideas can be applied, followed by an attitude survey. Then, the trainer leads a discussion of crew error types and examples of them, including ones significant to this case: communication errors (incorrect information exchanged) and procedural errors (slips, lapses, mistakes – right intention, wrong execution).

[90] The concept of understanding behaviours to manage errors is then discussed, including communication/cooperation, situational awareness/stress and effective decision making. Learned behaviours are behaviours that can be taught. Performance of crew members was shown to be improved with an increase in communication. The benefit of experience is then discussed, including how it can lead to better decision making, but can also be a hindrance if the employee

³ The Tribunal was provided with a PDF version.

is biased by past experience in a manner that prevents them from properly assessing the current situation.

[91] This exercise, according to Mr. Phillips, would take one to one and a half hours to complete. The entire presentation is 16 slides, some of which are repetitive. Obviously, they are meant primarily as a prompt of what the trainer is talking about and therefore can only indicate a broad outline of what would be presented in a lecture and that could vary from instructor to instructor and, as Mr. Phillips testified, depend on the class itself and its level of engagement. The lecture portion is supplemented by an exercise in which the employees are asked to find applications of CRM in the *CROR* as individuals and then as a team, to demonstrate that the team approach provides better and more complete information.

[92] In contrast to the regulatory requirements of other RQ subjects, which are accompanied by a numerical grade with a 90 per cent mark required to pass (CP's requirement is higher than the regulated standard), CRM is presented as "reminder," as Mr. Phillips put it. It is not clear how this approach would signal to line employees that the subject matter was considered important by the company. In fact, while Centralized Traffic Control (CTC), Radio Signals Exam, Transportation of Dangerous Goods, Preventing Violence in the Workplace, Rail Security Awareness and Emergency First Aid are all tested and the grades recorded in the training record, there is no grade associated with CRM.

[93] I also note that the slides do not suggest that any of the subset of behaviours that led to this violation were adequately addressed. There is no clear evidence that topics such as those mentioned in Exhibit A-7 under Regaining Situational Awareness are addressed systematically. Other important issues in CRM, such as communication/cooperation and effective decision making are covered, but situational awareness is grouped together with stress. Stress is an important Human Factors issue also, but it did not necessarily apply in this situation. A greater understanding of those behaviours may have prevented this crew from making the errors it did, but there is no evidence that they had participated in a thorough discussion of these topics since initial training was provided, more than 15 years prior to the occurrence.

[94] I find the portion of RQ training that qualifies as CRM training relates to the short PowerPoint presentation accepted into evidence as Exhibit A-8. Having been exposed to 45 minutes of simulator training during the course of this hearing, I do not find it relevant to the matter at hand. While it is an impressive tool for training on operating rules and procedures, very little of it actually related to situational awareness. If the only demonstrated training on CRM is the "reminder" module, it is not a proper system to prevent crew errors arising from distraction.

(h) Conclusions

[95] In comparison with the initial training, the recurrent training on CRM reinforced every three years is not presented to a level of depth that persuades me it is sufficient to constitute a "proper system to prevent commission of the offence and by taking reasonable steps to ensure the effective operation of the system."

[96] While CP asserts that the safety outcomes are also addressed by other efforts, such as "safety culture" and that they are "woven into" its operating approach, these general claims

would need to be supported by documentary evidence to be persuasive. Such evidence might include GBOs, SSIs, DOBs, policy documents or communications to employees that are directly relevant to the hazards posed by distraction and improperly prioritized work. This is not to say that such evidence does not exist; however, it has not been produced for the record of this hearing.

[97] I find that the RQ “reminder training” did not adequately address the specific issues that could have prevented the violation. While these topics were adequately discussed in the training the employees received 15 years earlier, there is insufficient evidence to conclude that they were reinforced in any meaningful manner in RQ training. As a consequence, I am not convinced that employees are sufficiently trained and reinforced by procedural guidance (such as standing orders) on how to avoid these Human Factors errors.

[98] Based on the metrics provided, it is clear that CP has a strong commitment to safety. However, its approach to CRM appears to be a significant lacuna. In the parlance of CRM, I recommend that CP address its *Theory of Practice* by benchmarking its program structure and pedagogy against those in other industries that currently practice it.

[99] Consequently, I find that CP failed in its due diligence defence.

E. Amount of penalty

[100] In this case, neither the Minister nor the applicant made substantial submissions on the quantum of the penalty. The Minister argued only that the calculation of the penalty was proper and appropriately applied. CP declined to make a submission on quantum, as counsel suggested that the key issue in the case was not the size of the AMP.

[101] The decision to issue a Notice of Violation was based on a record of previous incidents that were documented in the Minister’s Exhibit M-7, Rail Safety Enforcement Decision-Making Checklist. I do not agree that two of them are in scope. One incident occurred in 2016, so it exceeded the two-year period of consideration noted in the form. The second occurred on June 5, 2019. I have difficulty accepting this as a prior incident since the matter in question occurred on May 11, 2019. In any case, only the remaining three were properly used in the calculation of the penalty, as outlined in the Recommendation Memo from Investigator Lee Panchyshyn to Marc Bélanger (Exhibit M-8).

[102] The prior Rule 439 incidents referred to in Exhibit M-7 are filed as M-9, M-10 and M-11. It is possible that the other incidents in question are still in litigation or have been dealt with by other hearings. I do not find a detailed study of those cases would be appropriate in the resolution of this case. However, nothing on the record persuades me that the incidents did not occur. The eventual disposition at law is not particularly relevant either to the decision to issue or the calculation of the penalty. TC cannot be expected to have perfect knowledge of future events but must operate from what is knowable at the time.

[103] In the Rail Safety Enforcement Decision-Making Checklist, Inspector Hopper writes:

Transport Canada has conducted several interviews and investigations relative to Passed Stop violations on CPR within the Past 3 years. In the past 18 months there have been another 4 incidents on CP in Ontario.

[104] Under Regional Manager Recommendation, it is indicated that:

It is clear that CP has not adequately addressed CROR 439 violations. Despite corrective action plans submitted by CP to TC in response to regulatory actions, CROR 439 violations continue to occur. It is reasonable to infer that CROR 439 violations could lead to injury, damage to property and the environment. Centralize Traffic Control (CTC) signals provide protection between following and opposing trains, therefore it is imperative that CP operating crews adhere to CTC signal indications. Due the severity and circumstances of this violation, a Notice of Violation is the appropriate enforcement action to pursue.

[105] The exact number of previous violations is not critical to the decision to issue the Notice of Violation in this case or to the quantum of the penalty, since TC acts within its discretion in these matters, and it is clear from the evidence that numerous Rule 439 incidents have occurred. It is also admitted in testimony by Mr. Shearer that the TSB has long been concerned about the persistence of such incidents.

[106] In the calculation of the penalty, TC applied two mitigating factors related to bringing the matter to the attention of, and assisting, the Minister, thereby reducing the penalty by 6 per cent for each factor (Exhibit M-8). CP reported the matter to the TSB and, in consequence to TC, two days after the violation. It also assisted the investigation although there seemed to be some initial missteps. I find no reason to alter these mitigating factors.

[107] In the circumstances, I find that the penalty was properly calculated and order the AMP to be paid as assessed.

III. DETERMINATION

[108] The violation and the administrative monetary penalty are upheld. The Minister of Transport has proven, on a balance of probabilities, that the applicant violated section 17.2 of the Railway Safety Act.

[109] The total amount of \$74,800 is payable to the Receiver General for Canada and must be received by the Transportation Appeal Tribunal of Canada within 35 days of service of this determination.

January 21, 2022

(Original signed)

Raymon Kaduck
Member

Appearances

For the Minister: Eric Villemure

For the Applicant: Alan Blair
Kunal K. Nand