BETWEEN:

HER MAJESTY THE QUEEN .....PLAINTIFF;

AND

CANADIAN PACIFIC RAILWAY COMPANY ..... DEFENDANT.

1962
Apr. 9-11
1963
April 9

Crown—Common carrier—Contract of carriage of goods—Destruction of goods—Derailment of train—Act of God—Duty to take precautions against extraordinary events—Duty of railway company to guard against landslides when tracks pass through mountainous terrain—Burden of proof on party alleging act of God.

The plaintiff's claim is for the recovery of the value of wheat which the defendant as a public carrier had contracted with the Canadian Wheat Board, a Crown company, as agent for the plaintiff, to carry in conformity with the terms of bills of lading to Vancouver, British Columbia from various points in midwestern Canada. As the defendant's train carrying the wheat was travelling through the Rocky Mountains, between Revelstoke and Kamloops, it came in contact with a landslide which covered the tracks to a depth of from two to four feet for a distance of about one hundred feet and was derailed, most of the wheat in question being spilled out of the freight cars and lost. The defendant realized $2,700 by way of salvage of some of the wheat. The defendant denied liability on the ground that the loss was due to an act of God, which was one of the exculpatory provisions of the contract of carriage between the parties.

It was established by the evidence that weathering or rotting of the face of Squilax Mountain caused rock and rock dust to fall onto the 45° sloping mountainside below where it accumulated and formed a "talus" or "talus slope" at the foot of which a gully led down through an area of stones, earth and trees just above the defendant's tracks. Following a hot dry spell a heavy downpour of rain dislodged a large amount of the debris at the foot of the cliff, which gathered mud and stones as it flowed, with the consistency of a sloppy concrete mix, through the trees below and over the defendant's track. It was not disputed that the slide was due to natural causes without human intervention.

Held: That although the landslide, considered by itself, was an act of God, it does not necessarily follow that the cause of the accident was an act of God.

2. That whether there is a duty to take precautions against extraordinary events depends on the facts in each case.

3. That it was entirely reasonable to expect the defendant to ascertain the existence and condition of all potentially dangerous talus slopes, such as the one on Squilax, since for a relatively moderate sum such information was obtainable and, if obtained, it would probably have enabled the defendant, especially when climatic conditions were such as prevailed on the day of the accident, to take appropriate precautions to avoid a collision with a likely landslide.

4 That the defendant's employees failed in their duty to locate potentially dangerous talus slopes such as existed on Squilax Mountain and then to be on the lookout for a sudden termination of any long hot dry spell followed by a heavy rainstorm or cloudburst and to report such

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occurrences immediately, so as to enable despatchers to issue appropriate warnings to train crews.

5. That the evidence offered by the defendant fails to exculpate it from liability because it has not succeeded in discharging the double burden which rested on it of proving beyond reasonable doubt that the damages suffered were solely attributable to an act of God and that it could not have foreseen and guarded against the slide by employment of such amount of care and foresight as might reasonably be expected of it in the circumstances.

6. That the plaintiff's claim is allowed.

INFORMATION by the Crown to recover damages for the loss of wheat as a result of a train wreck.

The action was tried by the Honourable Mr. Justice Kearney at Victoria.

H. D. Monk, Q.C., R. Law and *D. H. Aylen* for plaintiff.

Frank E. Dent for defendant.

The facts and questions of law raised are stated in the reasons for judgment.

KEARNEY J. now (April 9, 1963) delivered the following judgment:

This action was instituted on behalf of Her Majesty the Queen on the Information of Wilbur Roy Jackett, Deputy Attorney General of Canada, whereby the plaintiff seeks to recover the sum of $32,655.12, being the value of quantities of Manitoba wheat which The Canadian Wheat Board (sometimes called "the Board"), a Crown company, as agent for the plaintiff, entrusted to the defendant in June 1958 at various points in Midwestern Canada for transportation and delivery to the said Board at the city of Vancouver in British Columbia.

The plaintiff claims that the defendant as a public carrier undertook for reward to safely carry and deliver the aforesaid wheat, as appears by twelve bills of lading which constitute the contract between parties, and that it failed and neglected to do. The defendant admits that the grain did not reach its destination and was never delivered to the Board but denies liability on the ground that its failure to carry out its contract was because of a train wreck which constituted an act of God.

Briefly, it may be said that on June 24, 1958 the defendant's train No. 85, consisting of 65 freight cars powered by four diesel engines, at about 3 p.m. left Revelstoke,

British Columbia, which with Kamloops, 128 miles westward, formed the terminal points of the defendant's Shuswap Subdivision. When proceeding towards Kamloops on the defendant's single track main line at about 7 p.m., while rounding what has been dubbed an 8% reverse "S" curve it reached mileage 86.7, which is near the foot of Squilax Mountain, where it came in contact with a landslide which had a depth of four feet on the south side of the track and two feet on the north side and extended along it for 100 feet or more. As a result, the train's four diesel engines and ten of the twelve freight cars, covered by the bills of lading, which were immediately in rear of the locomotives, were derailed, keeled over the northern embankment and slid down it for about 150 feet, spreading their contents as they went. The two other cars though not derailed were badly damaged, which caused their cargo to spill out.

At the commencement of the hearing, it was admitted and agreed between counsel for the parties that the aggregate value of the wheat in question and the loss suffered by the plaintiff amounted to $32,655.12; that the defendant, by way of salvage, realized on the grain which was widely scattered in mud and dirt a sum of $2,700, which it tendered to but which was not accepted by the plaintiff; that the defendant, as a public carrier, by reason of the aforesaid bills of lading, became an insurer thereof; that until the defendant made good its plea that the goods were lost due to an act of God (one of the exculpatory provisions appearing on the reverse side of the bills of lading) the plaintiff is deemed to have established a *prima facie* case that in consequence it was incumbent on the defendant, instead of the plaintiff, to open the proceedings.

Counsel for the plaintiff argued that the evidence in the case disclosed that the defendant had failed in several respects to discharge the burden of proving that it was justified in law and in fact to invoke a defence of act of God, and even if it had succeeded in doing so it remained liable for the amount of the claim because the proof clearly established that its officers and employees were guilty of negligence.

Counsel for the defendant, in his argument, recognized, especially in view of the well established British and

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Canadian jurisprudence, that in order to rebut the presumption which existed in favour of the plaintiff and discharge the onus which rests on the defendant it would be necessary for him to surmount three obstacles. First, the defendant must not only substantiate its plea that the damages claimed were, in the legal sense of the term, due to an act of God—but even assuming this were done there would remain the further burden of proving that the defendant as an insurer of the goods carried was in no way negligent and took every means reasonably possible to avoid or diminish the consequences of such act of God. Lastly, that since the defendant was vis-à-vis the plaintiff in a position of a bailee it was incumbent on the Railway to produce either the grain which was shipped or, in the event of an accident, the equivalent in money of what the defendant was able to realize on whatever grain was salvaged.

As I mentioned during the hearing, this last item presents no difficulty and can be disposed of immediately. It was not contested and I consider that the $2,700 offered by the defendant, but refused by the plaintiff, as appears by the defendant's witness J. C. Oliver, represented the most that could have been realized by way of salvage on the plaintiff's wheat which lay scattered in mud and dirt.

Before examining the proof submitted and in order to better appreciate it, I will refer to two leading cases dealing with the question of when and to what extent a common carrier may effectively make the defence of act of God.

What constitutes an act of God in the legal sense, according to the British jurisprudence, was succinctly defined many years ago in *Nugent v. Smith*[1]. The facts were as follows.

The defendant, a common carrier by sea, received from the plaintiff at London a mare to be carried to Aberdeen for good and valuable consideration. In the course of the voyage the ship encountered rough weather, and the mare received such injuries that she died. The jury found that the death of the mare was to be ascribed to injuries caused partly by the rolling of the vessel, partly by the struggles of the animal occasioned by fright.

Held, reversing the decision of the Court below, that the defendant was not liable for the death of the mare.

[1] (1875-76) L.R. 1 C.P. 423 at 444.

The case has been regarded as the leading one on the subject because of the following rule which it laid down in respect of the responsibility of public carriers. Mellish L. J. stated that James L. J. concurred that the decision of the Court below must be reversed, and desired to add the following observation:

> The act of God is a mere short way of expressing this proposition. A common carrier is not liable for any accident as to which he can show that it is due to natural causes directly and exclusively without human intervention, and that it could not have been prevented by any amount of foresight and pains and care reasonably to have been expected from him.

This case and other British jurisprudence dealing with an Act of God are referred to as follows in Halsbury's Laws of England, 2nd ed., vol. 7, p. 210, para. 294.

> An act of God, in the legal sense of the term, may be defined as an extraordinary occurrence or circumstance which could not have been foreseen and which could not have been guarded against; or, more accurately, as an accident due to natural causes, directly and exclusively without human intervention, and which could not have been avoided by any amount of foresight and pains and care reasonably to be expected of the person sought to be made liable for it, or who seeks to excuse himself on the ground of it.
>
> The occurrence need not be unique, nor need it be one that happens for the first time; it is enough that it is extraordinary, and such as could not reasonably be anticipated. The mere fact that a phenomenon has happened once, when it does not carry with it or import any probability of a recurrence—when, in other words, it does not imply any law from which its recurrence can be inferred—does not prevent the phenomenon from being an act of God. It must, however, be something overwhelming and not merely an ordinary accidental circumstance, and it must not arise from the act of man.

To the same effect, see also Salmond on Torts, 12th ed., p. 570.

Insofar as the Canadian jurisprudence is concerned, the rule laid down in *Nugent v. Smith, supra,* was followed by the Supreme Court of Canada in *Canadian Northern Quebec Railway Company. v. Pleet*[1]. See particularly p. 1117 where Duff J. (as he then was) quoted with approval the statement made by Mellish L. J. above referred to.

The case was one wherein potatoes had been frozen in transit notwithstanding that the railway had installed lamps in the car in which they were shipped. The Court held (Davies, C. J. dissenting) "that the Railway had failed to see that the lamp wicks were trimmed and kept in good order and thus failed under the circumstances to discharge the onus resting upon it as a public carrier."

[1] [1923] 4 D.L.R. 1112.

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A convenient digest of the *Pleet* and the *Nugent* cases is also contained in Canadian Encyclopaedic Digest (Western), 2nd ed., vol. 3, p. 295, para. 36, under the heading of "Common-Law Exemptions".

As mentioned by counsel for the parties, notwithstanding that previous wrecks due to slides have occurred on the defendant's track in the rocky mountains, the instant case is the first of its kind to come before this Court, and on that account I propose to review the evidence at greater length than might be otherwise the case.

What might be called the documentary proof consists of sample copies of bills of lading (Ex. 5) which constitute the contract between the parties; a government map (Ex. 6) whereon Civil Engineer G. G. Fyke, one of the defendant's nine witnesses, has indicated where the accident occurred; a bundle of photographs with descriptive titles taken and produced by Dr. H. Q. Golder, C.E., one of two witnesses called by the plaintiff, which, *inter alia,* contain a long range view of Squilax Mountain and the instant railway track (Ex. 8), together with close-ups of scenes and objects some of which gave rise to conflicting evidence.

Insofar as determining what was the cause of the *slide,* I do not think on the evidence this is open to question.

The defendant proved that there was no habitation on the mountain and it was not suggested by the plaintiff that the slide was triggered by any act of man. Furthermore, we have the evidence of G. G. Fyke *(supra),* employed by the defendant as assistant district engineer for its Pacific area and who was delegated to investigate this matter, and that of Dr. H. Q. Golder *(supra),* an experienced expert specializing in soil mechanics and geotechnical processes, who carried out a similar survey on behalf of the plaintiff. Both were of the opinion that it was caused by the following acts of nature: the weathering or rotting of the face of the steep cliff on Squilax Mountain caused rock and rock dust to fall onto the 45° sloping mountain side below, where it accumulated and formed what is called in geological language a "talus" or a "talus slope". At the foot of the above-mentioned accumulation a gully leads down through an area where there are stones of various sizes, earth and some trees, just above the defendant's

railway track. Following a hot dry spell, a heavy downpour of rain dislodged a large amount of the debris at the foot of the cliff, which gathered mud and stones as it flowed, with a moisture content likened to a sloppy concrete mix, through the trees below before sweeping onto and over the defendant's railway track where it descended for about 150 feet down the opposite slope towards the public highway, which skirts the bank of the South Thompson River.

I think it is clear that, considered by itself, the slide must be regarded as an act of God. But we must now examine whether on the proof made it can be said that the accident and the consequent loss suffered by the plaintiff was directly and exclusively due to the slide; whether it could have been foreseen or guarded against and in what respect, if any, was the defendant negligent.

As might be expected, of the nine witnesses called by the defendant those who had the most direct knowledge of the circumstances concerning the accident were Engineer V. J. Crosby, Head-end brakeman E. Nellis and Fireman G. Z. Bede, who were located in the cab of the leading locomotive. Two other members of the crew, the tail-end brakeman and the conductor, were located in the caboose and formed the balance of the crew, but they were not heard as witnesses. J. J. Birkheim, who was section foreman and responsible for the maintenance of the track between mileage 83 and mileage 89, although he did not see it until afterwards, was within less than a mile of the accident when it occurred. He was the sole witness to testify in respect to the time and the duration of the rain storm which triggered the slide.

The three occupants of the cab gave evidence which had much in common. They were well-acquainted with the reverse curve "S" where the accident occurred and, except for V. J. Crosby, were easily able to identify it on photos which had been taken in 1960.

Immediately following the accident, under the direction of G. G. Fyke a sharp corner was cut off. See Exhibit 3, which looks east, being the direction whence train No. 85 had come, and on the right-hand of the photo can be seen an excavation where a protruding embankment had been cut back to the extent of fifteen to twenty feet from the track.

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As appears by Exhibit 4, which was taken from about the same place as Exhibit 3 but looking west, being the direction in which the train was going, the fill from the aforesaid cut was used to widen the embankment and was deposited immediately behind the white signal post on the right-hand side of the picture. This extension also marks the place where the locomotives slid down the embankment.

Likewise, on the left side of Exhibit 4 may be seen an electrically operated warning fence which was installed more than a year subsequent to the accident. It functioned as follows: if debris slid down against the fence it would not only light up the two signal posts on each side of the track at the near end of the fence but, according to Albin Thors, roadmaster of the area in question since 1950, it would also put into operation a red danger signal at mileage 85.3 on the east side and a similar one to the west at mileage 87.2.

Engineer Crosby, on being questioned in respect of the above-mentioned exhibits, had some identification difficulties which are readily understandable: Less than a year after the accident, he was given a different run and between then and the date of hearing he had never seen the slide fence which was installed more than a year after the accident.

On examination in chief, engineer Crosby stated that on the date of the accident he had been in the employ of the Railway for 39 years and an engineer for the last fifteen years; that he was sitting in his accustomed place on the right-hand side of the cab of the leading locomotive and his brakeman and fireman were on the left-hand side, sitting one behind the other; that before leaving Revelstoke at 3.10 a terminal test of his train had been made and another inspection was made later at Canoe, and on both occasions the brakes and valves were found to be in satisfactory condition. En route he had several occasions to use his brakes and he found them in good order. He stated that in the area the maximum speed allowed for a freight train was 30 miles an hour and that on arriving at 7 p.m. at the reversed "S" curve his train was on a one per cent downgrade and travelling at 28 miles an hour. Shortly thereafter and when they were some 400 or 450 feet away from the slide, the brakeman and the fireman suddenly shouted, "Slide!", and upon thrusting his head out of the window he saw it and

he did all he could to bring the train to a stop by jamming on his brakes. At the same time he shouted to his assistants to get away from the window and hold on on the control panel, which was in the centre of the cab. This timely warning, I have little doubt, was largely instrumental in saving the trio from serious personal injuries because (as subsequent events showed) only the fireman suffered injuries and they consisted of cuts on the head which required but a few stitches.

The witness stated that when the fireman called out "Slide!" the speedometer showed 28 miles per hour and at the time they hit the slide, to the best of his judgment, the train was going about 20 miles per hour. After hitting the slide, he said his engine and the three others keeled over to the right and slid down the embankment.

In his opinion, under good rail conditions he was capable of stopping his train within 1,000 to 1,300 feet; on wet rails some greater distance would be necessary. I might here say that, according to Bruce McGull, supervisor of air brakes for the Pacific region, called by the defendant, was of the opinion that under perfect conditions it would require 1,143 feet to bring the train in question to a stop and that if conditions were adverse a greater distance would be necessary. The defendant also called another expert, Victor Hooley, a former engine driver and foreman of road engines who had been in the employ of the defendant company for over 40 years, who stated that under dry conditions it would require 1,300 to 1,500 feet and on wet rails another 450 to 500 feet to bring the locomotive to a stop.

Speaking of weather conditions, engineer Crosby stated that coming from Revelstoke it was showery and squally. On approaching the scene of the accident he could see across Shuswap Lake and thought that most of the storm was over on the opposite side of it. The area had suffered a long dry spell and to the witness's knowledge the spotting rain which was falling at the time of the accident was the first which had occurred for at least a month to six weeks.

The last train he met before coming to the slide was at Carlin, which is 10 or 11 miles east from the scene of the accident, and it apparently had passed mileage 86.7 successfully. When cross-examined, he stated that he knew

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of no previous mud slides in the area but that about two years previously there was snow and maybe a few rocks which came down east of that point. In answer to the question, "How far east?" the witness answered, "Oh, I would say about 14 car lengths, which would be, maybe, in the neighbourhood of 1,400 feet probably." Since (as the witness stated elsewhere) a car length is 40 feet, his answer is somewhat confusing.

In relation to passenger trains he said that, if there happens to be a bad spot, we have a watchman patrolling the track, but there was no patrol in the area at "that time of year"; a night watchman was there in the spring.

At a dangerous spot, known to be such, a slowdown order is issued. Where the accident occurred was not known as a bad spot, and if it had been, a slowdown order to 15 miles an hour for a distance of 2,000 yards would have been issued. He had received no such order on the day of the accident.

Unlike unit "A" type diesels used in passenger service where the cab is in the forefront and the crew has a clear unobstructed view of the track ahead and the terrain to right and left, the cab of train 85, which is a general purpose one, is in the centre of the locomotive. Owing to the projecting snout of the engine, the vista of the crew is restricted—the engineer being on the right-hand side of the cab has an inferior view of the left-hand side of the track. By the same token, the brakeman and the fireman have a better view of the left side than of the right.

The witness recognized on Exhibit 3 two white posts. The first one, nearest the camera, appears near the belly of the loop in the track, a little on the left of a birch tree, and which, though not measured, appears to be about midway from where the wreck occurred and the post farthest from the camera. This latter white post is a signal block for eastbound traffic; it appears on the left-hand upper corner of the picture, near the gap in the trees and a little to the right of what appears to be the crossbars of a telephone pole and which, by measured distance, was found to be about 1,100 feet from the point of collision.

The witness was asked whether, at the time of the accident, before going into the "S" curve, by looking slightly

to the right, instead of straight ahead, he could see the site of the slide; his reply was, "Not to my knowledge; I mean, there is trees, obstructions, birch trees and every kind of trees and a line of poles too, and I don't see how any man could ever see it", and he was positive that he could not have seen the slide itself.

The witness stated that at the time of the accident, although it was getting dusk, the visibility was very good, except for some shadows where the slide was.

L. E. Nellis, the brakeman, and G. Z. Bede, the fireman, gave evidence very much along the same lines as the engineer. The brakeman stated that the reason why he could not see the slide from more than three or four pole lengths away from where he was on the left-hand side of the cab was because the bank on the same side blocked his view and as soon as he saw it he shouted, "Slide!" to the engineer, who looked out his window and applied all the brake facilities available.

The accident occurred around 7 p.m. and at that time the weather was cloudy and it was raining slightly. No need of windshield wipers. When they left Revelstoke it was very hot and coming over they ran into rain, "kind of squalls". When they hit the slide they went through it about half way and he thought the weight of the train would pull it through it. The mud on the left side was higher than on the right and the engine was lifted off the track and was veered down the right bank.

He remarked that since the accident a lot of changes had been made—the cutting back of the bank, the widening of the track and the erection of electric fence—and the visibility may be better now. The witness said there are some places more dangerous than others and "we are notified to keep a watchful eye on them."

The fireman (Bede), speaking of the weather at the time of the accident, said it was cloudy and there might have been a few drops of rain but nothing very much. On the way over they had a few showers. Prior to June 24 "we had a dry spell for a month or so."

The witness also stated that, although he had never made a test of it, especially at the speed the train was moving, the slide could not be seen sooner than 300 or 400 feet back. It might be seen from further away now but not at the time of the accident.

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John Jack Birkheim, section foreman, was employed by the defendant to maintain the track between mileage 83 and 89. His hours of work were from 7 a.m. to 4 p.m., subject to be on watch at all times for anything which might happen to the track. Prior to the accident a very dry spell had occurred. He lived at Squilax in a section house at mileage 87.5 and on June 24 he had been working around Elson yard at mileage 84. While passing on his handcar mileage 86.7 about 3.35 p.m. he observed nothing unusual.

Among his duties was to check and keep culverts clear, and at mileage 86 there is a 31-inch wide culvert which goes under the rock at the mouth of the gully, where the subject "mudslide" occurred (Ex. A), which he had cleaned in the spring and which was all clear prior to the occurrence of the slide. When he arrived home at 4 p.m. no rain had yet occurred but the sky was clouding up in the west, something which he welcomed because it had been dry weather for so many weeks. About 6.30 p.m. a heavy rain started which lasted not very much more than 20 minutes but during which the witness said, "She really came down." When asked as a result of the rain did he have any concern for his track, he answered:

> No, I had no concern. As far as the track is concerned, I figured everything was safe; but our duty is when a storm comes up like this, we are supposed to patrol the track.

The witness got ready to go out patrolling and after the storm was over he saw from his house, at about mileage 87.2 or 87.3, a red block signal governing westbound traffic which showed that an approaching train had left Elson, which is four to four and a half miles to the east of Squilax. He waited for about 10 minutes and when it did not show up he "tried to get hold of the operator to find out about trains and I could not get through: there was no line. The line was out." He then walked a little east of his home to the aforesaid red block signal, where there is a dispatcher phone. The line was in good order and he learned that train 85 had been wrecked and 14 cars were supposed to be off the track. He then went up to see it and, omitting details given by other witnesses, he described it as "an awful bad mess" and stated there had been no previous slide within his area which he had patrolled during six years.

The witness stated that the last train which passed his house did so about an hour before the accident. He could not remember the number of it but it was going east and

apparently was not involved in any accident. I will have reason to comment on this evidence later.

When it was drawn to his attention that, at any rate, since, changes had been effected apparently one could see the scene of the accident from the gap in the trees on the extreme left of Exhibit 3, the witness answered:

> Maybe you could see now but you could not see then, but it would only be for a split-second, and you could not tell whether there was something on the track or not unless it were marked by a warning signal.

Albin Thors, who had been roadmaster since 1950 and had been 33 years in the employ of the Railway, at the date of the accident was the roadmaster in charge of the maintenance of the track and right-of-way and inspected it once or twice a week. An assistant roadmaster (he has two) patrols the track daily. On the day of the accident he had passed mileage 86.7 at 5 p.m., two hours before the accident. He was sitting in the cupula of the caboose on a train which was moving eastward and was looking over his territory. The weather was very hot and cloudy and after he got home to Salmon Arm at mileage 63.5, roughly 24 miles east of the point of the slide, a cloudburst occurred. In answer to the question whether the section foreman is required to take any special precautions in a rain such as he described took place, he replied, "It is up to the section foreman to use his own judgment in a case like this."

He did not know whether the rain storm he had seen was the same one that John Jack Birkheim, the section foreman, had seen at Squilax.

When on cross-examination the witness was asked if he thought the road-bed on the day in question was safe, he answered, "Yes, the little rain we had didn't seem to amount to anything that anybody would be alarmed over."

> Q. Now you knew of no unusual rain in the area; you knew of none?
> A. We had the cloudburst that—
> Q. Up at Salmon Arm?
> A. Yes.
> Q. But I am talking about Squilax.
> A. No. I don't know any about Squilax at that time.

Asked what does he do to protect the track against slides, he said, "It is an impossibility to protect it. We always try and prevent the slides, if it can be done." They set up some means of warning at places where there is a serious danger, they sometimes build sheds over the

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track and they have built warning fences, like the one in the instant case, and they usually take down the rocks if it is unsafe, if it is loose rocks; and sometimes build concrete shields to catch a slide before it gets to the track. His Company had never attempted to stabilize the soil by spraying a cement mixture on it such as is sometimes done on highways as well as railways, and sometimes put revetments of concrete to stop it further up the hill.

Q. And mounds to divide the slide so it won't reach the track?

To this last question the witness answered, "It can be done, yes."

All of the foregoing, he admitted, are recognized preventive measures if you know you are in an area where there may be slides. Questioned on use of patrols, he said:

A. Oh yes, it is up to the section foreman to patrol ahead of the passenger train or if the weather is bad. If the weather is—we get a storm—it is up to the section foreman to use his own judgment to get out to protect, to patrol ahead of the passenger train.

Q. And he is expected to do so but he is not expected to patrol ahead of a freight train?

A. If the weather is bad enough.

Q. So that you do some patrols for passenger trains that you probably don't do for freight trains, is that fair?

A. Well, we pay more attention to the passenger, of course, but if the weather is such that if it is a stormy weather and a lot of rain, why the foreman usually goes patrolling in front of the freights as well.

The witness stated that "about a mile east where the accident occurred we get snow slides there at times and insofar as earth slides they had one slide at mileage 85.4 some time in 1961." He did not think anything of it as it only covered the track to the extent of one foot.

Victor Hooley, whose evidence in respect to stopping distance I have already referred to, when asked if, from his past experience as an engineer, he were sitting in the engineer seat he could see the spot where the accident occurred from the signal box (top left corner of Ex. 3; it is more plainly seen on Ex. 12), his reply was, "You can hardly see down there at all and one could not see the rails where the accident has occurred or a mud slide on the track." Notwithstanding the changes which had been made since the date of the accident, he thought the visibility remained much the same as it was before.

He also added that if the emergency brakes were put on at the corner where the eastbound signal appears (1,100

feet away), the train could not be stopped by the time it reached mileage 86.7. When asked:

Q. Do you think it is safe to go around a corner at a speed where, if there is an obstruction before you around the corner, you can't stop?

A. That is not even thought of. If you did, you would go crazy.

He said that to his knowledge "there was no previous large mud slides, that the first mud slide was the one that had occurred at mileage 86.7" and if minor slides had occurred he had never heard of them.

G. G. Fyke, whose evidence I have already mentioned in connection with the cause of the slide, was the last witness called by the defendant.

This witness, who testified at considerable length, stated that he arrived on the scene before 7 a.m. on the morning after the accident and he observed that the slide covered the 30-inch corrugated metal culvert but only penetrated it to the extent of about 18 inches, which shows that prior to the accident no water went through it.

He could find no record of a mud slide at the location of the accident.

In reply to the question, "Why did you recommend the erection of the slide fence—were you fearful of slides?", the witness answered:

No, I don't expect that there will be further slides here unless there are exceptional weather conditions and dry spells for accumulation of rock, dust and small rocks in gulleys on this rock face. But the reason why it was installed there is that we cannot anticipate any slide there. It is entirely dependent on the weather conditions, the nature and the cycle of the weather conditions. And there is no way of protection from this; although it may never actually be used, it is the best protection we could devise to give some warning to the trains coming that there may be a slide in that point, if it does occur.

Q. Was it put in because you had a slide there?

A. Yes, it was put in directly as the result of this one slide.

On cross-examination the witness was asked what he thought of the theory that in areas such as the instant one over a period of years (it may be many years) debris talus rock, and the like, in dry seasons accumulates until ultimately something triggers the slide; he replied, "This point is a very unlikely candidate for a mud slide."

Q. Then also in some areas if you know there is a dangerous area, you could make it slide, could you not trigger it when it is not going to do any damage, as we can do it like they do with snow avalanches?

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A. Well, it is pretty difficult, that is what I am saying. Some rock coming off and you go and scale it or blast it to bring it down under control.

Q. Now what you have done at this site of the slide we are talking about is to put in a slide fence?

A. That is correct.

Q. Now this does not stabilize it, it merely gives a warning if a slide occurs.

A. That is correct.

The witness testified that when the train was in the vicinity of the eastbound block signal (Exhibits 3-12) it was possible for the engineer, on the 24th of June, to see the point of the slide which was 1,160 feet away, but because his cab is set back in the middle of the engine and its nose restricted his view he could do so for less than a second and then only by looking to his right instead of straight in front of him. He added that the excavation on the south side of the track had slightly improved the view.

The witness mentioned that the talus in question was resting on a 40° slope and that a rainstorm would trigger material built up on such a slope. "Quite often you also get slides directly off the rock faces, and quite often where there are water courses."

Survey photographs can be obtained from government sources but in his opinion they are not conclusive.

He said an awful lot of potentially dangerous areas exist in British Columbia. Some railway companies such as the Pacific Great Northern and the Canadian National have systems of finding areas that are potentially dangerous by survey or drilling. The defendant Company is doing it in some places but they don't go into a place where there has not been any history of a slide and unless something has occurred that would lead the Company to believe there is going to be a slide there.

Speaking of maximum speed, the witness said that, although the maximum speed for passenger trains is 35 miles, there are many places where they are required to go slower.

In order to re-establish train service over the scene of the accident required just two days, but to make the cutting and widen the embankment required about two months' work.

The cost of the accident to the defendant was $174,000.

In the opinion of the witness if it had been possible to reduce the striking force of the train to, say, 5 m.p.h., "one or possibly no diesel units would have gone down the bank—one diesel would not drag the whole darn train."

There remains the evidence led by the plaintiff.

I have already dealt with a small portion of the testimony given by Dr. H. Q. Golder which concerned the cause of the slide. The background of the witness is as follows: He received his engineering degree from Liverpool University, England, in 1932 and his doctorate from the same University in 1940. He worked for some years in Government Research Stations in England and for five years at the Building Research Station, where he dealt with soil problems. In 1958 he started his own consulting practice and in that year he made his first study of soil problems in British Columbia. The following year he took up residence in Canada, where he has continued working in his chosen field.

Dr. Golder, in his additional evidence, stated, *inter alia,* that new techniques are available since the war and are used by many highway departments in Canada and the United States in respect of locating and grading potentially dangerous talus slopes the accuracy of which is, to some extent, dependent on the man's experience who is doing the work.

He first visited the scene of the talus slope in issue in March 1960 when he took the instant photographic exhibits. His next visit was in April 1962. Because the slide behaved like fluid as opposed to tumbling rock or soil, the witness described it as a debris flow slide which, due to continued weathering, builds up until, as often happens, the weather triggered it into motion. To the question, "What would you have recommended had you known that the Squilax slide was potentially dangerous", he replied:

> Although there are probably more, the following two remedial measures may be taken:—
>
> 1°—Catch the slide by a deep excavation near the bottom of the slope, where it would be somewhat downhill, so that you make a hollow sort of saucer with a raised lip; and by making provisions for drainage, for water to get away when there is no slide imminent.
>
> 2°—Funnel the several gulleys into a bigger gulley and replace the thirty inch culvert by a bigger opening, e.g., a 50 feet bridge excavating down to rock so that the slide could go through.
>
> On a very rough estimate the cost of the first method would be in the order of $100,000 and the second might be twice that amount.

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On being questioned how potentially dangerous slides not known to be such could be located and graded and whether such a slide like the instant one could be reasonably anticipated, he expressed the following opinion.

To locate potentially dangerous areas, start by using aerial stereoscopic photographs and by studying them, you could certainly check the areas which were not dangerous and you could pick out areas which are most dangerous. Next the findings should be checked on the ground by a soils engineer, and preferably a pleistocene geologist. The third stage, a more detailed investigation and possibly including drawings at the points where the engineers had decided there was a real danger, in order to properly classify the slide.

Assuming five hundred miles of track, aerial photographing would cost about $5,000, and assuming that half the territory were classified as safe, it would cost about a further $20,000 for the more detailed survey.

Railways in England, where a lot of the witness' experience occurred, do this sort of thing.

His experience in railway work is not extensive in Canada, but he knows the problem is similar where highways are concerned, and that a lot of the above type of work is done on a continuing basis in British Columbia.

In respect of foreseeability and locating potential slides, Dr. Golden stated, "Well, one can say in a certain area a slide will happen sooner or later. There are other areas where you think there might be but you are not absolutely certain."

Q. Now, what would be your view in this respect of the area at Squilax which you looked at?

A. There there is a difference between my opinion on the two occasions that I visited it. On the first occasion one area was covered with snow, and I was not able to see the ground, but I saw that last Sunday, and there is there a big talus slope which is potentially very dangerous. It is obviously going to move down at some time. Now, how far it will go when it moves is more difficult to say. Some of the slides may stop on the rather flatter area that I mentioned earlier, but there is a big chance they will come down and through the small gulley where the previous slide occurred and cover the track again.

The witness elaborated on the photostatic exhibits most of which bear descriptive titles. He observed that Exhibit 8 entitled "General view of Squilax mountain looking north" should read "looking south".

When he took the photos in 1960 he repeated that there was snow on the ground, but on his second visit in 1962 it was clear and he investigated for 1000 yards on either side of the slide and found no other talus slope. He saw no leaves covering the debris lying among the trees, a little above the track, and formed the distinct impression that quite a lot of material had moved down in the last two years but stopped short of the track. He also saw along the side of the track at the foot of the gully (Ex. 11) about 100 cubic yards of material which was not there two years before.

In cross-examination he stated that he did not go above the vertical cliff where there is a flat area but only to the foot of it where he saw the instant talus slope 200 yards across and which is the reservoir from which material is fed into the gulleys.

Asked if it was possible that two 50-foot bridges would be required instead of one, he replied, "It is possible. I don't know, I can't say that it is not possible."

Q. That is right. So that it is fair possibility you would have—twice $200,000 of twice whatever the cost each bridge is going to be?

A. Yes, but you could find out information for very little money.

Q. How many talus slopes would you expect to find on the C.P.R. line?

A. I have no idea but I could give you a very fair answer within a month of studying the aerial photographs.

On re-examination, speaking of the eastbound block signal (Ex. 3), the witness measured and paced off the distance between the spot where the accident occurred and the eastbound signal post (Ex. 3), which measured 1100 feet. He then looked in the opposite direction, back to where the pictures had been taken, and he could plainly see the two white posts belonging to the electric warning fence. Although the track itself was not visible, in his opinion a higher object, such as the slide, could be easily discernable.

The second and last witness called for the plaintiff was Reginald Cameron Thurber, civil engineer, a graduate of the University of Alberta in 1949. He specialized in soil mechanics and stabilization. He was with National Research Council and Provincial Research Council, then went to British Columbia, Department of Public Works, as Materials Engineer, where he spent 50% of his time on landslide problems. During the five years preceding the trial he had his own consulting practice. The witness had no personal knowledge of the Squilax slide and spoke from other experiences in British Columbia respecting the means

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available to ascertain when slopes are potentially dangerous in relation to slides.

Q. Now, will you tell us, are there any means available whereby one can ascertain when slopes are potentially dangerous in relation to slides?

A. Yes, definitely.

Q. Will you tell us first of all what types of surveys you make for that type of an area, so to say, a railway line?

A. Yes. Well, taking one particular railway, for example, the railway found that their maintenance costs and difficulties with derailments and slides and so on, was quite excessive; besides they would have to spend money to ascertain what could be done to reduce this problem and asked us to make a survey of it, both the active slide areas and potentially—areas of potential difficulty, which we did, both by the use of aerial photographs and by detailed study, by traversing the track on a *speeder*, stopping at areas where we felt there might be some problem, by visual inspection. We carried out further studies of these various areas, classifying them in quite a few different categories as to their potential danger.

Q. Would it be fair to say you categorized them in degrees of urgency?

A. That is correct, yes, and subsequently the railway have acted upon our recommendations that the most urgent areas be studied first, and we have carried out complete investigations, giving reports on the investigation and what we would recommend to stabilize the area, and then they have carried out the stabilization work.

Q. Do you mind telling us what railway this is?

A. The initial railway we started with five years ago was the Pacific Great Eastern Railway.

Commencing in November 1959, the witness said he did the same type of survey for the Canadian National Railway.

Q. Could you give us some statement as a basis of charging so we could form an estimate of cost on a thing like that?

A. I would say initially, of course, any railway in British Columbia has, I believe, well over 50% where you really can just look at the air photographs quickly and almost eliminate it, therefore half of the railway would require detailed investigation, and I think that—I believe on the PGE, for example, we covered—it has a railway line of about close to 760 miles, and to cover half of that in detail and make a complete list, a plan of the various items required, and we have to give costs on our investigation for each of these sections, I believe we did that for well under about $3 or $4,000, I would say, just on a guess. It was under—I would say it was under $5,000?

For this sum, the witness said, the railway would have obtained the services of witness as a principal soils engineer and the time of his organization's geologist to travel up the line and inspect various areas, detailed notes and a report giving a brief description of the areas that we felt were potentially dangerous, listing the degree of urgency and the reasons why and including the cost for carrying out further work, the whole contained in a bound report complete with

maps and photographs. The photographs can be obtained by anybody, the witness had them out on loan from British Columbia Provincial Government Surveys Division, which has pretty well photographed the whole of the Province from a fairly high altitude. Similar ones may be obtained from the Dominion Government.

Q. You have completed both those surveys?

A. Those as far as railways were completed the first season pretty well. For example, on the Canadian National Railway, we were concerned with the section between Jasper and Prince Rupert and we took a section where they were having the highest record of the problems pretty well in the McBride region towards Prince George, and another section from Smithers to Prince Rupert, and there are sections that we have never made this same survey because it was just pretty well a flat river bottom area and there were no history or record of any trouble.

Has the defendant established the first prerequisite of its plea, namely, that the accident was due to natural causes directly and exclusively without human intervention?

As noted earlier, it is not disputed that the *slide* was due to natural causes without human intervention, but one must examine what caused *the accident,* and the two are not necessarily the same.

As pointed out by counsel for the plaintiff, we are not dealing here with a case where a slide engulfed the train, but one wherein the slide had occurred and deposited itself on the railway track and the train ran into it. It clearly follows, I think, that while the slide was an act of nature the operation of the train which resulted in its collision with the debris on the track was a human act.

Now, with respect to the second prerequisite, namely, was the loss suffered by the shipper due to something which could have been prevented or guarded against by any amount of foresight, pains and care reasonably to be expected of the defendant?

In examining the question of foreseeability I would first refer to the evidence of G. G. Fyke because I think as assistant engineer for the Pacific area he possessed a considerable technical knowledge and he and those senior to him in rank and authority in the engineering field of the Company had more responsibility for foreseeing the accident, if this were reasonably possible, than the other witnesses of the defendant who belonged to a lower echelon and looked to their superiors for guidance and direction.

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Referring to foreseeability, Dr. Golder stated that, given a talus slope such as the instant one, the question is not whether but when would a slide occur.

I find Mr. Fyke's evidence lacks consistency. He agreed in his examination in chief with Dr. Golder that the cause of the original slide was a weather cycle consisting of a long dry spell, followed by a heavy downpour of rain, and that whether another slide would likely occur at the same spot was entirely dependent on weather conditions; but on cross-examination he said, "This point is a very unlikely candidate for a mudslide."

I think it is recognized that the safeguarding of the traffic which passes over the defendant's stretch of line through the Rocky Mountains is fraught with formidable difficulties. It is natural that the Railway should concern itself with attending to first things first and give priority to areas where small slides and disturbances have reached its track end, thus giving warning that more dire things may be imminent. The expenditures thus made have doubtless served to protect the person and property of railway users, which is highly commendable, but this is not to say that so-called inactive slides, especially of the type with which we are here concerned need not be reckoned with. In my opinion, the defendant's witnesses, particularly those having the most authority, failed in their duty first of all to locate potentially dangerous talus slopes such as existed at Squilax. On this being accomplished, I consider it would be reasonable to expect the defendant to direct particularly employees concerned with the operation of trains and track maintenance to be on the lookout for a sudden termination of any long hot dry spell likely to be followed by a heavy rainstorm or cloudburst and to report such occurrences immediately, so as to enable despatchers to issue appropriate warnings to train crews effective during the interval necessary to ascertain the consequences (if any) of such unusual occurrences and to take precautions against them.

I consider the aforesaid failure of superior officers contributed to a series of omissions on the part of the defendant's other witnesses of lower rank, as it led them into a false sense of security and, to that extent, relieved them of what otherwise would have been attributed to their own culpability. Thus, for example, the evidence shows that

Engineer Crosby was proceeding at a speed below the maximum limit prescribed by the Company in the subject area. It is also true that, as speeds go, 28 miles an hour would ordinarily be regarded as a safe and moderate speed, but the evidence also discloses that his train was half a mile long, weighed over 5000 tons and was being driven on a wet downgrade track at a speed which, according to his own evidence and that of other experts, was such that it could not be brought to a stop within a shorter distance than somewhere between 1100 to 2000 feet. If the witness, when approaching the "S" curve, had been aware of the existing potentially dangerous talus slope and the ominous significance of the unusual weather conditions then prevailing, in my opinion it is likely that he would have realized that he was travelling far too fast and governed himself accordingly.

Similarly, if section foreman J. J. Birkheim had been likewise informed immediately on perceiving the heavy downpour, instead of waiting to telephone the despatcher until after the heavy rain he witnessed was over and the line was out, it is reasonable to suppose that he would have done so immediately.

It is unfortunately true that slides of all kinds have been all too common "the rough country" with which we are here concerned. As is observed in Salmond on Torts *(supra)*, "whether there is a duty to take precautions against extraordinary events depends on the facts in each case."

As far as the evidence shows, no one in the employ of the Company was aware that a talus slope existed on Squilax Mountain until after the accident. The attitude of the defendant was not to concern itself with potential slides until such time as debris appeared on the track. No one in the employ of the defendant ever set foot on the mountain side at mileage 87.6 to see if some movement had occurred which had not reached the track, although Mr. Thors stated that it was up to the roadmaster and section foreman to look over the hills along the track to make sure that it is safe.

Section foreman J. J. Birkheim, on being asked if he ever made any particular examination of his territory to see if any of it might be unstable, said he never did so since nothing had happened in all the time he had been there to cause him any worry.

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I am disposed to agree with the submission of counsel for the defendant that on Dr. Golder's own evidence the remedies he suggested for eliminating talus slopes, particularly if they are as numerous as counsel would lead the Court to believe, might well be so costly that the defendant could not reasonably be expected to adopt them. On the other hand, I think the unrebutted evidence of Messrs. Golder and Thurber clearly establishes that, as had been done by other railways, it was entirely reasonable to expect the defendant to ascertain the existence and condition of all potentially dangerous talus slopes such as the one at Squilax, since for a relatively moderate sum such information was obtainable. In my opinion, if obtained, it would probably have enabled the defendant, especially when climatic weather conditions such as prevailed on June 24, 1958, to take appropriate precautions to avoid colliding with a likely landslide.

Furthermore, I might add that in a case such as this, I think the character of the evidence directed by the defendant at exculpating himself from the heavy burden which the law cast upon it is important.

Although Albin Thors said he was in the cupula of a train headed west which passed mileage 86.7 about 5 p.m., he did not identify his train by number, nor did he say whether (when or where) it passed train No. 85. The witness said that he learned of the accident when he arrived home at Salmon Arm, about 25 miles from the scene of the accident, and that he arrived back at the scene of the slide between 8 and 9 p.m.

Engineer Crosby said that the last train that his train No. 85 met before he came to the slide was at Carlin, 10 or 11 miles from the scene of the accident, and that he waited for train 948 from Kamloops to pass. None of the crew from train 948 was called to establish when the said train passed mileage 86.7 and when it arrived at Carlin. He began by saying that the train he met had passed Squilax about an hour previous to the time of his arrival there, then added, "No, it would be more", and ended by saying he did not know. Apart from being unable to state how long the said train was in coming from the scene of the accident to Carlin he did not offer any evidence as to what time his own train arrived at Carlin and how long it remained there.

J. J. Birkheim stated that a train headed west passed his place at Squilax at about 6 p.m. but he could not remember the number of it. His was the only evidence as to when the rain began and how long it lasted. He was not a disinterested witness as the closer the rainstorm could be linked with the time the accident occurred the less the likelihood of the witness being taxed with tardiness in investigating and reporting the consequences of the rainstorm. Taking into account that the various times mentioned by the aforesaid witnesses are at best only approximate, I regret the lack of clear-cut corroborative evidence which would establish when the rainstorm occurred and whether two eastbound trains pased mileage 86.7, one at about 5 p.m. and the other at about 6 p.m., or whether only one such train passed somewhere in-between times.

Considerable evidence was devoted to the question of how far was the maximum distance at which Engineer Crosby could have seen the subject landslide.

It is quite evident from photos Exhibits 3 and 12 and the testimony of Dr. Golder that, on the date he took them, the scene of the accident remained visible all the way from the eastbound signal box to the next white post, about 500 feet closer to the camera. I think it is true to say that if the engineer of a westbound train, when proceeding between the two posts, had looked to his right, he could have seen the wire fence signal posts (Ex. 2) which were erected after the accident.

Could the same be said of seeing the slide on the day of the accident?

I believe that, notwithstanding the conflicting evidence which was given on this question, the scene of the accident would have been visible to Engineer Crosby alone, who was on the right-hand side of the cab, but only during such seconds as it would take the train to move from the eastbound signal box to the next white post about 500 feet away. The said evidence is inconclusive because, in my opinion, it would not have been put to the test on June 24, since Engineer Crosby had, at no time, any misgivings about the safety of approaching the reverse "S" turn and did not see fit to reduce his speed the slightest, it was very unlikely that, even though he could have seen the slide on the day of the acident, he would think of taking advantage of the fleeting opportunity of looking to his right and

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leaving the task of looking ahead to his other two crewmen and applied his brakes earlier so as to avoid or minimize the effect of a collision.

As Duff J. said in the *Pleet* case, *supra*, at p. 1117:

> I have come to the conclusion that the proof is not as regards the nature of the precautions taken of that close-knit character which a tribunal charged with the responsibility of deciding that issue might rightly require.

In my opinion, the evidence offered by the defendant fails to exculpate it from liability because it has not succeded in discharging the double burden which rested upon it of proving beyond reasonable doubt that the damages suffered were solely attributable to an act of God and that it could not have foreseen and guarded against the slide by employment of any amount of care and foresight which might reasonably be expected of it in the circumstances.

For the foregoing reasons I would maintain the plaintiff's action for the sum of $29,955.12, to which must be added the $2,700 which was offered by the defendant but refused by the plaintiff, together with taxable costs.

Judgment accordingly.