PANARCTIC OILS LTD. v. MENASCO MANUFACTURING COMPANY, [1983] A.J. No. 889

Alberta Judgments

Alberta Court of Appeal

Lieberman, Laycraft and Kerans, JJ.A.

February 9, 1983

14426

[1983] A.J. No. 889 | 41 A.R. 451* | 18 A.C.W.S. (2d) 259

(22 pages) (59 paras.)

CASES NOTICED:

Wakelin v. The London & South Western Railway Company (1886), 12 App. Cas. 41, consd. [para. 24].
Fuller v. Nickle, *[1949] 3 D.L.R. 577*, consd. [para. 24].
Guardian Fire and Life Assurance Company v. The Quebec Revy
[*page453] Light & Power Co. (1906), 38 S.C.R. 676, consd. [para. 24].
Abrath v. North Eastern Ry. Co., 11 Q.B.D. 440, consd. [para. 24].
Banco de Portugal v. Waterlow, [1932] A.C. 452, appld. [para. 53].
Michaels v. Red Deer College *(1975), 5 N.R. 99*; *57 D.L.R. (3d) 386*, appld. [para. 54].
Liverpool, The (No. 2), [1963] P. 64, appld. [para. 55].
Payzu v. Saunders, [1919] 2 K.B. 581, appld. [para. 56].
London Corporation, The, [1935] P. 70 (C.A.), refd to. [para. 57].
Darbishire v. Warren, [1963] 1 W.L.R. 1067 (C.A.), appld. [para. 57].

AUTHORS AND WORKS NOTICED:

McGregor on Damages (14th Ed.), paras. 230 [para. 55]; 234 [para. 56].

COUNSEL

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This case was heard before LIEBERMAN, LAYCRAFT and KERANS, JJ.A., of the Alberta Court of Appeal.

On February 9, 1983, LAYCRAFT, J.A., delivered the following judgment for the Court of Appeal:

LAYCRAFT, J.A.

1 In the pre-dawn darkness of January 29, 1976, the respondents' Lockheed Electra 188A aircraft CF-PAK crashed while landing at the Edmonton International Airport. Some 1800 feet into the landing roll, the port main landing gear collapsed inward and upward into the port wing. Both port propellers impacted the runway, the No. 2 fuel tank ruptured and exploded and fire swept down the port side of the aircraft. After travelling a further 1,000 feet the aircraft swerved off the runway and came to rest. Happily, all 17 passengers and the entire crew were then able to escape the aircraft without injury. The aircraft itself was, however, heavily damaged and, in this action, liability for that damage was contested between the respondent owner of the aircraft, Panarctic, and the appellant Menasco, which rebuilt the landing gear before Panarctic installed it.

2 Trial of the action took four weeks during which 27 witnesses [*page454] were heard. Subsequently in an 85 page judgment the learned trial judge found Menasco liable for the damage by reason of the supply of a defective part in the landing gear and found further that the Panarctic aircrew had not been guilty of contributory negligence. He awarded Panarctic damages of $ 732,546.06. In this appeal the issues are whether the trial judge applied the wrong onus of proof in deciding whether Menasco is liable for the defective part and whether the trial judge misapprehended, disregarded or failed to consider relevant evidence in arriving at his conclusion that the aircrew had not been negligent. A further issue arises as to whether Panarctic adequately proved its damage.

I - The Flight and Landing:

3 It is common ground that the part of the landing gear which failed was the right hand (or inner) trunnion arm lug of the left hand main landing gear. Without describing this part in detail, it is sufficient to say that the landing gear has four of these trunnion arms, two on each side, bearing the weight of the airframe and transmitting that weight to the remainder of the landing gear. The failure which occurred was a vertical fracture of the right hand trunnion lug of the left hand main landing gear with the resultant collapse of the left hand main landing gear. The vertical fracture resulted from what was termed "abusive grinding" of the part -- that is: a grinding process during either the rebuilding of the part by Menasco or in subsequent repair, which produced excessive heat and deterioration of the metal.

4 The landing gear in question had been rebuilt by Menasco at its plant in California and then shipped to International Jet Air Ltd. at Calgary. Panarctic acquired the landing gear from that company, still in its original crates in January 1975 for instalation on its aircraft. International Jet Air was originally a party to the action, but the claim against it was discontinued before trial.

5 On January 29, 1976, the aircraft was scheduled to leave Calgary airport for the Arctic Islands, stopping at Edmonton International Airport en route. The aircraft was commanded by Captain R. Lidgren, assisted by a co-pilot, a Flight Engineer and a Load Master. Captain Michael Smythe, who was to take over command at Edmonton for the flight to the Arctic, was also in the cockpit. Seventeen passengers, all Panarctic employees, were on the aircraft. Before taking off the crew conducted normal pre-flight checks including a visual check and a walk around the aircraft by the First Officer. [*page455]

6 As the aircraft turned from the taxiway onto the runway assigned for take-off in Calgary the crew and other persons aboard heard a noise variously described as a "bang" or a "thud" or a "crunch" and some persons felt a vibration or shudder. The crew ascribed the noise and vibration to the nose wheel of the aircraft having run over a patch of ice on the taxiway as it turned onto the runway. The aircraft taxied normally thereafter, however, and none of the crew suggested aborting the take-off and returning to the hangar for inspection.

7 The witnesses described the take-off run as "normal". After take-off and the announcement by the First Officer of "positive climb" the Captain ordered "gear up". The First Officer then selected the gear handle into the "up" position. This would normally retract the landing gear which would disappear into the gear housing and the housing doors would close. A system of indicator lights monitors this process. When the gear is down and locked, a light shows green for each of the nose wheel and the left and right main landing gear. As the gear retracts, the lights show red and when it is fully retracted the lights go out. In this case the right hand gear indicator light and the nose wheel

light went out but the left-hand gear indicator light continued red, indicating that the left-hand gear had not fully retracted.

8 The crew was aware that on the previous day, maintenance work had been necessary on the landing gear indicator lights and there was thus a possibility that the fault was in the indicator system and not in the retraction of the gear itself. Following the prescribed procedure, the captain ordered "Gear down". Green lights appeared for the nose wheel and the right hand main gear, showing they were down and locked, but the red light continued for the left-hand main gear. The Captain then called for "emergency cycling" of the gear at the conclusion of which the red light continued for the left main gear to show it was still not completely retracted.

9 The crew discussed the difficulty and the procedure decided upon was to lower the gear at cruise altitude before reaching Edmonton so that the increased air flow during descent would assist in locking the gear down. The captain was nevertheless faced with the possibility that a "belly landing" would be necessary. He took the precaution of having the passengers move to the rear of the cabin so that if any propellers [*page456] were broken during landing and pieces of them punctured the cabin, there would be less chance of injury.

10 Some forty miles south of Edmonton at 16,000 feet altitude the gear was put down again. This time all three indicator lights showed green. The crew assumed that the prescribed procedure had worked and that all landing gear was normally down and locked.

11 As a further precaution, the spare Captain, Smythe, went into the aircraft cabin to observe the landing gear so far as that could be done from inside observation. He testified that he was able to observe the bottom portion of the aircraft tires and noted that the tires on both the left and right main landing gear appeared to be hanging down the same distance and in the same position. The captain did not inform Edmonton Tower of any difficulty and normal landing proceeded.

12 Touchdown was described as smooth and the landing roll normal until, after approximately 1,800 feet, the left main gear collapsed followed by the events I have previously described. When the fire was observed, the Tower dispatched the airport fire crews which arrived at the burning aircraft four minutes after the call was received. The fire was extinguished within thirty seconds after the fire crews arrived at the scene.

13 It was subsequently found that the right hand door from the left main landing gear housing had separated from the aircraft during the climbout at Calgary and presumably when the attempt was made to retract the landing gear. The door was found a few days later approximately 6 miles from the end of the runway near Balzac, Alberta. The loss of the door was not known to the crew until the aircraft was inspected after the accident.

14 After investigation, Panarctic decided that the cost of repair of the aircraft would be in the range of $ 750,000 to $ 850,000 and that repair would not be economical. A settlement was reached with its insurers for $ 694,918 less a deductible of $ 25,000. Panarctic then sold the hull and salvage to a California repair company for $ 225,000. It was agreed by the parties that the value of the aircraft was $ 950,000 before the crash. The trial judge awarded Panarctic $ 725,000 plus the further sum of $ 7,546.06, being Panarctic's cost of the salvage operation. [*page457]

15 It is relevant to one argument advanced by Manesco that when the salvage was sold, certain of the aircraft records were required to go with it. Panarctic did not keep copies of these records. Subsequently, the repairer of the aircraft sold it to a purchaser in Alaska. Prior to trial the aircraft had flown into an Alaskan mountain and burned so that the documents were not available.

II The Trial of the Action

16 The case pleaded by Panarctic and advanced by it at trial was that during its rebuilding process Manesco had negligently re-worked the trunnion arm lug, causing the overheating and the deterioration of metal which led to the fracture of the part. Menasco's response in its Statement of Defence was a complete denial. During the early part of the litigation it contended that the part was "bogus" or "counterfeit" and had not been supplied by it, though this

contention was abandoned at trial. In the alternative it alleged that Panarctic had damaged the part and then machined it itself, or had hired it done, and was now concealing that fact to place liability on Menasco. It was suggested that the absence of the aircraft records destroyed in Alaska was part of this program of concealment. Thus fraud was implicitly alleged and a bitter atmosphere of proof and counter proof permeated the trial.

17 Panarctic presented its case by calling as a witness every person who had anything to do with the maintenance of CF-PAK as that related to the installation of the new landing gear. This was apparently designed to establish, by an unbroken chain consisting of all persons who had ever touched the trunnions, that the failed part had not been altered in any way after it left Menasco. Each of the aircrew still available was also called; although Captain Lidgren had died before trial and only his written statement was available. Expert airmen particularly qualified with respect to the Lockheed Electra 188A were called by both sides.

18 A substantial part of the trial was described by the trial judge as a "battle of the experts" in the field of metallurgy and the manufacture or rebuilding of aircraft parts. The evidence was complex in the extreme being replete with microscopic photographs and expert analysis of the part in question. This evidence was the effort of both sides to deal with the validity of Menasco's contention that the part could not have been manufactured by it or, in any event, that the "abusive grinding" could not have occurred in its plant. [*page458]

19 In addition to the metallurgical evidence, Panarctic relied on its array of maintenance personnel, each of whom swore that the trunnions had not been tampered with after Panarctic acquired the landing gear. More than fifty pages of the Reasons for Judgment given by the trial judge are devoted to a meticulous review of this aspect of the case including assessment of the credibility of the witness. He related the metallurgical evidence to the physical evidence available with great care during this examination. Of the evidence of the maintenance personnel he said:

"I have no reason to disbelieve any of the Panarctic maintenance employees who testified. All were frank and credible witnesses and I accept their evidence. On the basis of their evidence and from the documentary records to which they have referred, I would be obliged, in the absence of evidence to the contrary, to conclude that there has been no tampering or reworking of the trunnion arm in question demonstrated between the month January, 1975 and January 26, 1976. There however remains to be considered the highly technical expert evidence called by both parties and the question of whether or not this expert evidence demonstrates on a balance of probability that some tampering or reworking of the trunnion arm did occur after the landing gear left the defendants' facility in 1974."

20 After his review of the metallurgical evidence the trial judge found that on the balance of probabilities the defective trunnion arm lug was not subsequently tampered with or reworked by Panarctic after it left Menasco's plant. He found Menasco "answerable for the defect".

21 The next principal issue was whether the aircrew negligently failed to avoid the accident or contributed to the loss:

1. by failing to recognize that the events before take off in Calgary signalled a danger they should have met by aborting the take-off and returning to the hangar for inspection.
2. by failing, as they approached Edmonton, to warn the Tower of the difficulties experienced, or to fly by it so that the undercarriage could be inspected visually, At the very least, it is said, this would have enabled the fire crews to follow the plane down the runway so that the fire would [*page459] have been put out much earlier.
3. by landing with the landing gear down knowing it was possibly defective. It is said that the proper course was a "belly landing".

22 The trial judge made findings adverse to the appellant on each of these issues. He found that nothing which occurred prior to take-off should have alerted the Captain to abort the take-off and his decision to proceed "was, in all the circumstances, entirely reasonable". He made similar findings which I shall review later in more detail on each of the other alleged failures of the aircrew.

23 The final issue considered by the trial judge was whether Panarctic presented adequate proof of its damage.

III The Onus of Proof:

24 For Menasco it is contended that the trial judge misdirected himself as to the onus of proof by placing on Menasco, the defendant in the action, the onus of establishing that the defective part had not been reworked in its plant. Counsel cites Wakelin v. The London & South Western Railway Company (1886), 12 App. Cas. 41, at 44, the decision of Estey, J., in Fuller v. Nickle, *[1949] 3 D.L.R. 577*, and The Guardian Fire and Life Assurance Company v. The Quebec Revy Light & Power Co. (1906), 38 S.C.R. 676. In the latter case, Duff, J., quoted with approval the decision of Brett, J., in Abrath v. North Eastern Ry. Co., 11 Q.B.D. 440, where he said:

"It is contended (I think fallaciously) that if the plaintiff has given prima facie evidence which, unless it be answered, will entitle him to have the question decided in his favour, the burden of proof is shifted on to the defendant as to the decision of the question itself.

It seems to me that the proposition ought to be stated thus: the plaintiff may give prima facie evidence which, unless it be answered, either by contradictory evidence or by the evidence of additional facts, ought to lead the jury to find the question in his favour; the defendant may give evidence, either by contradicting the plaintiff's evidence or by proving other facts; the jury have to consider, upon the evidence given upon both sides, whether they are satisfied in favour of the plaintiff with respect to the question which he calls upon [*page460] them to answer.

Then comes this difficulty -- suppose that the jury, after considering the evidence, are left in real doubt as to which way they are to answer the question put to them on behalf of the plaintiff; in that case also the burden of proof lies upon the plaintiff, and if the defendant has been able, by the additional facts which he has adduced, to bring the minds of the whole jury to a real state of doubt, the plaintiff has failed to satisfy the burden of proof which lies upon him."

25 The respondent does not disagree with the rule of evidence which the appellant derives from these cases. Rather, counsel urges that the trial judge's reference to an onus on the defendant was merely as to an evidentiary shifting of the burden once the plaintiff had established a prima facie case. It is said that, having analyzed the case in this fashion, he then proceeded to make positive findings on each issue from which it can be seen that he was aware of the ultimate burden on Panarctic and found that it had satisfied that burden. This interplay of the ultimate legal burden and a transitory "evidential burden" is recognized in the Wakelin case by Lord Halsbury, L.C., where he states at page 45:

"It is true that the onus of proof may shift from time to time as a matter of evidence, but still the question must ultimately arise whether the person who is bound to prove the affirmitive of the issue, i.e., in this case the negligent act done, had discharged herself of that burden. I am of the opinion that the plaintiff does not do this unless she proves that the defendants have caused the injury in the sense which I have explained."

26 The trial judge dealt with onus of proof as he commenced consideration of the question of responsibility for the defective part and the "abusive grinding" and mentioned it again 50 pages later when he reached his conclusion. As he opened the subject he said:

"The defendant argues that the obligation at law is upon the plaintiff to demonstrate on a balance of probability that trunnion arm 4B219 was processed by the defendant as it was immediately prior to the failure. The plaintiff strongly argues that the onus is rather on the defendant to prove its allegation that the part was reworked after it left the defendant's premises. [*page461]

It is trite law that he who alleges must prove. The onus is upon the defendant Menasco to establish on a balance of probability its contention that the trunnion arm 4B219 was reworked or tampered with after it was overhauled by the

said defendant and that by means of abusive grinding in such reworking or tampering with, the defect that led to its failure was introduced."

27 Following his consideration of the evidence he said:

"The onus upon the defendant is to demonstrate by evidence on a balance of probabilities that the failed trunnion arm was not produced at its facility in the condition as it was at the time of failure. The defendant argues that there was opportunity for this trunnion to have been damaged during initial installation by the plaintiff in the aircraft and it asks the court to infer that such alleged damage was then repaired by the plaintiff, in the course of which repair the trunnion lug was abusively reworked. The expert evidence led by the defence I find fails to displace the prima facie case made out by the plaintiff. The plaintiff's expert witnesses, whose evidence I accept, reinforce the plaintiff's position. In summary, having regard to all of the evidence before the court, I find on a balance of probabilities, that trunnion 4B219, which the defendant admits processing in 1974, was not subsequently tampered with or subjected to reworking at the instance of the plaintiff prior to the crash of CF-PAK on January 27, 1976. The defendant is thus answerable for the defects in the said trunnion, which defects I find on a balance of probabilities, were produced in the course of its overhaul of the landing gear in question, such defects leading to the said failure."

(emphasis added)

28 The introduction of the subject as well as the opening sentence of the conclusion, if taken in isolation, would in my opinion be a mis-statement of the onus of proof. Taken as a whole, however, and particularly having regard to the portions I have emphasized in the conclusions quoted above, his Reasons for Judgment show that the trial judge did apply the correct test. He finds that the expert evidence led by the defence fails to displace the prima facie case made out by Panarctic. That is: the defendant has not raised a doubt sufficient to prevent a finding that on the balance of probabilities the plaintiff has established its case. To speak of displacing a [*page462] prima facie case is to refer to the transitory or evidentiary burden of proof which, as a practical matter, a defendant may bear at some point in a case. The onus is on a plaintiff throughout to establish his case by a balance of probabilities; as a practical matter, however, once the plaintiff has completed his case, a defendant may face an evidentiary burden in the sense that if he does not displace all or part of the plaintiff's case, he will lose.

29 I am also of the opinion that, even if the correct test had not been applied, the problem of onus of proof would be overcome by the positive findings of fact made by the trial judge. After considering all of the evidence he was not left in doubt; he found expressly that the plaintiff had proved its case to a balance of probabilities. Only rarely is the question of onus of proof decisive in civil cases. If the finder of fact is able to make a positive finding one way or the other as to the balance of probability, evidentiary rules of onus of proof hardly arise. Only if the finder of fact is left in balance, unable to determine that the scale is tipped one way or the other, is it decisive to determine who has the onus of proof.

30 Two related points were raised by the appellant. It was said that the onus was on the plaintiff not merely to establish a prima facie case, but also to exclude the possibility that the defect resulted from some cause other than that relied upon by the plaintiff. I respectfully disagree with this statement in its use of the word "possibility". Otherwise the question may merely be one of semantics. A plaintiff must establish his case by a balance of probabilities; if he does not exclude other reasonable hypothesis arising from his evidence he may fail to meet the onus. The answer is not obtained, however, by first proving the cause of his loss and then excluding all other "possible" causes. The test is whether, on all the evidence, the plaintiff has indeed proven the case he advances to the required degree of proof whatever positive proof or negative exclusion that may require. The plaintiff, who has the onus of proof throughout, must make his way past the obstacles to establish his case by a balance of probabilities.

31 The other point advanced by the appellant was that the trial judge should have drawn inferences adverse to Panarctic because it parted with certain of the aircraft documents without keeping copies when it sold the salvage. One factor against drawing such inferences is that if it were one's intention to conceal documents, putting them out of one's control [*page463] is a poor way to do it. Panarctic could not foresee the destruction of the aircraft and

copies might have been expected to be available from the new owner. The essential question, however, in considering whether an inference is to be drawn adverse to Panarctic is whether it could foresee the defence to be advanced when it sold the salvage. The trial judge considered the facts on that point; he also considered that the records kept by Panarctic contained most of the information in any event. He did not draw the adverse inferences and I respectfully agree with him.

32 In my view the appeal relating to onus of proof must fail.

IV Negligence of the Aircrew:

33 The allegation of contributory negligence by the aircrew in failing to abort the take-off at Calgary is based on the noise heard by the persons in the aircraft as it turned from the taxi way on to the runway. In his statement, Captain Lidgren described it as a "slight bang" "like the nosewheel had gone over some ice while in the turn". The Flight Engineer said "we felt a bump, which is not unusual on the taxiway there". He said he felt no concern and that it felt "like we hit a piece of ice on the runway". Captain Smythe who had nearly 4,000 hours on Electra aircraft also felt that the sound was not unusual and ascribed it to ice. The Load Master who was seated in the rear of the aircraft used the word "thud" but he said noises of the kind are not uncommon on take-off and that on CF-PAK there were often "bumps and grinds".

34 One witness called by the defendant was, Gordon Hood, a passenger on the aircraft and an engineering employee of Panarctic. He said the sound was "as if the landing gear fell into a pothole". Seeking a simile of more common experience to which he could compare the sound, he said it was "about equivalent to ... if one were driving their automobile and, you know, a fairly high speed and ran into a one-foot pothole". The crew did not react particularly to the noise and even later when problems were encountered, the cockpit voice recorder discloses that their only connection of the noise to the later troubles experienced was the speculation that there might be a flat tire or a broken tire rim.

35 Expert witnesses on both sides discussed whether "good airmanship" required the crew to return to the terminal for inspection. The trial judge weighed this evidence in detail. He [*page464] concluded that the sound was not unusual and had a very common explanation on icy run-ways, that a metallurgical failure in landing gear such as did occur was a virtually unknown event (even if it had then occurred) and that the subsequent taxi roll and take-off roll of the aircraft was normal and vibration free. On all of this evidence he found that the crew could not reasonably have anticipated any need to abort the take-off. In my view there was ample evidence on which he could base this finding and, indeed, the evidence overwhelmingly supports it. I would not interfere with it.

36 Again we are invited to draw adverse inference against the plaintiff from the absence of witnesses. It is said that the plaintiff was required to call all the passengers aboard the aircraft and that failure to do so must result in inferences adverse to the plaintiff. I am at a loss as to the inference to be drawn. Presumably all that the passengers would be qualified to do would be to describe the noise heard; they would not be qualified to state the result that good airmanship would require from it. One or the other of them with a happy gift of expression may have produced a more descriptive phrase than "thud" "bang" "crunch" "bump" "judder" "shudder". I would doubt that 17 more witnesses on this point would have produced much enlightenment. The trial judge declined to draw any inference from their absence and I respectfully agree with him.

37 The negligence which was said to have occurred while the aircraft was airborne was the failure to advise the Edmonton Tower of their difficulties (even to the point of flying past the tower for inspection) and the decision to attempt a normal landing instead of a belly landing. Both of these questions depend on whether the crew was justified in relying on the three green lights, which appeared on the gear indicator lights as they approached Edmonton, as showing that the emergency was over.

38 It was said that the Captain, himself, recognized the existence of the emergency by ordering the passengers to the rear of the aircraft and yet did not take the next logical step of informing the Edmonton Tower. That action was taken, however, before the three green lights were obtained for the purpose of protecting the passengers during a

belly landing. The precaution has no bearing on the proper action to be taken, if any, once the green lights were obtained.

39 One argument that the crew could not rely on the three green lights as indicating that the emergency was ended was [*page465] based on the Flight Manual for the aircraft. It was said that, though there are no express words requiring a belly landing in this circumstance, on the proper interpretation of the Flight Manual that action is required. It was urged that whenever a red light has occurred in the gear indicator lights and even though three green lights are subsequently obtained, there must be a belly landing. The Panarctic Flight Manual and the Aircraft Flight Manual are worded somewhat differently but do not differ in substance. The relevant paragraph provides:

"Landing with Unsafe Gear Indication

1. If the gears release from the uplocks in expanse but an unsafe gear indication exists, proceed as follows:

(a) Landing gear control lever - RETURN TO NEUTRAL.

(b) Increase airspeed to 217K for maximum air load to assist in locking gear down.

(c) After all green lights are on, execute normal approach and landing with landing gear control lever in neutral position.

Caution: Allow approximately 5 to 10 minutes for landing gear to lock in down position. All green lights must be on.

NOTE: If the above procedure gives a safe landing gear indication, this indicates the probability of a malfunction in the landing gear hydraulic system. Turning the gear handle to the neutral position relieves pressure on the system and the increased airloads will assist in locking the gear in the down position. Leaving the gear handle in the neutral position shuts off all pressure from the landing gear UP and DOWN lines, but the mechanical downlocks will hold the gear in the - down position. The brake pressure will be normal with the gear handle in the NEUTRAL position, but the brake return line is restricted, thereby restricting the brake release operation. The nose wheel steering is disconnected with the gear handle in the NEUTRAL position.

2. If a gear unsafe position indication still exists after accomplishing the foregoing procedure, this [*page466] will indicate the probability of a malfunction in the gear position indicating system. Proceed as outlined in Topic F below."

(emphasis added).

40 "Topic F" referred to is entitled - "Landing with unlocked Gear Indication". Even there a belly landing is not recommended. The defendant points out, however, that this further procedure may be done only if "normal hydraulic system pressure is available". The argument is, placing emphasis on the "note" that there is a hydraulic malfunction. Therefore, it is said, one cannot proceed to the "landing with unlocked gear indication", but must proceed to a belly landing with the gear retracted as far as possible.

41 I am unable to accept this interpretation. First the validity of the argument turns on the technical working of the system and whether a subsequent green light overrides a warning or is merely anomalous. Such an argument must necessarily turn on expert testimony and not speculation. Not a single one of the expert aircrew witnesses gave evidence that such a dramatic procedure was required nor was any of them asked. Second, if a belly landing is required every time one has a red light indication no matter if subsequent recycling obtains a safe indication, there is no point in the re-cycling or attempts "to get all green". Finally, in my opinion, the quoted paragraph simply will not bear the interpretation contended for. It does not say a belly landing is required (and one would expect it to be there in large red letters if such a dangerous manoeuvre were mandatory); rather, it states in plain language that having had an unsafe gear indication and having used increased airspeed to lock the gear down.

after all green lights are on, execute normal approach and landing with landing gear control lever in neutral position.

42 Moreover, section 2 of the quoted paragraph tells one to proceed to "Section F" only if "the gear unsafe indication still exists". In this case the three green lights were then lit.

43 There then follows, as a footnote, the reason for keeping the gear control lever in neutral position and a warning that the hydraulic system must be overhauled. It does not state that a subsequently obtained safe indication is to be ignored. [*page467]

44 The expert evidence before the trial judge differed on whether good and prudent airmanship required the Tower to be informed and a fly past to be undertaken. There was cogent opinion evidence, however, that the crew was entitled to assume that their emergency had ended once the safe gear indication was obtained. The trial judge relied on the evidence of Captain Kowalik, an experienced Electra captain, who stated:

They continued the flight, and knowing the workings of the Electra undercarriage where the slipstream or the air forces, the air dynamic forces over the undercarriage actually assist the gear to come back into the down and lock position from the in-flight up position.

....

Now they lowered the gear at a higher speed, the lo and behold they got exactly the results that they were hoping for, an immediate three green lights. This did happen, so in a true technical sense, the emergency had been cleared. Therefore, the pilot in my opinion, Captain Lidgren, was entirely justified and correct in taking no further action with respect to any other agencies that could be involved.

45 Equally firm evidence was given by Captain Morrison, a pilot with 18,500 hours of flying experience. Answering hypothetical questions putting to him the situation in which the crew of CF-PAK found themselves, he said he would have proceeded precisely as they did. Of the takeoff he said that noise from "the undercarriage happens on many, many flights ...". Speaking to the question whether good airmanship called for a warning to the Tower in Edmonton, he gave this evidence:

"Q. Now sir, given the facts as I've asked you to assume them and given the conversations as you heard them on the cockpit voice recorder tape and as you read them in Exhibit 111, in your opinion, sir, would the pilot or a member of his flight crew have alerted the Tower in Edmonton in relation to the persistent red light and the problems that they were experiencing?

A. Not normally. Again, because it was such a common occurrence, because the pilot in command is in command and is in a decision-making category above most -- far beyond most normal vocational situations, he alone is responsible to decide whether or not that [*page468] aircraft is in an unsafe condition. By transmitting to tower he's asked a totally unqualified person with no interest and no knowledge of the situation to become involved, and in most cases that is not done.

Q. Now sir, if you would assume further that on leaving altitude the gear is selected and three greens -- three green lights are demonstrated, given the circumstances that have existed in the flight up until that time as demonstrated by the tape and the transcript to which we've referred, what in your opinion ought a prudent pilot to do with respect to the communications with the tower at that time?

A. Well, the suspected malfunction is now corrected. The three green lights are the indication that the gear is down and locked. We do have a mechanical down lock override whereby we know that it is extended and likely will not collapse. There is no chance that it's going to collapse, and if there was an opportunity and you could in fact see the undercarriage which on many aircraft you cannot, however if it was possible to see the undercarriage on a visual inspection simply to see that those undercarriage legs had extended would totally satisfy me. In otherwords, it would be a safe operation.

Q. In your experience, Captain Morrison, is the presence of a red in-transit light a circumstance which would normally call for a flight crew to report an emergency condition aboard the aircraft?

A. No, no flight crew is going to create an emergency out of an undercarriage warning light."

46 In my view the trial judge was entitled, on this evidence, to make the findings he did that the aircrew had not been negligent.

V Damage:

47 The parties are in agreement that the aircraft had a value of $ 950,000 at the time of the loss. Unfortunately they are in agreement about no other element of the damages.

48 Since Panarctic did not undertake the repair of the aircraft, but elected to sell the salvage, it had difficulty in proving the cost of repair. The appellant contends that proof of the cost of repair, either by Panarctic or by someone [*page469] else, is the only method by which Panarctic could prove its loss. Failure to prove the cost of repair, it is said, is failure to prove damages. The respondent, however, urges that its decision not to repair but to sell the salvage was a reasonable decision and its loss is established by deducting the recovery from salvage from the agreed value and adding other expenses.

49 Panarctic called two expert witnesses, Mr. Jenkins and Mr. Newnham, to discuss repair costs and salvage. These witnesses first estimated the diminution in market value of the aircraft and then concluded that the cost of repair would approximate that diminution in value. They recognized also that the estimate of repair costs had to have a large contingency element. Hidden damage might be present. Moreover, the cost to Panarctic in hiring the repair might well exceed the cost of repair to a buyer of the salvage who had his own repair facilities.

50 A number of competitive bids were obtained for the salvage, the highest of which, $ 235,000, was accepted. The salvage was sold to the highest bidder, American Jet Industries, which spent some $ 147,000 in Edmonton to make the aircraft flyable to its plant at Ventura, California where permanent repairs were effected. In my view Mr. Newnham was competent to express an expert opinion on the value of the salvage. In his knowledge of the industry, the bids of corporations known to him to be reputable and which express the bidder's willingness to contract were factors upon which he could base an opinion. That the opinion was not lightly given is shown by his refusal of the bids insofar as they related to Panarctic's stock of spare parts. The weight of his opinion was for the trial judge, who was also entitled to consider that there was virtually no contrary evidence.

51 In addition to the evidence of diminution of value and the evidence of the competitive bids, Panarctic attempted to obtain evidence of the cost to American Jet Industries of the repairs it performed, though of course the cost to it might not be the equivalent of Panarctic's cost. Correspondence between the two companies was put in evidence to show that American Jet was unable, or unwilling and not compellable, to separate out its repair costs as differentiated from its selling costs of the aircraft when repaired.

52 The essential problem in this aspect of the case is whether Panarctic took proper steps in mitigation of damage [*page470] when it sold the salvage. In my view the decision made by Panarctic to sell the salvage rather than repair the aircraft was a reasonable one given its position after the loss. Mr. Newnham had been involved in the major repair of two other large aircraft and was aware of the large contingency factor in repair costs. He was assisted by Mr. Jenkins who had a broad experience in the insurance adjusting of claims relating to aircraft and was familiar both with the cost of repairs and the market for repaired aircraft. These two experts concluded that the diminution of value so closely approximated the probable repair cost that the further cost of tearing down the engines would not be warranted as a matter of prudent mitigation of damages. That was, on the information available, a reasonable decision. They might have proceeded to greater cost of survey or to complete repair only to discover that the costs exceeded the value of the repaired aircraft.

53 In matters of mitigation the actions taken by a plaintiff must be reasonable and based on reasonable criteria, but

they will not be judged to a nicety against the best course which hindsight might disclose. A defendant judged liable as a tortfeasor, after denying all connection with the mishap, may not then appear at a later date to complain that the injured party did not adopt the best course to minimize damage unless the course taken was unreasonable. In Banco de Portugal v. Waterlow, [1932] A.C. 452, at 506, Lord MacMillan said:

"Where the sufferer from a breach of contract finds himself in consequence of that breach placed in a position of embarrassment the measures which he may be driven to adopt in order to extricate himself ought not to be weighed in nice scales at the instance of the party whose breach of contract has occasioned the difficulty. It is often easy after an emergency has passed to criticise the steps which have been taken to meet it, but such criticism does not come well from those who have themselves created the emergency. The law is satisfied if the party placed in a difficult situation by reason of the breach of a duty owed to him has acted reasonably in the adoption of remedial measures and he will not be held disentitled to recover the cost of such measures merely because the party in breach can suggest that other measures less burdensome to him might have been taken."

54 The onus on a plaintiff who claims for damage and on a defendant who claims that the plaintiff could have avoided some of the loss by proper steps in mitigation has recently [*page471] been stated in the Supreme Court of Canada in Red Deer College v. Michaels *(1975), 5 N.R. 99*; *57 D.L.R.(3d) 386*, at 390. Laskin, C.J.C., said:

"It is, of course, for a wronged plaintiff to prove his damages, and there is therefore a burden upon him to establish on a balance of probabilities what his loss is. The parameters of loss are governed by legal principle ... (that loss) is subject to the qualification that the defendant cannot be called upon to pay for avoidable losses which would result in an increase in the quantum of damages payable to the plaintiff ... If it is the defendant's position that the plaintiff could reasonably have avoided some part of the loss claimed, it is for the defendant to carry the burden on that issue, subject to the defendant being content to allow the matter to be disposed of on the trial judge's assessment of the plaintiff's evidence on avoidable consequences."

55 Though Red Deer College v. Michaels was a case in contract, the rules relating to mitigation of damage are the same in contract and in tort: The Liverpool (No. 2), [1963] P. 64, at 77-78; McGregor on Damages (14th Ed.), para. 230.

56 Thus if the defendant urged in this case that Panarctic should not have sold the salvage, but should itself have undertaken repairs, the defendant should have called evidence to establish that position. There was, ample positive evidence that the plaintiff's action was reasonable, and, indeed, virtually no evidence to the contrary. Whether a plaintiff has acted reasonably is a question of fact, not of law: Payzu v. Saunders, [1919] 2 K.B. 581, at 588; McGregor on Damages (14th Ed.), para. 234.

57 Prima facie the reasonable cost of repair of damaged property fixes the correct amount of a plaintiff's loss. This rule, originally stated for ship collision cases (see The London Corporation, [1935] P. 70 (C.A.)), has been extended to other cases. In Darbishire v. Warren, [1963] 1 W.L.R. 1067 (C.A.), Harmen, L.J., said at page 1071:

"... it has come to be settled that in general the measure of damage is the cost of repairing the damaged article."

58 The rule so stated is subject, however to the proviso that it is reasonable in the circumstances for the plaintiff [*page472] to undertake the repair. As in Darbishire v. Warren (supra) the cost of repairs may greatly exceed the replacement cost of the damaged article. Thus the plaintiff, considering his duty to mitigate his damage, may reasonably conclude that he should not undertake repair and adopt a different course. In this case, having taken that course, Panarctic could not be criticized for not proving the cost of a repair done by someone else over whom it had no control, which repair cost may not have been the same as its own. The plaintiff did, indeed, try to adduce that evidence and produced sufficient correspondence to establish that the evidence was not available. The evidence of sale of the salvage, and the expert evidence of the value of the salvage based upon competitive bidding coupled with the agreed value of the aircraft, in these circumstances established its loss. I would not vary the trial judge's disposition of damages.

59 In the result I would dismiss the appeal with costs to the respondent.

Appeal dismissed.

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