SUPREME COURT OF QUEENSLAND

CITATION:	*Peebles v Work Cover Queensland* [2020] QSC 106
PARTIES:	**DANIEL JOHN PEEBLES** (Plaintiff) **v** **WORK COVER QUEENSLAND** (Defendant)
FILE NO/S:	BS No 10750 of 2017
DIVISION:	Trial Division
PROCEEDING:	Trial
ORIGINATING COURT:	Supreme Court at Brisbane
DELIVERED ON:	27 May 2020
DELIVERED AT:	Brisbane
HEARING DATE:	10, 11 and 12 February 2020
JUDGE:	Jackson J
ORDER:	**The judgment of the Court is that:** **1. The defendant pay the plaintiff the sum of $764,345.12.** **2. The parties make written submissions on costs within 14 days.**
CATCHWORDS:	TORTS– NEGLIGENCE– DAMAGE AND CAUSATION– CAUSATION– UNDER CIVIL LIABILITY LEGISLATION–GENERALLY– where the plaintiff's claim was for a disabling back condition alleged to have occurred at work as a truck driver– where the defendant admitted a duty of care and a failure to provide safe plant and equipment– whether the admitted failure caused the plaintiffs back condition– where the defendant alleged that the plaintiff had a pre-existing condition and that the failure to provide safe plant and equipment only caused short term and transient episodic back pain– where the court found that the defendants failure to provide safe plant and equipment caused the plaintiffs condition.

TORTS– NEGLIGENCE– PROCEDURE AND EVIDENCE– EVIDENCE– WEIGHT AND CREDIBILITY OF EVIDENCE GENERALLY– where the defendant relied upon expert medical evidence as to causation– where the expert evidence was based on epidemiological studies and a guide arising from meta-analysis– where the expert evidence was relied upon as general disproof of causation in answer to evidence of clinical opinions of medical experts of specific causation.

Evidence Act 1977 (Qld), s 39PB

Superannuation Guarantee (Administration) Act 1992 (Cth), s

19(2)

Uniform Civil Procedure Rules 1999 (Qld), r 428(2)

Workers' Compensation and Rehabilitation Act 2003 (Qld), s270, s 305D, s305E, s306N, s 306J, s 306O

Workers' Compensation and Rehabilitation Regulation 2003

(Qld), schedule 12

Workers' Compensation and Rehabilitation Regulation 2014

(Qld), r 129, schedule 8, schedule 9, schedule 12

Amaca Pty Ltd v Booth (2011) 246 CLR 36, cited

Armstrong & Anor v First York Ltd [2005] 1 WLR 2751, cited

Borowski v Quayle [1966] VR 382, cited

Chester v Waverley Corporation (1939) 62 CLR 1, cited

Commissioner for Government Transport v Adamcik (1961) 106 CLR 292, discussed

Dobler v Halverson (2007) 70 NSWLR 151, cited

Fox v Wood (1981) 148 CLR 438, applied

Heywood v Commercial Electrical Pty Ltd [2013] QCA 270, discussed

Loveday v Renton [1990] 1 Med LR 117, cited

Malec v JC Hutton Pty Ltd (1990) 169 CLR 638, applied

Metro North Hospital and Health Service v Pierce [2018] NSWCA 11, cited

PQ v Australian Red Cross Society [1992] 1 VR 19, cited

R v Patel (No 6) [2013] QSC 64, cited

R v Sally Clark [2003] EWCA Crim 1020, cited

Ramsay v Watson (1961) 108 CLR 642, discussed

Shortell v BICAL Construction Ltd [2008] WL 2148256, cited

Sienkiewicz v Greif (UK) Ltd [2011] 2 AC 229, cited

State Government Insurance Commission v Oakley (1990) 10 MVR 570, discussed

State of New South Wales v Allen [2000] NSWCA 141, cited

Strong v Woolworths Ltd (2012) 246 CLR 182, applied

Tudor Capital Australia Pty Ltd v Christensen [2017] NSWCA 260, cited

Vadera v Shaw [1998] WLUK 437, cited

Wallace v Kam (2013) 250 CLR 375, applied

XYZ and Others v Schering Health Care Ltd [2002] EWHC 1420,cited

COUNSEL: C Heyworth-Smith QC and M Black for the Plaintiff
B Charrington for the Defendant

SOLICITORS: Travis Schultz Law for the Plaintiff
BT Lawyers for the Defendant

[1] **JACKSON J**: The plaintiff is a 38 year old man with a disabling back condition. His claim is that his condition is the outcome of an injury suffered at work as a truck driver. The principal issue in the case is whether the employer's admitted failure to provide safe plant and equipment was the cause of the plaintiff's condition.

[2] The plaintiff was born on 2 February 1982. At the age of 18, he left school three months before completing grade 12. He worked for four years as a factory hand. From approximately 2004, he worked as a truck driver with a number of employers. In some of the expert reports, he is described as being of or assumed to be of average

intelligence, but considers himself to have a "pretty bad" level of literacy. He has never worked in any clerical or administrative position and does not "get on" with computers. The jobs he considers he can do involve manual labour and some driving jobs, although in 2017 he said he would have liked to become a motorcycle mechanic. In the past, he has owned and ridden a trail bike as recreation.

[3] In early September 2011, he commenced driving for Kurtz Transport Pty Ltd. In 2013 he drove a night shift, Monday to Friday, commencing at seven o'clock in the evening through to four or five o'clock the following morning. The route was from Rocklea in Brisbane, via the Warrego Highway to Chinchilla and return. There were four hours of driving each way. For a period of about six weeks, when he drove that route in 2013, he was assigned a truck and trailer or trailers with a Western Star prime mover, registration 896 RAI ("Western Star Prime Mover").

[4] It is not in dispute now that the driver's seat in the Western Star Prime Mover was defective. The seat did not slide all the way forward. It would only slide about a third of the way from its rear position. Because of that, the plaintiff let the air out of the air suspension mechanism for the seat, to assist him to reach the clutch pedal with his left foot. That made the ride rougher. Second, to depress the clutch pedal, he would move the left side of his body forward toward the front of the seat. Third, the base of the seat on the right hand side was coming away from its mounting. That caused the plaintiff to lean or tilt to the left. Fourth, because the seat was further back than it might otherwise have been, he was required to lean forward, in an exaggerated position, to control the steering wheel.

[5] He described the roughness of the ride (due to the loss of the seat's air suspension) as feeling every pothole or bump in the road and observed that the Warrego Highway itself was in shocking condition in sections. Specifically, he mentioned a seven kilometre stretch on the western side of Dalby.

[6] However, during the six weeks in 2013 when the plaintiff drove the Western Star Prime Mover on the Chinchilla run, he did not suffer any particular injury. He could feel it "a little bit" when he got out of the prime mover. He was "a bit stiff" across his lower back. But that is hardly remarkable, after either a four or eight hour driving stint.

[7] In early 2014, the Chinchilla run was extended. Instead of terminating the outward leg at Chinchilla, it continued west along the Warrego Highway to Miles, then turned north to Wandoan, and return. There were five and a quarter hours of driving each way. On the Wandoan run, the plaintiff was assigned the Western Star Prime Mover again. Although he also drove another prime mover, on occasions, mainly he drove the Western Star Prime Mover. It still had the defective seat.

[8] The change to the Wandoan run resulted in the plaintiff's back and legs aching a lot more. Of course, he was in the truck for more than two extra hours per night. On occasions, going over a bump or into a pothole, the plaintiff described being projected up until the seatbelt caught him and "threw" him back onto the backrest of the seat, which hurt. He described that as something "that nearly winded me". He also described the roughness of the ride as having no comparison to a prime mover that did not have the defective seat.

[9] On the evening of Monday, 19 May 2014, the plaintiff informed his shift supervisor that his back was sore. They agreed that on the following shift he would change from the Western Star Prime Mover to a Volvo prime mover and he would drive a different route from Rocklea to Apple Tree Creek, which is not far north of Childers on the Bruce Highway and return. Apple Tree Creek is approximately 335 kilometres from Rocklea via the Bruce Highway, as compared to Wandoan, that is approximately 395 kilometres from Rocklea via the Warrego Highway.

[10] After driving the Western Star Prime Mover on the Wandoan run on Monday 19 May 2014, the plaintiff's back was sore. Significantly, as will appear, he had pain in his left buttock and halfway down his thigh, and along the muscle on the top of his leg, that is, the quadriceps.

[11] From the next night, the plaintiff drove the Apple Tree Creek run in the Volvo prime mover.

[12] On the morning of 29 May 2014, the plaintiff consulted his general practitioner, who noted that he had a ten day history of back spasms and that the seat on the truck was broken. On examination, the general practitioner noted that there was restriction and crepitus was present with tenderness of the back. The plaintiff was referred for diagnostic imaging by way of computer tomography ("CT") scan of his lumbar spine.

[13] On that day, Queensland X-Ray performed axial plane CT scans of the plaintiff's spine from the upper T10 vertebrae to the mid-sacrum with sagittal plane reconstruction.

[14] On 29 May 2014, at work, the plaintiff completed an operational report and a hazard incident or accident analysis relating to 19 May 2014 stating that he had hurt his lower back and left hip while driving the Western Star Prime Mover on the night of Monday 19 May 2014.

[15] On 30 May 2014, the general practitioner certified the plaintiff for a period off work. The plaintiff said that it was a period of three and a half weeks. During that period, the general practitioner referred the plaintiff to two orthopaedic surgeons (the reason for the dual referrals is not clear) but the plaintiff did not make an appointment with either of them. He returned to work after a period of weeks.

[16] After the plaintiff returned to work, he resumed driving on the Apple Tree Creek run in the Volvo prime mover. He only drove the Western Star Prime Mover a couple of times after that, but by then the seat had been replaced.

[17] Over the next few months, his back was quite sore after he finished a shift, but it was not too bad when he got up the next day after going to bed. He continued to work. By about November 2014, he described the pain in his back and leg as "okay", excluding Sundays, being the day on which he did not work. He could not explain why.

[18] I note that between August and November 2017 the plaintiff was interviewed by Dr Ken Arthur for the purposes of this case. In taking the plaintiff's history, Dr Arthur recorded that the plaintiff said that only a few weeks before 22 December 2014 he had been talking to a friend and told him how good his back was and that he had ridden his dirt bike once or twice in the period from May to December 2014, without any

restriction in movement. He said to Dr Arthur that he was aware of pain if he overdid things but generally it had resolved the next morning.

[19] On 22 December 2014, the plaintiff was getting ready for work. He was sitting in his garage and had his legs up on a couch putting on his socks when he sneezed. He felt the "most horrendous pain" he had ever felt in his life. The pain was across his lower back and down his left leg.

[20] After about five minutes, the pain became a little less and he went to work. He drove the Wandoan run that night in the Volvo prime mover. When dropping off a trailer at Miles, he was unhooking the trailer, by undoing the air lines, pulling the pin and winding down the legs. He found that he could not put any weight on his left leg whatsoever because of the pain. He drove back towards Dalby and stopped outside town. He called a supervisor who instructed him to leave the truck and go to hospital. He called an ambulance which took him to the Dalby Hospital at 3:00am on 23 December 2014. He was given pain medication and at about 5:00am he was picked up by the employer's Dalby depot manager. He then hitched a ride on one of the employer's trucks coming from the west into Toowoomba where he transferred to another truck towards Brisbane.

[21] At 2:00pm on 23 December 2014, the plaintiff consulted his general practitioner who prescribed Panadeine Forte and Diazepam and referred the plaintiff for diagnostic imaging of CT scans of his lumbar spine.

[22] On the same day, Queensland X-Ray performed scans of the plaintiff's lumbar spine with multiplanar reconstructions. The images were formed to highlight the bone structures as well as intervertebral discs and soft tissues.

[23] At the end of January 2015, the plaintiff consulted Dr John Albietz, an orthopaedic surgeon specialising in adult and paediatric spinal surgery. Dr Albietz diagnosed him as having a large left paracentral disc protrusion with a lumbrosacral junction compressing the left traversing S1 nerve route. He further diagnosed the plaintiff as having a left S1 radiculopathy from a large left L5-S1 disc protrusion.

[24] Dr Albietz recommended a six week course of physiotherapy but the plaintiff could not afford it. Another option was to trial a left S1 nerve route block, but that was not done. The symptoms failed to improve. Dr Albietz proposed surgery involving a left L5-S1 microdiscectomy and rhizolysis to recreate the space for the traversing S1 nerve route.

[25] On 22 April 2015, Dr Albietz performed a left-sided microdiscectomy and rhizolysis at the L5-S1 disc level.

[26] On 26 September 2015, Queensland X-Ray performed MRI scans of the plaintiff's lumbar spine. The findings were that the L5-S1 disc was degenerate with narrowing and reduced signal. There was a moderate sized left paracentral disc protrusion involving the left S1 nerve route. There had been a left-sided laminectomy with an enhancing path due to granulation tissue following surgery. The remaining discs had normal signal and contour. The conclusion was that there appeared to be a recurrent left paracentral L5-S1 disc protrusion involving the left S1 nerve route.

[27] On 29 October 2015, Dr Albietz performed an L5-S1 posterior instrumented fusion, decompression and interbody fusion.

[28] On 3 November 2015, Queensland X-Ray performed an X-ray of the plaintiff's lumbar spine. The post-operative films showed a posterially instrumented anterior interbody fusion at L4/L5 with rods and screws. No immediate complication was seen. There appears to be a confusion between this report and Dr Albietz's description of the fusion operation he performed, as being at L5-S1 level. The confusion stems from the plaintiff's transitional vertebra representing partial lumbarisation of the S1 vertebra.

[29] On 27 April 2016, Queensland X-Ray performed an X-ray of the plaintiff's lumbar spine. The report noted that there was posterior fusion with rods and screws in place at the L5-S1 level, correcting the description of the level in the prior post-operative x-ray report. There was also a disc spacer in situ. There was no evidence of loosening of the hardware noted. The vertebral body alignment appeared normal.

Causation – legal framework and principles

[30] Both parties relied on the following statement by Malcolm CJ in *State Government Insurance Commission v Oakley*:

> "… where the negligence of a defendant causes an injury and the plaintiff subsequently suffers a further injury, the position is as follows:
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> (1) where the further injury results from a subsequent accident, which would not have occurred had the plaintiff not been in the physical condition caused by the defendant's negligence, the added damage would be treated as caused by that negligence;
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> (2) where the further injury results from a subsequent accident, which would have occurred had the plaintiff been in normal health, but the damage sustained is greater because of aggravation of the earlier injury, the additional damage resulting from the aggravated injury should be treated as caused by the defendant's negligence; and
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> (3) where the further injury results from a subsequent accident which would have occurred had the plaintiff been in normal health and the damage sustained includes no element of aggravation of the earlier injury, the subsequent accident and further injury should be regarded as causally independent of the first." [1]

[31] That statement, made in 1990, preceded the statutory alteration of common law principles of causation that apply to the tort of negligence by the provisions introduced following the Ipp Report. The present case is governed by those provisions contained in Chapter 5, Part 8, Division 3, of the *Workers' Compensation and Rehabilitation Act* 2003 (Qld) ('WCRA'). In particular, s 305D and s 305E provide as follows:

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[1] (1990) 10 MVR 570.

"**305D General principles**

(1) A decision that a breach of duty caused particular injury comprises the following elements—

(a) the breach of duty was a necessary condition of the occurrence of the injury (***factual causation***);

(b) it is appropriate for the scope of the liability of the person in breach to extend to the injury so caused (***scope of liability***).

(2) In deciding in an exceptional case, in accordance with established principles, whether a breach of duty—being a breach of duty that is established but which can not be established as satisfying subsection (1)(a)—should be accepted as satisfying subsection (1)(a), the court is to consider (among other relevant things) whether or not and why responsibility for the injury should be imposed on the party in breach.

(3) If it is relevant to deciding factual causation to decide what the worker who sustained an injury would have done if the person who was in breach of the duty had not been so in breach—

(a) the matter is to be decided subjectively in the light of all relevant circumstances, subject to paragraph (b); and

(b) any statement made by the worker after suffering the injury about what he or she would have done is inadmissible except to the extent (if any) that the statement is against his or her interest.

(4) For the purpose of deciding the scope of liability, the court is to consider (among other relevant things) whether or not and why responsibility for the injury should be imposed on the party who was in breach of the duty.

305E Onus of proof

In deciding liability for a breach of a duty, the worker always bears the onus of proving, on the balance of probabilities, any fact relevant to the issue of causation."

[32] There is a continuing tendency for the practising profession to refer to cases about causation in the tort of negligence at common law, even though statutory provisions such as ss 305D and 305E have been in operation now for more than 15 years. While cases at common law may be illustrative, the applicable principles are those required by the statutory provisions. Those informing principles have now been discussed by the High Court in several cases.

[33] In *Strong v Woolworths Ltd*,[2] the majority of the High Court held that the "factual causation" element under s 305D(1)(a) is a statutory statement of the "but for" test of causation,[3] that it requires proof that the defendant's negligence was a necessary condition of the occurrence of the particular harm, and that a necessary condition is a condition that must be present for the occurrence of the harm.[4] The majority continued:

> "However, there may be more than one set of conditions necessary for the occurrence of particular harm and it follows that a defendant's negligent act or omission which is necessary to complete a set of conditions that are jointly sufficient to account for the occurrence of the harm will meet the test of factual causation within [the section]. In such a case, the defendant's conduct may be described as contributing to the occurrence of the harm."[5]

[34] The majority then considered the different ways in which the expression "material contribution" had come to be used in the context of causation in tort.[6] It is unnecessary to consider that in the present case, as the plaintiff does not rely upon s 305D(2). The plaintiff does not submit that this is an exceptional case where factual causation cannot be established, but it should nevertheless be accepted as being satisfied.

[35] The correct approach to the statutory causation question was re-emphasised by the High Court in *Wallace v Kam*[7] as follows:

> "The distinction now drawn by [s 305D(1)] between factual causation and scope of liability should not be obscured by judicial glosses. A determination in accordance with [s 305D(1)(a)] that negligence was a necessary condition of the occurrence of harm is entirely factual, turning on proof by the plaintiff of relevant facts on the balance of probabilities in accordance with [s 305E]. …
>
> Thus, as Allsop P explained in the present case:
>
> > '[T]he task involved in [s 305D(1)(a)] is the elucidation of the factual connection between the negligence (the relevant breach of the relevant duty) and the occurrence of the particular harm. That task should not incorporate policy or value judgments, whether referred to as 'proximate cause' or whether dictated by a rule that the factual enquiry should be limited by the relationship between the scope of the risk and what occurred. Such considerations

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2 (2012) 246 CLR 182, 190 [18] – [20].

3 (2012) 246 CLR 182, 190 [18].

4 (2012) 246 CLR 182, 191 [20].

5 (2012) 246 CLR 182, 191 – 192 [20].

6 (2012) 246 CLR 182, 192 [22].

7 (2013) 250 CLR 375.

> naturally fall within the scope of liability analysis in [s 305D(1)(b)], if [s 305D(1)(a)] is satisfied, or in [s 305D(2)], if it is not.'
>
> The determination of factual causation in accordance with [s 305D(1)(a)] involves nothing more or less than the application of a "but for" test of causation. That is to say, a determination in accordance with [s 305D(1)(a)] that negligence was a necessary condition of the occurrence of harm is nothing more or less than a determination on the balance of probabilities that the harm that in fact occurred would not have occurred absent the negligence."

[36] Returning to the parties' reliance on *Oakley's case*, it may be relevant in some cases to distinguish between different factual scenarios such as those described in that case. That was done in *Wallace v Kam* in relation to medical negligence comprising a negligent failure to warn.[8]

[37] It may also be observed that the first and second classes identified by Malcom CJ in *Oakley's case* correspond to situations sometimes described as the "eggshell skull rule",[9] or where a plaintiff has increased vulnerability from an initial injury.[10] However, it is unnecessary to approach the problem in the present case by reference to those situations. To do so risks the error of putting aside the critical statutory question of factual causation as it applies to the facts of the present case.

[38] The particular harm the plaintiff alleges in the present case is two-fold. First, the injury comprising the pain and incapacity he suffered for a period commencing on 20 May 2014 for approximately six weeks. Second, the injury comprising the pain and incapacity he suffered on 22 December 2014 and thereafter up to the present day and continuing into the future. The question is whether the breach of duty was a necessary condition of the occurrence of that harm.

[39] Bearing in mind that the onus of proof of the relevant facts is on the plaintiff throughout, it is apt that the question is framed as whether the harm that in fact occurred would not have occurred absent the negligence. But, without losing sight of the onus of proof, the question can also be framed as whether the harm that occurred would have been suffered in any event.

[40] The relevant questions conveniently resolve into whether the plaintiff's pain and suffering and temporary disability suffered in the period following 20 May 2014 for approximately six weeks would not have occurred absent the negligence and whether the plaintiff's subsequent injury and now permanent disability from 22 December 2014 to the present time and into the future would not have occurred absent the negligence or whether either of those harms would have occurred in any event.

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8 (2013) 250 CLR 375, 384 [18] – [20].

9 *Chester v Waverley Corporation* (1939) 62 CLR 1, 9 and 26.

10 See Luntz, Assessment of Damages for Personal Injury and Death, 4th Ed, (2002), [2.5.1] – [2.5.4].

Radiological evidence

[41] Three of the CT scans of the plaintiff's lumber spine dated 5 December 2011, 29 May 2014 and 23 December 2014 constitute significant contemporaneous radiology and were the subject of reports by radiologists on the scans.

[42] There were also later MRI scans and X-Rays that were performed during the process of diagnosis and treatment of the plaintiff's condition from time to time but they are less important to the question of causation. None of the images of relevant CT or MRI scans or X-Rays was tendered in evidence. However, most of the medical expert witnesses reviewed the radiological images (except Dr Ballenden) and the radiologists' reports were tendered.

[43] The CT scan radiology report by Dr Tilse dated 5 December 2011 was as follows:

> "History: Right paravertebral pain. Technique: Axial and sagittal scans have been performed through the lower lumbar spine from the mid body of L2 through to the upper body of S1 for disc and bone windows. Findings: The bony spinal canal is quite adequate at all levels. There is no abnormality shown in the lumbar discs of L3-4, L4-5 or L5-S1. No abnormality of the spinal thecal sac or nerve roots at these disc levels has been shown. Summary: Normal examination."

[44] The CT scan radiology report by Dr Albert Chong dated 29 May 2014 reported that the plaintiff's S1 joint was lumbarised, but that no focal bone lesion was noted. In the L4/L5 disc there was a minimal loss of height and mild annular bulging. There was calcification of the posterior margin of the L5-S1 and S1/S2 discs. In the L5-S1 disc, there was moderate loss of height and moderate annular bulging with a small left paracentral herniation indenting the thecal sac and displacing the proximal portion of the left S1 nerve route.

[45] The CT scan radiology report by Dr Fergus Legh dated 23 December 2014 reported that the plaintiff had disc degeneration with significant loss of disc height and spondylosis of both L4/L5 and L5-S1 levels. At the L4/L5 level, there was significant central as well as paracentral disc protrusion with spondylosis, and there was compression of the thecal sac and some compression of the proximal L5 nerve routes on both sides, more marked on the left. There was no evidence of any L4 nerve route compression. At L5-S1 there was chronic disc degeneration with spondylosis and minor spondylitic impression on the thecal sac. There may have been minor compression of the proximal S1 nerve routes on both sides, although that was much less marked than at the L4/L5 level. No neuroforaminal narrowing or L5 nerve route compression that was observed at that level. The remaining discs were normal.

[46] On 17 January 2015, Queensland X-Ray performed an MRI of the plaintiff's lumbosacral spine. The report noted a transitional vertebrae representing partial lumbarisation of the S1 vertebrae. The findings included a moderate narrowing of the L5-S1 intervertebral disc space with desiccation of that disc present. There was a broad base left central and subarticular disc protrusion. It impinged on the left S1 nerve route in the subarticular space compressing it against the left S1 lamina. The disc protrusion extended across the midline but did not impinge on the right S1 nerve route. There was no foraminal component of the disc protrusion. The other lumbar discs were normally hydrated.

Pre-existing symptomatic degenerative disease of lumbar spine – earlier episodes

[47] The defendant submits that driving with a defective seat caused the plaintiff no more particular harm than a transient and short-term onset of episodic back pain.

[48] The basis of that submission is the alleged pre-existing symptomatic degenerative disease in the plaintiff's lumbar spine. The relevant date to establish that condition is before the onset of back pain from 19 or 20 May 2014.

[49] The defendant relies on three earlier episodes as supporting evidence.

[50] First, on 4 November 2003, while working as a factory hand, the plaintiff consulted a general practitioner who noted that he presented with generalised back pain after lifting 25-40 kilogram bags. The notes record on examination that there was: "No deformity. Joint stiffness. No joint swelling. No restricted movement. No sciatica. No neck pain." He was certified for a couple of days off work.

[51] Second, on 21 December 2006, the plaintiff consulted a general practitioner who noted that he presented with lower back pain for two days after moving and lifting heavy things at work. The notes record that on examination he had a tender lumbar spine, good range of movement and straight leg raises and no paraesthesiae. He was certified for a couple of days off work

[52] The defendant did not ask questions of any of the expert medical witnesses about these two episodes to establish that they supported a finding that the plaintiff had a pre-existing symptomatic degenerative disease in the lumbar spine. In the absence of expert opinion on the question, other than the references in Dr Ballenden's report discussed later, I decline to use them as doing so.

[53] Third, on 26 November 2011, the plaintiff consulted a general practitioner who noted that he presented with back pain and restricted movement for 10 days. In evidence the plaintiff described the episode as resulting from lifting truck tyres. He was referred for diagnostic imaging by CT scans of his lumbar spine and prescribed Mobic capsules.

[54] The result of the CT scans was Dr Tilse's report dated 5 December 2011. That report does not support a finding of a pre-existing degenerative disease of the plaintiff's lumbar spine as at December 2011.

Pre-existing symptomatic degenerative disease of lumbar spine – risk factors

[55] Another source of the defendant's submission in favour of the alleged pre-existing symptomatic degenerative disease in the plaintiff's lumbar spine is in the evidence of a journal article attached to one of the medical reports: Baldwin N, "*Lumbar Disc Disease: The Natural History*".[11]

[56] The article was admitted into evidence without objection as an attachment to one of the expert medical reports. The admissibility of such an article has been considered in a number of cases, including the use that may be made of both the article as a hearsay statement and the hearsay sources of information on which expert opinion contained in the article may rely.[12]

[57] The defendant submits that the article identifies the "likely" age for the development of lumbar disc herniation to be in the range of 30-50 years (the article says that the phenomenon of disc herniation in conjunction with clinical symptoms most commonly occurs in that range but there is no prevalence that would define the norm) and that the

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11 (2002) Neurosurg Focus 13(2), 1.

12 *R v Patel* (No 6) [2013] QSC 64, [7]-[10]; *PQ v Australian Red Cross Society* [1992] 1 VR 19; 34-37; *Borowski v Quayle* [1966] VR 382, 385-388.

risk factors for disc herniation include driving of motor vehicles, sedentary occupation, vibration, smoking, physical inactivity, increased body mass and a tall stature.

[58] The defendant submits that some of these factors apply to the plaintiff as relevant to whether the particular harm suffered by the plaintiff was caused by them. This direct reasoning is flawed in my view. Epidemiological risk factors of those kinds are not directly applicable as causal mechanisms. An example was raised in the evidence. I asked Dr Ballenden as to the relevance of smoking. He said that the possible mechanism was theoretical, that blood vessels in the spine shrink due to smoking but that no one had been able to get to the bottom of it. Associate Professor Fearnside did not understand how vascular shrinkage would be involved. In my view, smoking is an example of the difference between something that is shown to have a statistical association and something that can be considered a cause.

[59] More importantly, in my view, the conclusions of the article were not directed to the relative significance of the risk factors in the causal process of a disc herniation in conjunction with clinical symptoms. They were directed to the efficacy of surgical treatment of lumbar disc disease as opposed to other treatments and to the particular indications for repeated or specific forms of surgery in comparison to other treatments.

[60] In my view, the factors relied on by the defendant from the article do not sufficiently support a finding that the plaintiff had a pre-existing symptomatic degenerative disease of his lumbar spine before the episode of May 2014.

Dr Ballenden

[61] The final source of the defendant's submission in favour of the alleged pre-existing symptomatic degenerative disease in the plaintiff's lumbar spine is in the evidence of Dr Gavin Ballenden, an occupational physician.

[62] It is necessary to analyse the separate strands or bases of support contained in Dr Ballenden's report. Principally, the opinions expressed in the report are supported by reference to epidemiological studies or medical articles.

[63] However, there are other sources or matters of information.

[64] For example, there are a number of references in the report to evidentiary assertions by the defendant that the seat in the Western Star Prime Mover was not defective. What role those allegations played in the original report was not clear – were they factual assumptions on which the opinions in the report were based? In any event, in a file note of a conference between Dr Ballenden and the defendant's lawyers that occurred shortly before the trial, Dr Ballenden stated that his opinions were not altered at all by reversing those assumptions. If that is so, it might be questioned that Dr Ballenden included irrelevant assumptions in the report, in the way that an advocate arguing the defendant's case might do, rather than adopting the position of an independent expert.

[65] A point of greater substance is that Dr Ballenden appears to have formed a number of other unclear factual assumptions as to the conditions under which the plaintiff was driving the Western Star Prime Mover as the basis for his opinions. The relevant assumptions included:

(a) the period that the plaintiff drove with a defective seat, described by him as "six weeks" (as compared with the plaintiff's evidence that it was 6 weeks in 2013, followed by the period from early 2014 to 20 May 2014).

(b) the extent that the plaintiff had to lean and twist in the seat in order to drive the Western Star Prime Mover about which he did not have particular information (as compared with the plaintiff's description set out previously);

(c) how rough the road on which the plaintiff drove with the defective seat was, described by Dr Ballenden as "smooth roads" (as compared with the plaintiff's evidence of the condition of the Warrego Highway);

(d) as previously discussed, that the plaintiff had a pre-existing degenerative condition of his lumbar discs, when he had not personally reviewed any of the radiology (as compared with Dr Tilse's radiology report upon the CT scans dated 5 December 2011 and the independent examinations of the radiology by the other expert medical witnesses). [13]

[66] One of the critical requirements of a persuasive expert report is that it clearly identifies the factual assumptions on which the opinions expressed are based. It is only when the assumptions are identified that the foundation of the opinion can be seen and the corresponding strength of the opinion assessed. This is why *Uniform Civil Procedure Rules* 1999 (Qld) r 428(2) requires:

> "(2) The report must include the following information—
>
> (a) …
>
> (ii). all material facts, whether written or oral, on which the report is based;
>
> (iii) references to any literature or other material relied on by the expert to prepare the report;"

[67] The way that Dr Ballenden's report is structured does not assist in assessing the strength of his opinions. He is not alone in that. Too often medical reports in personal injury cases do not conform to these fundamental requirements. The problem is exacerbated by the provision of the *Evidence Act* 1977 (Qld) under which expert evidence is to be heard by telephone unless a contrary order is made.[14] That provision is no doubt convenient for busy medical practitioners but it places the court at a disadvantage in comprehending and weighing the evidence that is given.

[68] Some of these difficulties may be illustrated by reference to one paragraph of Dr Ballenden's report:

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13 I note that Dr Licina also considered that the plaintiff had some pre-existing degeneration, but Dr Licina would have been able to form his own opinion as to the extent of the degeneration by reviewing the scans.

14 *Evidence Act* 1977 (Qld), s 39PB.

> "The documents do show that this man had a significant episode of back pain previously, which has tended to be trivialised in reports. He had a presentation of such significance for low back pain in 2011 that he required a CT scan, dated 5 December 2011. CT scans are not done for trivial back presentations. His history was ten days of low back pain of gradual onset with no precipitating factors. Clinical notes were scant - he must have recovered."

[69] In my view, the paragraph contains value laden opinion that does not amount to appropriate independent expert opinion offered in a report for evidence in court. Dr Ballenden does not identify who has "trivialised" the "significant episode". To say that CT scans are not done for trivial back presentations is not, in my view, a proper basis for an expert opinion that the episode was diagnostically significant in this case. The statement that there was no precipitating factor may reflect the general practitioner's note, but the plaintiff said in evidence that it was after lifting and moving truck tyres. Dr Ballenden revealed in cross examination that (unlike other expert medical practitioners who gave evidence) he had not viewed the CT scans or MRI scans (that were available to other medical witnesses) including the CT scans for Dr Tilse's report dated 5 December 2011 but had limited himself to the radiologists reports on the scans. In my view, Dr Tilse's report does not support Dr Ballenden's conclusion of a "significant episode" in November 2011.

[70] In my view, the strong impression that emerges from Dr Ballenden's report is that his opinions hang upon the epidemiological meta-analysis of relevant articles and studies that he sets out in his report taken from the American Medical Association Guide to the Evaluation of Disease and Injury - Causation 2nd edition 2014 ("2014 AMA Guide").[15] He used the 2014 AMA Guide, in particular, in opining upon the possible causal relationship between driving the Western Star Prime Mover with the defective seat and the plaintiff's injuries. That statement of conclusions was:

> "The American Medical Association (AMA) Guidelines to the 'Evaluation of Disease and Injury Causation' 2nd Ed. 2014 and the AMA 'Guides to the Evaluation of Work Ability and Return to Work' 2011 summarise the situation:
>
> Most authors agree that despite modern medicine, pain generating structures, for most adults with low back pain, cannot be reliably or scientifically established, or identified. While multiple articles are published on disc, facet joints and sacroiliac joints as a cause or origin of pain, there is no agreement on how these syndromes can be reliably diagnosed. For the most part, it is 'non-specific', or just 'low back pain'.
>
> Low back pain is the most common musculoskeletal condition, with a lifetime prevalence 'non-specific low back pain', of up to 80 - 90% and an annual prevalence between 25 and 60% (Prevalence is the number of

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[15] Dr Ballenden's report attached a list of 183 articles reviewed for the Guide. He added references to five other articles selected by himself.

cases of a disease that are present in a particular population at a given time).

Most people who experience activity limiting low back pain, go on to have recurrent episodes and estimates of recurrence, at one year, range from 24 to 80%.

Radiographic changes consistent with lumbar disc degeneration are almost universal in adults and have been proposed, but not validated, as one of the main causes of back pain.

Researchers identify that at least 30% of adults from the age of 35 years onwards have asymptomatic disc herniation. As age increases that percentage increases proportionately.

The research to date has identified far more than 100 potential risk factors for low back pain.

One such factor has historically been attributed to heavy physical loading, often associated with occupation and this has been a suspected risk factor for disc degeneration for years, explained by wear and tear. Hence perhaps the comments of doctors to date.

However modern research and understanding of genetic influences show that degenerative disc disease is hereditary. Studies of twins have been revealing in this regard. Axial spinal loading, specifically in occupation and sport, has been relegated to a minor, if at all, contributor to the degeneration.

Previous interpretations of the effects of heavy physical loading on changes to the disc have now been challenged and the findings of such a contribution are inconclusive and cannot be demonstrated.

For example, studies of weightlifters, bodybuilders and sports people performing extensive and intensive weightlifting exercises, showed no increase risk in the development of degenerative disc disease or disc herniation. Equally manual workers, as a group, have no increased risk over anyone else in the general population.

Studies in the USA military services, involving 1.2 million people, showed that the ultimate risk is simply age and the more senior military staff and less physically active had issues, whereas the young physically active and those undergoing arduous physical activity had little in comparison.

The metanalysis studied heavy physical work including lifting, strenuous movements, manual handling, various postures, awkward occupational postures, repetition, bending and twisting and found no statistically significant association for the onset of back pain in any combination of working time, trunk rotation, flexion, or the amount of weight lifted.

> This is contrary to most people's beliefs and those previously held.
>
> In summary, the review found that **neither ergonomic factors nor musculoskeletal factors had sufficient evidence to attribute the cause of lumbar disc herniation, or back pain, to minor trauma (trauma excluding motor vehicle accident for example and falls), single events, repetitive mechanism, or ergonomic risk factors.**
>
> The review advised that in cases where there was a temporal association between work and the onset of symptoms, for example of disc herniation that this logically represents 'when the herniation occurred, but not why it occurred'."

Epidemiological and scientific evidence

[71] Dr Ballenden's views are based on the 2014 AMA Guide and the unidentified meta-analysis underlying it. Legal proof and some of that research may be uneasy bedfellows. To begin with, an appreciation of the differences in scientific acceptance of the different types of evidence-based research may be relevant. They were alluded to by Dr Ballenden in the report but are more helpfully summarised in a recent article[16] by ranking the levels of evidence based research reliability in descending order as follows:

1. empirically based meta-analyses;
2. systematic reviews;
3. randomised control trials;
4. case-controlled studies; and
5. anecdotal experiences or individual case studies.

[72] On that hierarchy, the meta-analysis underlying the 2014 AMA Guide referred to by Dr Ballenden might rank highly, but neither the analysis nor its results were explicitly identified. Instead, Dr Ballenden relied principally upon the text of the 2014 AMA Guide. Such guides have been described as follows:

> "Medical societies create committees of respected physicians to review the scientific literature and create evidence-based medicine practice guidelines. These guidelines are published to assist practitioners in making daily clinical decisions. Committee members who design the guidelines often debate at length about the wording of the guidelines. As a result, the final publication often represents a compromise between differing physician opinions.

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16 Mangrum W and Mangrum R, "Evidence-Based Medicine in Expert Testimony", (2019) 13 Liberty UL Rev 337.

> Physicians and experts generally view practice guideline recommendations as a high level of evidence, comparable to systematic reviews and meta-analysis."[17]

[73] But the statement of conclusions from the 2014 AMA Guide relied upon by Dr Ballenden is not unqualified. In particular, exception is provided for as follows:

> "Axial spinal loading, specifically in occupation and sport, has been relegated to a minor, if at all, contributor to the degeneration."

[74] To the extent that Dr Ballenden relied upon particular epidemiological studies, he did not set them out clearly, or the results from them on which he relied, although he indirectly refers to four such studies in his report, and the extract he sets out from the 2014 AMA Guide indirectly refers to others. The failure to do so undermines the ability of the court to assess the weight to be given to the opinions of Dr Ballenden in accordance with authority, accepting that the admissibility of those opinions was not challenged.

[75] Recent years have seen an increase in the use of epidemiology in medical expert evidence in court proceedings in this country and elsewhere. The growth has been most marked in the area of toxic tort litigation but is not confined to that area. For various reasons, the place of primary growth and focus on such evidence is the United States,[18] but other common law jurisdictions, including the United Kingdom[19] and this country are not exempt. An obvious area of focus are cases of mesothelioma, which is the only context of which I am aware where the High Court has recently considered such evidence in depth.[20]

[76] The intersection of statistical analysis that underlies an epidemiological study and the processes of legal proof of causation raises a number of difficulties of which courts need to be aware. Some of them stem from the use of epidemiological studies as a basis to reach an inference that a subject of interest *can* cause harm of the kind which a plaintiff alleges. For reasons that don't need to be explained here, that step is identified in the United States cases as proof of "general causation" which may be required in toxic tort cases, in addition to proof of "specific causation" that the plaintiff did suffer the harm from the subject of interest, such as a particular drug or agent. That is not the problem in the present case. Rather, it is the defendant which seeks to deploy the epidemiological studies and the 2014 AMA Guide arising from the meta-analysis as general disproof of causation in answer to the plaintiff's particular proof based on clinical opinions of medical experts of specific causation.

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17 Mangrum W and Mangrum R, "Evidence-Based Medicine in Expert Testimony", (2019) 13 Liberty UL Rev 337.

18 See, for example, Restatement (Third) of Torts: Liability for Physical and Emotional Harm, s 28 (2010), October 2019 Update.

19 *Sienkiewicz v Greif (UK) Ltd* [2011] 2 AC 229; *Shortell v BICAL Construction Ltd* [2008] WL 2148256; *XYZ and Others v Schering Health CareLtd* [2002] EWHC 1420; *Vadera v Shaw* [1998] WLUK 437; *Loveday v Renton* [1990] 1 Med LR 117.

20 *Amaca Pty Ltd v Booth* (2011) 246 CLR 36, 47-48 [22]-[23], 67-68 [86[-[88].

[77] Recognised difficulties with evidence of epidemiological studies stem from the misuse of statistically significant or insignificant associations, confidence intervals and levels of confidence, as measures of legal causal probability.[21] This can result in a legal train wreck, as it did in the infamous 2003 case of *R v Sally Clark*.[22] There are other points, which do not require detailing in these reasons. The overall point is that use of statistical evidence and epidemiological studies requires an understanding of the concepts and the mathematics utilised and the differences between them and the concepts and process of legal proof of factual causation.[23]

[78] As well, there can be other problems. For example in *Loveday v Renton*,[24] the question was whether a large randomised controlled trial based epidemiological study (high in the order of ranking of levels of evidence-based research) that found that the pertussis vaccine can cause acute neurological reactions supported findings that the plaintiffs' allegations that their brain injuries were caused by the vaccine. The court found that the study's attributes and flaws, notwithstanding its size, meant that it did not.[25]

[79] I have already noted that the defendant seeks to deploy Dr Ballenden's evidence as to the 2014 AMA Guide in a negative way, namely that it excludes a finding of specific causation in the plaintiff's case, notwithstanding contrary clinical opinions of other medical expert witnesses.

[80] The theory advanced in support of that conclusion is that "neither ergonomic nor musculoskeletal factors [are] sufficient evidence to attribute the cause of lumbar disc herniation, or back pain, to minor trauma (trauma excluding motor vehicle accident for example and falls), single events, repetitive mechanism, or ergonomic factors." I will call this the "negative general causation" argument.

[81] A surprising thing, in my view, is that if the negative general causation argument were true it has not been deployed at any time before this case in relation to lumbar disc injuries. I note also that, generally speaking, evidence of epidemiological studies is not used in this way in tort litigation. Mostly, it is used by plaintiffs to prove general causation and the question will be whether a plaintiff can prove causation with only epidemiological support.[26]

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21 Tabatabaie T, "Decoding General causation Data" (2019) 55-APR Trial 28; Woodside F and Davis A, "The Braford Hill Criteria: The Forgotten Predicate", (2013) 35 T Jefferson L Rev 103.

22 [2003] EWCA Crim 1020, [172]-[180].

23 For example, Jay R, "Standards of proof in law and science; distinctions without a difference?" (2016) JPI Law 1; Gold S, "The Reshapement of the False Negative Asymmetry in Toxic Tort Causation", (2011) 37 Wm Mitchell L Rev 1507.

24 [1990] 1 Med LR 117.

25 [1990] 1 Med LR 117, 170-181.

26 Gold S, "The Reshapement of the False Negative Symmetry in Toxic Tort Causation", (2011) 37 Wm Mitchell L Rev 1507, 2011.

[82] However, in other contexts, similar negative general causation arguments can arise.[27] One is that of trauma-based leukaemia or other cancers cases, mentioned below. Another is that of cerebral palsy cases where the mechanism of injury is said to be foetal distress or hypoxia that could have been avoided if caesarean delivery had been performed or performed earlier by reference to foetal heart monitoring.[28]

[83] The role of the fact-finder in giving weight to expert evidence has been considered at the highest level of authority.[29] A counterintuitive example, perhaps, may be found in *Commissioner for Government Transport v Adamcik*.[30] In that case a civil jury rejected opinion medical evidence given by eminent experts that leukaemia is neither caused nor aggravated by physical trauma in favour of a contrary opinion by a less eminent non-specialist medical practitioner. The High Court dismissed an appeal on the ground that the weight to be given to the contrary opinions was a matter for the jury, pointing out that the trial did not involve a scientific investigation into the cause or causes of leukaemia but whether the man's death was caused by the negligence, so that the result does not assert a scientific "truth".[31] It must, I think, be accepted that the decision is not likely be repeated in the present day.[32]

[84] In *Ramsay v Watson*,[33] the High Court considered a question whether there was no evidence to support a verdict that an employee suffered a kidney disorder from lead poisoning, where evidence was led that twenty one other employees in the same conditions did not sustain lead poisoning, and expert medical evidence opined that the plaintiff was suffering from hypertension. The court observed that the fact that "some medical witness should go in to the box and say that in his opinion something is more probable than not does not conclude the case."[34] For a similar case, in principle, but concerned with the evidence of an accident reconstruction and bio-mechanics expert about the forces involved in a motor vehicle collision as a cause of lumbar back injury, see *Armstrong & Anor v First York Ltd*.[35]

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27 Gold S, "The Reshapement of the False Negative Symmetry in Toxic Tort Causation", (2011) 37 Wm Mitchell L Rev 1507, 1525-1526.

28 See F Stanley, "Litigation Versus Science: What's Driving Decision Making in Medicine?" (1995) 25 UWA L Rev 265; P Huber, "Medical Experts and the Ghost of Gallileo", (1991) 54 Law and Contemporary Problems 119, 140-155.

29 Recent examples include *Metro North Hospital and Health Service v Pierce* [2018] NSWCA 11; *Tudor Capital Australia Pty Ltd v Christensen* [2017] NSWCA 260; *Dobler v Halverson* (2007) 70 NSWLR 151; *State of New South Wales v Allen* [2000] NSWCA 141.

30 (1961) 106 CLR 292.

31 (1960) 106 CLR 292, 298.

32 See P Huber, "Medical Experts and the Ghost of Gallileo", (1991) 54 Law and Contemporary Problems 119, 125-140.

33 (1961) 108 CLR 642.

34 1961) 108 CLR 642, 645.

35 [2005] 1 WLR 2751.

[85] The question of factual causation in the present case is not the general likelihood of driving conditions for a truck driver causing lumbar disc herniation as a matter of statistical association having regard to the meta-analysis of relevant studies according to the relevant confidence levels. It is whether, on the balance of probabilities, the plaintiff has proved factual causation.

[86] It is at this point, in my view, that the opinions of Dr Ballenden are to be given less weight than some of the other opinions received in evidence in this case. In several respects, as illustrated above, Dr Ballendean either did not accept correct assumptions of fact or assumed unsupported facts.

[87] Second, he did not form his opinions on a clinical basis – he did not examine the plaintiff or examine the CT or MRI scans for himself.

[88] Third, it is not possible to weigh the value of the epidemiological evidence on which Dr Ballenden relied. In cross-examination he was asked about an article by J Wahlstrom entitled "Whole Body Vibration and Hospitalisation Due to Lumbar Disc Herniation" that was not further identified in evidence,[36] except that it involved a cohort of 288,926 Swedish construction workers, but which Dr Ballenden accepted was contrary to the opinions he expressed as to causation.

Dr Ludcke

[89] Dr Justin Ludcke is an engineer who specialises in the area of occupational health and safety. His employment responsibilities include investigating incidents and preparing expert reports for the legal profession, training others in incident investigation and risk management processes, developing and reviewing health and safety management systems, facilitating and conducting risk assessments, conducting safety and ergonomics risk assessments and audits on equipment and conducting research into patterns of injury resulting in permanent damage as well as other functions. His primary qualification is a degree of Bachelor of Engineering (Medical)(Hons). He was awarded a PhD in relation to the investigation of injuries suffered in inflatable rescue boats, particularly when used in surf conditions in the life saving context.

[90] Dr Ludcke produced a report in which he considered the ergonomic conditions and the potential effect of the damaged seat used by the plaintiff in the Western Star Prime Mover. He was well qualified to express opinions on that. Unfortunately, his work in that area was limited because of lack of access to the seat in question so as to calculate any of the relevant forces with accuracy. In the result, however, that does not matter, since the defendant admitted negligence in relation to the defective seat.

[91] Surprisingly, however, in section 5 of his report, Dr Ludcke challenged the opinions of Dr Ballenden as to the mechanisms and aetiology of degenerative disc disease and expressed opinions as to whether the plaintiff's injuries could have been or were caused by the defective seat. In my view, that was surprising, because Dr Ludcke is neither a medical practitioner nor a specialist medical practitioner with diagnostic skills or

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[36] A copy was marked for identification but the tender of the article was not pressed.

expertise in relation to lumbar spinal injury. Putting it bluntly, he appeared to be expressing views outside the area of his expertise.

[92] The defendant did not, however, object to the admissibility of section 5 of Dr Ludcke's report. Accordingly, it is necessary to consider the opinions he expressed and the bases for them, on the question of causation.

[93] In evidence in chief, Dr Ludcke was asked whether he had particular qualifications that went to questions of physiology with respect to spinal discs. He responded that his undergraduate degree in medical engineering was a derivative of mechanical engineering that dealt with the interaction and understanding of the biomechanics of human beings. Subjects undertaken during that degree included anatomy, physiology, functional anatomy and biomechanics of biomaterials, which helped to understand how the body functions and how it can be broken or how structures can be loaded to the point that they are damaged. He also referred to the work he did subsequently when he undertook his PhD, looking at the injury aspects associated with surf life savers in using inflatable rescue boats.

[94] Subsequently, when asked how many times he had expressed an opinion about whether a particular injury was caused by a particular mechanism for a particular individual, he responded that he did not diagnose injuries. He agreed that he could not say anything about the specifics of the diagnosis in an individual case, and did not have the medical qualifications to do so.

[95] The plaintiff submits that Dr Ludcke's evidence is to the effect that drivers are at risk of spinal damage due to a combination of prolonged sitting and sitting posture, vibration and shock loading. That much is a fair summary of relevant sections of Dr Ludcke's report. But it does nothing to answer the question about whether or not the plaintiff's injury in the present case was caused by the defective seat. The plaintiff also submits that Dr Ludcke said that larger trucks typically have stiffer or more rigid suspension than passenger vehicles and that as the plaintiff could not use the air suspension of the seat, he was exposed to higher forces being transferred to his body than if the air suspension could be used while driving the truck. That statement, too, may be accepted. Again, however, it says nothing about either the degree of the forces or the effect of the loss of air suspension in causing the plaintiff's injuries.

[96] Once the question of negligence was admitted, in my view, Dr Ludcke's evidence was of marginal relevance, at best, on the question of causation of the plaintiff's injuries. In the course of section 5 of his report and in oral evidence, Dr Ludcke made a number of criticisms of Dr Ballenden's report and sought to identify instances or other documents in the literature about the relationship between back injuries and work or occupations, by way of counterpoints. It is unnecessary to explore these points further since, in the result, I have not preferred Dr Ballenden's opinions as to causation in the present case to those of the other qualified medical practitioners who gave evidence relevant to that question.

[97] However, in my view, it is not to be thought that an occupational health and safety engineer such as Dr Ludcke was an appropriate expert to give evidence on the question whether the plaintiff's injuries were caused by the defective seat in the present case.

Dr Licina

[98] Dr Paul Licina is an orthopaedic surgeon, who specialises as a spinal surgeon. He prepared a report, a supplementary report and signed a file note as to his opinions relevant to the plaintiff's condition and its cause.

[99] Significantly, in section 7.1 of the report, Dr Licina expressed the opinion that the CT scan of the plaintiff's lumbar spine performed on 5 December 2011 showed that the L5-S1 disc as abnormal with a rim of posterior calcification in keeping with chronic bulging and associated calcific deposition. In section 8.3, he opined that the plaintiff had degeneration which preceded the injury. I infer that he was referring to the evidence of the 5 December 2011 CT scan which he had personally reviewed.

[100] As to the 29 May 2014 CT scan, Dr Licina opined that the L5-S1 level showed a change. The broad bulge and calcification of the right side of the posterior aspect of the disc (that is, the findings as at December 2011) remained, but on the left there was a more acute appearing herniation which was broad-based, but compressed the left S1 nerve route in the lateral recess.

[101] As to the 23 December 2014 CT scan, Dr Licina expressed the opinion that the findings on that date were largely unchanged at the L5-S1 level from 29 May 2014. The other levels remained stable.

[102] As to the 17 January 2015 MRI scan, Dr Licina found abnormality at the L5-S1 level where there was disc space narrowing and desiccation, a large broad-based disc herniation centrally and to the left and the S1 nerve route was significantly compressed.

[103] As to causation, Dr Licina opined that the plaintiff did have degeneration preceding the May 2014 injury and that degeneration was contributed to by biomechanical variations in his lower lumbar spine (meaning the lumbarisation at the S1 level). Dr Licina opined that it appeared that a disc herniation had occurred by 29 May 2014, which the plaintiff attributed to driving on rough terrain with a broken seat. Dr Licina opined that the forces applied to the spine would not be sufficient to injure a normal disc, but would be sufficient to injure a disc that was already degenerated and vulnerable. Dr Licina opined that it was likely that the disc herniation occurred at that time.

[104] I consider this to be powerful evidence in favour of the plaintiff's allegation that he suffered an injury in May 2014 in the form of a disc protrusion or herniation due to the defective seat.

[105] Two other aspects of Dr Licina's report should be mentioned. First, in his report, Dr Licina expressed the view that the plaintiff's condition was caused by three contributors being the pre-existing degeneration, the initial disc herniation in May 2014 and the worsening of the herniation (after the sneezing incident) in December 2014. In Dr Licina's view, the three contributors should be considered as equal. But, in expressing that opinion, he was not answering the legal question of factual causation as previously discussed, so it is unnecessary to consider it further.

[106] Second, also in his report, Dr Licina expressed the opinion that had the plaintiff not developed his condition in association with driving and the defective seat, it is likely that he would have developed symptoms at some stage in the future, in any event. He noted that the forces that were exerted on the plaintiff's spine would be expected to be encountered in day to day living. He conceded that it was impossible for him to predict

with any accuracy the likelihood of such an occurrence or when it would occur, but his "best guess" was that it was more likely than not to have occurred within 5 years of the subject incident. In the file note that was tendered, Dr Licina clarified that his "best guess" was his opinion as to the probability of symptom development and was based on his clinical experience of treating persons with spinal injuries.

[107] As to the difference of opinion between those views and those of Associate Professor Fearnside on this question, mentioned below, in his supplementary report and oral evidence, Dr Licina conceded that this is an area of conjecture and that both opinions were reasonable and represented the spectrum of possibilities. Nevertheless, he adhered to his view.

Dr Albietz

[108] Dr John Albeitz is an orthopaedic surgeon specialising as an adult and paediatric spinal surgeon. The plaintiff initially consulted him in January 2015. He assessed the plaintiff and some months later, in April 2015, performed a L5-S1 microdiscectomy and rhizolysis and, subsequently, in October 2015, performed a spinal fusion as previously described.

[109] In a report to the defendant dated 10 February 2015, Dr Albietz identified that the plaintiff first injured his lower back around 28 May 2014 while driving on a broken seat. He experienced back and buttock discomfort remaining away from work for roughly three weeks before returning to full duties.

[110] In a further section of the history in the report, Dr Albietz said:

> "He then suffered an aggravation of similar symptoms on 22 December 2014 at home [the plaintiff] was putting on his socks to go to work when he sneezed developing a return of severe lower back and left buttock discomfort."

[111] As to the mechanism of the injury, Dr Albietz said:

> "[The plaintiff's] disc prolapse has occurred through a number of factors including his work as a truck driver, a back injury on 28 May 2014 at work and then the onset of the latest symptoms whilst at home."

[112] At that time, Dr Albietz expressed the following opinion as to the plaintiff's condition:

> "[The plaintiff] has had an MRI scan of the lumbar spine which demonstrates a large left paracentral disc protrusion at the lumbrosacral junction compressing the left traversing S1 nerve route. He had a CT scan just prior to the MRI demonstrating similar findings with partial calcification of the disc. [The plaintiff] had an MRI scan performed in May 2014 showing similar findings with a slightly smaller disc protrusion. He had a CT scan of the lumbar spine in 2011 which demonstrates minor calcification of the lumbrosacral disc, but no disc protrusion."

[113] In oral evidence, Dr Albietz was cross-examined about the 2011 incident, with a view to establishing that the plaintiff suffered from a degenerative condition of his spine in 2011 which progressed through May 2014 and December 2014. He was asked whether that course was consistent with the expected passage of a degenerated spine as becoming increasingly symptomatic.

[114] He responded that he thought the plaintiff had a new event in December 2014 and there was a significant change in pathology to cause that. He did not think that the plaintiff's spine just degenerated and became symptomatic. He thought the plaintiff had an event at the time the pathology changed rather than just a simple degeneration. I infer that he was referring to the event of the smaller disc protrusion shown on the CT scan performed on 29 May 2014.

[115] In my view, Dr Albietz's evidence also provides significant support to the plaintiff's allegation that he suffered an injury in May 2014 in the form of a disc protrusion or herniation that was caused by the defective seat.

Associate Professor Fearnside

[116] Michael Fearnside AM is a neurological surgeon and the Clinical Associate Professor of Neurosurgery, Department of Surgery at the Sydney University and Western Clinical School.

[117] In his opinion, the nature and conditions of the plaintiff's work are causally related to his low back injury and injury to his L5-S1 disc which resulted in low back pain and left sciatic pain. Associate Professor Fearnside opined that at the present time the plaintiff is incapacitated and is unfit to return to pre-injury work. He considered that the plaintiff's prognosis is guarded in respect of both pain control and any capacity to return to work. Return to work would depend upon whether his pain could be adequately managed and whether he can resume some degree of some physical fitness. He presented as being very deconditioned.

[118] Associate Professor Fearnside considered that there is a demonstrated relationship between the dysplastic lower vertebrae of the plaintiff and his low back pain. That dysplastic vertebra would predispose the plaintiff to back pain in the natural course of activities and would act as a vulnerability to injuries.

[119] In his opinion, it is "not certain" that the plaintiff would, on the balance of probabilities, have experienced low back pain at some stage in the foreseeable future but for the subject injury in May 2014. In his opinion, the plaintiff adopted an extreme posture that could have caused an injury to his L5-S1 disc resulting in the back pain and left sciatica which occurred when he sneezed on 22 December 2014.

[120] Some caution is necessary in assessing Associate Professor Fearnside's evidence.

[121] First, he assumed that the plaintiff had no prior episode of back injury or symptomology of spinal degeneration before May 2014. As to the December 2011 episode, Associate Professor Fearnside conceded that it may have been significant, but that depended on what the CT scan of the plaintiff's spine on 5 December 2011 reported. Having been informed of Dr Tilse's report dated 5 December 2011, Associate

Professor Fearnside concluded that there was probably no structural injury at the time, but a muscular injury which settled or a muscular event, if there was no injury.

[122] That must be compared with the opinions of Dr Licina and Dr Albietz as to the radiological evidence shown on the CT scans of the plaintiff's lumbar spine on 5 December 2011. As previously discussed, both Dr Licina's examination and Dr Albietz's description of the CT scan support the finding that there was some degenerative change in the plaintiff's L5-S1 disc, but that it was on the right side and to be distinguished from the left side acute herniation that appeared on the CT scan performed on 29 May 2014.

[123] Second, Associate Professor Fearnside's report proceeded on the footing that the relevant pathology was at the L4/L5 level. However, the difference seems to have been a confusion caused by the plaintiff's sacralised lumbar vertebrae at the S1 level. In any event, I am satisfied that it is appropriate to regard Associate Professor Fearnside's report on the footing that the condition it is describing and upon which his opinions are expressed are those elsewhere treated as being at the L5-S1 level in the reports by the other medical practitioners.

[124] Accordingly, Associate Professor Fearnside's opinion expressed in oral evidence that the neuroradiology confirms that there was a degenerative change or disc bulge or protrusion that predated the December 2014 event when the plaintiff sneezed, and the disc protrusion then became larger, supports the plaintiff's allegations to the same effect.

[125] Further, in oral evidence, Associate Professor Fearnside confirmed that he remained of the view that the position the plaintiff was taking and the nature of his work with the seat which was malfunctioning aggravated the condition and caused back pain in May 2014. In his view, the protrusion or increase in the protrusion caused sciatica with the sneeze in December 2014. But there was a disc abnormality in May 2014 that was not present in 2011.

[126] Overall, in my view, Associate Professor Fearnside's opinions, carefully analysed, support the plaintiff's allegation that he suffered an injury in May 2014 in the form of disc protrusion or herniation that was caused by the defective seat.

December episode as a subsequent injury

[127] The defendant pleaded that the December 2014 episode was a subsequent injury to the May 2014 injury which it alleged was resolved by 30 June 2014. In particular, it is alleged that on 23 December 2014 the plaintiff suffered a lumbar disc protrusion when he sneezed while at home.

[128] The substance of that plea is that the plaintiff did not have a disc herniation or protrusion before 23 December 2014. The radiological evidence as at 29 May 2014, of an L5/S1 small left paracentral herniation indenting the thecal sac and displacing the proximal portion of the left S1 nerve route, as previously discussed, is to the contrary.

[129] The radiological evidence, at 23 December 2014, of a L4/L5 significant central as well as paracentral disc protrusion with spondylosis, and compression of the thecal sac and some compression of the proximal L5 nerve routes on both sides and L5/S1 chronic

disc degeneration with spondylosis and minor spondylotic impression on thecal sac, supported by other medical evidence, leads to the conclusion that the herniation was worse by 23 December 2014, but not that there was no pre-existing disc herniation or injury.

Conclusion on factual causation

[130] These findings lead to the answers to the ultimate questions. In my view, the better inference is that the harm to the plaintiff that in fact occurred would not have occurred absent the negligence. I am not satisfied that the harm that occurred would have been suffered in any event in either May 2014 or December 2014.

Contingency of future similar disabling back condition

[131] However, in my view, there was also a significant prospect that had the plaintiff not suffered the particular harms at late May 2014 and December 2014, he would have suffered from a similar disabling back condition at some time after those dates. I acknowledge that Dr Licina's opinion of a five year horizon for that to occur is necessarily an assessment of an uncertain past or future hypothetical event, and that, as Associate Professor Fearnside explained, as the future played out the event may never have happened. But as was said in the leading case of *Malec v JC Hutton Pty Ltd*,[37] it is not unusual in assessing the damages to be awarded for a past hypothetical or future event, for the question of the future or hypothetical effect of an injury or degeneration not to be susceptible of scientific demonstration or proof.

[132] The approach required by *Malec* is:

> "But in the case of an event which it is alleged would or would not have occurred, or might or might not yet occur, the approach of the court is different. The future may be predicted and the hypothetical may be conjectured. But questions as to the future or hypothetical effect of physical injury or degeneration are not commonly susceptible of scientific demonstration or proof. If the law is to take account of future or hypothetical events in assessing damages, it can only do so in terms of the degree of probability of those events occurring. The probability may be very high — 99.9 per cent — or very low — 0.1 per cent. But unless the chance is so low as to be regarded as speculative — say less than 1 per cent — or so high as to be practically certain — say over 99 per cent — the court will take that chance into account in assessing the damages. Where proof is necessarily unattainable, it would be unfair to treat as certain a prediction which has a 51 per cent probability of occurring, but to ignore altogether a prediction which has a 49 per cent probability of occurring. Thus, the court assesses the degree of probability that an event would have occurred, or might occur, and adjusts its award of damages to reflect the degree of probability. The adjustment may increase or decrease the amount of damages otherwise to be awarded."[38]

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37 (1990) 169 CLR 638, 643.

38 *Malec v JC Hutton Pty Ltd* (1990) 169 CLR 638, 643 [7].

[133] In my view the probability that the event of the plaintiff suffering a similar disabling back condition to the harm that he did suffer as a result of the employer's negligence is that it is as likely as not that he would have done so over the period of the losses he has and will have suffered as a result of the employers negligence. It is a reasonable inference from Dr Licina's evidence that the longer the period from the date of the harms in fact suffered that is considered, the greater the likelihood that a similar disabling back condition would have been suffered. However, having regard to the methodology proposed in *Malec*, I do not consider it is incumbent upon the court or the correct approach to attempt to formulate a date by which a similar condition would have been suffered. The correct approach is to consider the percentage prospect overall of the event which would reduce the damage suffered from the defendant's negligence and to decrease the amount of the award of damages accordingly.

Future economic loss

[134] First, the plaintiff submits that the hypothetical factual assumptions that should be adopted for the assessment of future economic loss are that the plaintiff will have no residual earning capacity and that had he not been injured, he would have continued to exercise his full earning capacity as a truck driver until about 67 years of age.

[135] Second, the plaintiff submits that the value of the plaintiff's lost earning capacity should be increased from $1,300 net per week based on evidence that truck drivers may earn around $30 to $40 per hour, so that a 50 to 60 hour week indicates a potential earning capacity of up to $1,700 net per week. The plaintiff submits that $1,500 net per week represents a reasonable measure of the value of plaintiff's lost earning capacity. Utilising a 5 percent actuarial table multiplier for a 29 year period of 810, the lost earning capacity is calculated by the plaintiff at $1,215,000 before discount.

[136] Last, the plaintiff submits that an appropriate discount for contingencies is 10 percent. The plaintiff submits that there should be no further discount. In other words, the plaintiff submits that the correct finding as to the hypothetical facts is that there is no significant possibility that the plaintiff might have suffered impairment and loss of earning capacity from his lumbar discs at some point in the future, in any event. Alternatively, the plaintiff submits that an additional discount of no more than 5 to 10 percent may be justified on the evidence, bringing the total discount of the future award economic loss to a range of 15 to 20 percent. The result is that the plaintiff submits that future economic loss should be assessed at no less than $1,032,750 (i.e. $1,215,000 less 15 percent).

[137] The defendant submits that the calculation of future economic loss should begin with the upper end of the range of earnings contained in the report of the relevant expert, namely $1,200 net per week. The defendant would use the 5 percent actuarial table multiplier for 29 years of 810 resulting in a total amount before discount of $972,000. The defendant submits that a combination of factors combine so that the plaintiff would have been rendered unable to work in any event or was at a substantial risk of that outcome within 5 years of 22 December 2014. The defendant submits the appropriate discount to reflect those risks is 65 percent. Applying the defendant's 65 percent discount to the $972,000 calculated, results in the defendant's submission that future economic loss should be assessed at no more than $340,200.

[138] In my view, the plaintiff's calculation of the future economic loss before discount should not be accepted. First, there is no sufficient evidentiary basis for the conclusion that the plaintiff's lost earning capacity as of the date of the trial was $1,500 net per week net as opposed to $1,200 per week net or $1,300 per week net. Second, in my view, the plaintiff's discounting for the contingencies including the plaintiff's vulnerability to impairment and loss of earning capacity from his lumbar discs at some point in the future, is too low.

[139] Because of the time value of money, the application of a discount rate in a discounted cash flow means that a dollar lost some years in the future does not have the same present value as a dollar lost today and, over a horizon of more than ten years, the value of a future dollar becomes much less. But I do not accept, as the plaintiff submits, that the time value of money is a factor that feeds directly into the appropriate discounting for the suffering of future loss on the possibilities in accordance with the assessment required by the principles of *Malec v JC Hutton Pty Ltd*.[39]

[140] On the other hand, the selection of a 65 percent rate of discount submitted by the defendant as appropriate cannot be justified without accepting that there is a more than a 50 percent chance that, absent the injury suffered in May 2014, the plaintiff would have suffered a similar disabling back condition, in any event, based on the tentative opinion evidence of Dr Licina that such an occurrence would have happened within, say, five years.

[141] The assessment of the hypothetical factual bases or assumptions for the calculation of future economic loss in this case is attended with great uncertainty. The plaintiff's approach to that uncertainty is that the defendant has to disprove the assumptions for which the plaintiff contends. I do not agree. Overall, the plaintiff bears the onus of proof on the issue of damages. But the question should be considered, having regard to the obvious difficulties of such a hypothetical assessment and the attendant complexities raised by the evidence. The court is required to assess these assumptions and complexities as best it can.

[142] In my view, an appropriate discount of the plaintiff's damages for economic loss for the contingencies including the hypothetical event that the plaintiff in any event would have suffered from a similar disabling back condition, is 50 percent. This results in future economic loss of $486,000.

[143] The foregoing analysis is intended to satisfy the requirements to state the assumptions on which the award is based and the methodology used to arrive at the award.[40]

Past economic loss

[144] The parties agree that the plaintiff's past economic loss should be assessed on an earning capacity of $1,300 net per week. The plaintiff had been off work since December 2014, being 268 weeks at the date of the trial. Accordingly, the plaintiff claims $348,400.

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39 (1990) 169 CLR 638.

40 *Workers' Compensation and Rehabilitation Act 2003* (Qld), s 306J(3).

[145] The defendant accepts that period and calculation but submits that the amount of past loss should be discounted to reflect the probability that the plaintiff's degenerative condition in his lumbar spine at L5-S1 level would have intervened within 5 years in any event. I deal with that question above, generally speaking.

[146] Applying the 50 percent discount I have previously adopted, the amount is $174,200.

[147] The foregoing analysis is intended to satisfy the requirements to state the assumptions on methodology used to arrive at the award.[41]

General damages

[148] Where general damages are to be awarded, the court must assess an injury scale value and do so under the rules provided by regulation having regard to ISVs given to similar injuries.[42] The plaintiff's disc herniation as at and following 22 December 2014 was treated by the surgical procedures of a microdiscectomy in April 2015 followed by a posterior lumbar interbody fusion in October 2015 and post-operative treatment. His assessed total impairment is 23 percent and he continues to experience lower back pain, buttocks pain and associated restriction of movement.

[149] The plaintiff submits that the ISV should be assessed under Item 90 of Schedule 9 of the *Workers' Compensation and Rehabilitation Regulation* 2014 (Qld) ("WCR") as a "Serious thoracic or lumbar spine injury", with an ISV from 16 to 35.

[150] For Item 90, the comment provides that:

> "The injury will cause serious permanent impairment in the thoracic or lumbar spine.
>
> The injury may involve-
>
> (a) bilateral or multilevel nerve root damage; or
>
> (b) a change in motion segment integrity, for example, because of surgery."

[151] Also for item 90, the comment about the appropriate level of ISV provides that:

> "… an ISV at or near the top of the range will be appropriate if the injured worker has had a fusion of vertebral bodies that has failed-
>
> (a) leaving objective signs of significant residual nerve root damage and ongoing pain, affecting 1 side of the body; and
>
> (b) causing a DPI of 24%."

[152] On this basis, the plaintiff submits that an ISV of 35 is appropriate.

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41 *Workers' Compensation and Rehabilitation Act 2003* (Qld), s 306J(3).

42 *Workers' Compensation and Rehabilitation Act* 2003 (Qld), s 306O(1)(a) and (c); *Workers' Compensation and Rehabilitation Regulation* 2014 (Qld), r 129.

[153] The comment about the appropriate level of ISV for item 90 also provides:

> "An ISV at or near the bottom of the range will be appropriate if—
>
> (a) the injured worker has had surgery and symptoms persist; or
>
> (b) there is a fracture involving 25% compression of 1 vertebral body."

[154] The defendant submits that Item 91 applies, being a "Moderate thoracic or lumbar spine injury – fracture, disc prolapse or nerve root compression or damage" with an ISV range of 5 to 15.

[155] For Item 91, the comment provides that:

> "An ISV at or near the top of the range will be appropriate if:
>
> (a) there is a disc prolapse for which there is radiological evidence at an anatomically correct level; and
>
> (b) there are symptoms of pain and three or more of the following objective signs, that are anatomically localised to an appropriate spinal nerve root distribution –
>
> (i) sensory loss;
>
> (ii) loss of muscle strength;
>
> (iii) loss of reflexes;
>
> (iv) unilateral atrophy; and
>
> (c) the impairment has not improved after non-operative treatment."

[156] Relying on Item 91, the defendant submits that the ISV assessment will be at the top of that range, namely 15.

[157] In my view, Item 90 is the applicable item. However, in my view, the ISV in this case is not at the top of the range. It is below that. The plaintiff has had spinal fusion surgery. But the surgery has not failed. It reduced his pre-operative levels of pain significantly, in particular his sciatic leg pain. None of the medical practitioners gave evidence that he is left with objective signs of significant residual nerve root damage.

[158] On the other hand, I do not consider that the plaintiff's injuries are assessable at the bottom of the range for item 90. Although he has had surgery and symptoms persist, that description can apply to a wide range of cases. I do not consider that, properly construed, it excludes from the middle of the range, all cases where there has been spinal fusion that has been partly successful but where significant symptoms persist.

[159] In my view, the plaintiff's ISV is in the middle of the range. I have settled on an ISV of 25.

[160] The plaintiff's associated psychiatric injury was assessed with a PIRS of 5 percent with persisting levels of impairment. The plaintiff submits that Item 12 of Schedule 9 applies, namely a moderate mental disorder with an ISV range of 2 to 10 for a mental disorder with a PIRS rating between 4 percent and 10 percent. The plaintiff submits that an ISV of 4 would be appropriate. The defendant also submits that an appropriate ISV is 4.

[161] The plaintiff's spinal disc injury is the dominant injury for the purpose of assessment of general damages.[43] The plaintiff submits that an uplift should be applied by adding the ISV for the moderate mental disorder to the ISV for the serious lumbar spine injury.

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43 *Workers' Compensation and Rehabilitation Regulation* 2014 (Qld), Sch 8, s 3.

The defendant also submits that the uplift ought to be 4 ISV points. In those circumstances, I do not consider whether it might have been less than that.

[162] Accordingly, under paragraph 4(f) of Schedule 12 of the WCR[44] for an ISV of 30 or less, but more than 25, the general damages for the total ISV of 29 are $56,510.00. There is no entitlement to interest on past general damages.[45]

[163] The defendant does not submit this amount should be discounted further.

Past special damages

[164] Special damages have been agreed in the amount of $146,313.73. The plaintiff claims interest of $156 on the past special damages, while the defendant would allow approximately $133. The calculations that arrive at those different results are not worth considering in detail. I assess the amount at $150.

[165] The defendant does not submit that this amount should be discounted further.

Future special damages

[166] The plaintiff claims $77,940.20 as future special damages generally, by a calculation based on the weekly average of the agreed schedule of past special damages, in the sum of $80.60 per week, applied to a 5 percent actuarial table multiplier for the 48 years of the plaintiff's life expectancy of 967.

[167] The defendant submits that this head of damage was not the subject of evidence and only a global allowance of $15,000 should be made.

[168] In addition, the plaintiff claims $36,000 as a specific future special damages amount for a trial insertion of a spinal cord stimulator in the total estimated amount of $56,599.10. As well, should the trial succeed, the plaintiff submits that there would be a further expense for the final insertion of $34,017. The plaintiff discounts both amounts for contingencies and deferral of the relevant expenditure to claim the overall amount of $36,000.

[169] The defendant submits that no sum is to be allowed on this account.

[170] This slightly surprising part of the dispute amounts to a total claim on the part of the plaintiff of $113,940.20 for future special damages, whereas the defendant submits only a global amount of $15,000 should be awarded, a difference of $98,940.20.

[171] In my view, it is appropriate to award a global amount in the circumstances. Except for the costs of the future spinal cord stimulator and the assumption made as to the continuation of the average weekly cost of past special damages, the amount claimed by the plaintiff is unsupported by any particular evidence. However, the defendant's estimate is a serious under value of the likely future expenses. In my view, an amount

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44 *Workers' Compensation and Rehabilitation Regulation 2003* (Qld); *Workers' Compensation and Rehabilitation Regulation* 2014 (Qld), Sch 12, table 4 item 6.

45 *Workers' Compensation and Rehabilitation Act* 2003 (Qld), s306N.

of $50,000 should be allowed to reflect likely future special damages including $20,000 of that sum for the possible future expense of a spinal cord stimulator.

[172] The defendant does not submit that the amount arrived at should be discounted further.

Taxation instalment

[173] The parties agree that the *Fox v Wood*[46] component of taxation instalments of $16,914 should be added to the damages assessed.

Past Superannuation

[174] The list of issues not in dispute provides and the plaintiff submits that the rate of superannuation on the past economic loss is 9.5 percent. As such, the past loss of superannuation is calculated as $16,549 ($174,200 x 9.5 percent).

Future Superannuation

[175] The proper rate of superannuation for future earnings must take into account the legislated superannuation requirements.[47] The *Superannuation Guarantee (Administration) Act* 1992 (Cth), s 19(2) provides the relevant compulsory rates of superannuation as follows:

Item	Year	Charge percentage
8	Year starting on 1 July 2020	9.5
9	Year starting on 1 July 2021	10
10	Year starting on 1 July 2022	10.5
11	Year starting on 1 July 2023	11
12	Year starting on 1 July 2024	11.5
13	Year starting on or after 1 July 2025	12

46 (1981) 148 CLR 438.

47 *Heywood v Commercial Electrical Pty Ltd* [2013] QCA 270, [56].

[176] The plaintiff's future economic loss has been calculated for a period of 29 years from 2020.

[177] The plaintiff submits that superannuation should be calculated as one year's worth of superannuation at 9.5 percent; one year at 10 percent; one year at 10.5 percent; one year at 11 percent; one year at 11.5 percent and 24 years at 12 percent. The plaintiff submits that the average charge percentage is therefore 11.74 percent. Based on the plaintiff's submissions, the future loss of superannuation is calculated as $57,056.40 ($486,000 x 11.74 percent).

[178] The defendant submits that the average charge percentage is 11.33 percent as specified in *Heywood v Commercial Electrical Pty Ltd.*[48] In applying this rate, the future loss of superannuation is calculated as $55,063.80 ($486,000 x 11.33 percent).

[179] In my view, the plaintiff's calculations as to future superannuation are appropriate and the plaintiff should be awarded $57,056.40.

Interest on past economic loss

[180] The plaintiff submits that the interest on the past economic loss is $8,990.62 on the amount of $266,388.82 (being the total of the plaintiffs submitted past economic loss, less income amounts of $71,119.27 received from WorkCover and Centrelink benefits of $15,441.91 to the date of trial). The interest was calculated as follows: 1.35 percent of $266,388.82 for 5 years, divided by 2.

[181] The defendant submits that the reduced amount of past economic loss is $263,350. Interest on this amount, less the WorkCover weekly benefits of $71,119.27, being $192,230.73, at half the 10 year Treasury bond rate for the last financial quarter, is calculated as $495.95 (1 percent x ½= 0.05 percent x 5.16 years from 23 December 2014).

[182] The relevant section is s 306N of the WCRA.[49] It states that interest is to be calculated at the 10 Year Treasury bond rate as at the beginning of the quarter in which the award of interest is made.

[183] The beginning of the quarter is 2 January 2020. The 10 year bond rate on that date was 1.35 percent. In applying the calculation to the reduced amount of past economic loss, the plaintiff should be awarded $6,067.39 ((1.35 percent x $174,200)/100) x 5.16 years x 0.5).

WorkCover refund

[184] The list of issues not in dispute provides and the plaintiff submits that the deduction for the WorkCover refund from any damages awarded should be $245,415.40.

Summary

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48 [2013] QCA 270.

49 *Workers' Compensation and Rehabilitation Act* 2003 (Qld).

[185] The quantum amounts summarise as follows:

Future economic loss	$486,000.00
Past economic loss	$174,200.00
General damages	$56,510.00
Past special damages	$146,313.73
Interest on past special damages	$150.00
Future special damages	$50,000.00
Taxation instalment	$16,914.00
Past superannuation	$16,549.00
Future superannuation	$57,056.40
Interest on past economic loss	$6,067.39
Sub-total	$1,009,760.52
Less WorkCover refund	$245,415.40
Net total after refund	$764,345.12

Conclusion

[186] The amount of damages that an employer is legally liable to pay to a claimant for an injury must be reduced by the total amount paid by an insurer by way of compensation for the injury. [50]

[187] There should be judgment that the plaintiff do recover the sum of $764,345.12 from the defendant.

[188] I will hear the parties on the question of costs.

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50 *Workers' Compensation and Rehabilitation Act* 2003 (Qld), s 270(1).