



OUTER HOUSE, COURT OF SESSION

[2019] CSOH 50

A121/17 & A112/16

OPINION OF LADY WOLFFE

in the causes

ELIZABETH FAIRLEY

Pursuer

against

EDINBURGH TRAMS LIMITED

First defender

and

THE CITY OF EDINBURGH COUNCIL

Second defender

AND

IAIN LOWDEAN

Pursuer

against

TRANSPORT INITIATIVES EDINBURGH LIMITED

First defender

and

THE CITY OF EDINBURGH COUNCIL

Second defender

**Pursuer: Di Rollo QC, McNaughton; Thompsons
First and second defenders: Love QC; BLM (Scotland) LLP**

28 June 2019

Precis and Structure of Opinion

[1] The pursuer in each of these two actions sustained injury while cycling across tram tracks comprising part of Edinburgh's tram system. Elizabeth Fairley's accident occurred at Haymarket; Iain Lowdean's accident occurred on Princes Street. There have been numerous other accidents involving cyclists and the tram infrastructure. These two actions, which were heard together at a two-week hearing last month, are the first of these claims to come to proof.

[2] Although the pursuers had their accidents in different parts of the tram system, there was a significant degree of overlap in the factual and expert evidence led, and in the legal issues in these two actions. I have therefore set out the uncontroversial matters in the first part of this opinion. The factual matters common to both actions include: general design materials (see para [8(1)] and propositions derived therefrom at para [11]), the design documentation specific to the Edinburgh tram (at para [8(2)]), the independent audit materials (listed at para [8(2)] and key passages extracted at para [13]), descriptions of the locations of the pursuers' accidents (paras [14] to [24]), and certain miscellaneous materials in the public domain (paras [25] to [27]). There is also a large degree of overlap in the parties' pleadings. I set out the pursuers' pleadings common to the two actions (at paras [28] to [36]), my comments thereon (at paras [37] to [38]) followed by the defenders' averment common to both actions (at paras [39] to [45]) and my comments thereon (at paras [46] to [47]). For ease of reference, I identify the central question on liability at issue in these two actions (at para [48]). I also set out the averments specific to Ms Fairley and Mr Lowdean's actions (respectively, at paras [49] to [53] and at para [54]). Thereafter, I record the evidence led in pursuers' proofs, namely: the pursuers' evidence (at paras [55] to [77]), other witnesses not led as skilled (or expert) witnesses (at paras [78] to [84]), and the

evidence of the pursuers' two experts (at paras [85] to [117]). The evidence in the defenders' proofs follows (at paras [118] to [157]), most of which was comprised of the evidence of their experts (at paras [134] to [157]). The discussion of the factual and legal issues commences at paragraph [158]. My conclusions on the identification of the relevant risk and on foreseeability are at paragraph [185] and at paragraphs [188] to [189], respectively. The conclusions on the defenders' cases of contributory negligence are at paragraphs [191] to [196].

The parties and the two actions

The several defenders: The Council, TIE & ETL

[3] The City of Edinburgh Council ("the Council") promoted the design and installation of a light railway known as Edinburgh Tram ("the Tram") from around 2002 until about 2012. The Council incorporated a company, Transport Initiatives Edinburgh Limited ("TIE"), which is a wholly-owned subsidiary of the Council. Another company, known as Edinburgh Tram Limited ("ETL"), was also involved in the delivery of the Tram.

The two pursuers

[4] The interaction of cyclists with the tram tracks has led to a number of actions, of which the actions by Elizabeth Fairley ("Ms Fairley") and Iain Lowdean ("Mr Lowdean") are two.

- (1) The Fairley action: The Council and ETL are called as defenders in the action at the instance of Ms Fairley ("the Fairley action"). Her accident occurred at the section of the tram track near Haymarket Station on 16 October 2013. That

section of the Tram had opened for road traffic a few days earlier, on 12 October 2013.

- (2) The Lowdean action: TIE and the Council are called in an action at the instance of Mr Lowdean (“the Lowdean action”). His accident occurred while he was cycling east on Princes Street, just beyond the T- junction with Frederick Street on 22 October 2012, a few months after it re-opened for public use on 30 June.

Introduction

The proof in the Fairley and Lowdean actions

[5] The separate actions by Ms Fairley and Mr Lowdean (collectively, “the pursuers”), were heard together at an seven-day diet of proof. While the two accidents involving these pursuers occurred about a year apart and at different locations of the Tram, they shared common elements in that both pursuers sustained injury while crossing tram tracks. The averments common to both actions (which I set out at paras [28] to [36]) included averments of the known tram risks, generic averments of the design and implementation of trams, generic and specific risks arising from cyclists crossing tram tracks, and legal duties. The same experts (two for each party) were led in each action. Mr Di Rollo QC and Mr Naughton appeared for both pursuers. Mr Love QC appeared for all of the defenders. Accordingly, it is not necessary to distinguish between the separate roles of the Council, ETL or TIE. In any event, no distinction was made between them in the pursuers’ averments of duties or in the defenders’ defences. As will be seen, the duties pled are omnibus duties, in that all duties are said to be owed without differentiation by “the defenders”. The defenders’ defences, including their averments of each pursuer’s contributory negligence, are also broadly similar in each case. Accordingly, I set out the averments common to both

actions (from para [28] to para [36]), before noting the averments specific to each action (at paras [49] to [53] for Ms Fairley and at para [54] for Mr Lowdean”).

[6] While the actions were not formally conjoined, parties sensibly agreed (by Joint Minute mid-way through the proof) that the evidence in each action was admissible in the other. It was confirmed, however, that these were not “test cases”; the outcome in each was binding only on the parties to their respective actions.

Joint Minutes

[7] A number of joint minutes were lodged during the course of the proof. Quantum was agreed in both actions at the outset. Most of the background or policy documentation (described below) was agreed midway through the proof, as were photographs and certain videos downloaded from YouTube referred to or contained in one or more of the experts’ reports. A large amount of evidence was led in relation to chapters that, ultimately, were not contested (although they were not formally agreed). I summarise this material in the next section of this opinion. It is not necessary to attribute passages of this to particular witnesses. In their conduct of future cases, parties should consider identifying and agreeing (1) specific passages from the RSAs and the general design documentation (as after-defined) or general propositions derived from those materials, and (2) the road layout and infrastructure at the accident locations. The latter would have the benefit of avoiding the need to work through the many descriptions, plans and maps in the four experts’ five reports as well as reconciling these with the witnesses’ parole evidence.

Uncontroversial matters

The general design documentation and design materials commissioned by the defenders

[8] The pursuers lodged several lever arch files of materials. The bulk of these materials fell into the following three categories:

- (1) General materials on the design of trams or reports into trams other than the tram infrastructure project constituting the Tram (collectively “the general design documentation”), including
 - (i) “The Interaction of Cyclists and Rapid Transit Systems Final Report” prepared for the Department of Transport by MVA, dated June 1998 (“the MVA”);
 - (ii) “Sign up for the bike: Design manual for a cycle friendly infrastructure” CROW research, Netherlands, 1993, at page 133;
 - (iii) “Light Rapid Transit & Cyclists – Guidelines for Planning and Design” published by CTC, dated August 1998 (“the CTC Report”);
 - (iv) “An Investigation Into Cyclist Safety on the Supertram Network in Sheffield, South Yorkshire” prepared by Sheffield Design and Property Engineering Division, dated December 1998;
 - (v) “Guidance on Tramways – Railway Safety Publication 2” issued by the Health and Safety Executive, dated November 2006 (“the 2006 HSE Guidance”);
 - (vi) “Local Transport Note 2/08, Cycle Infrastructure Design” prepared by Ove Arup & Partners Ltd, on behalf of the Department for Transport, dated October 2008 (“LTN 2/08”);
 - (vii) the Edinburgh Tram Design Manual, dated December 2005;

- (2) Design materials commissioned by the defenders in relation to the Tram (“the defenders’ design materials”);
- (i) Edinburgh Tram Design Manual dated December 2005 (“the Manual”);
 - (ii) Goudappel Coffeng’s report, “Cycling and the Edinburgh Tramway”, dated November 2007 (“Goudappel Coffeng”); and
 - (iii) Edinburgh Tram Cycle Integration Study, Final Report prepared for TIE, dated July 2009 (“Integration”).
- (3) Road Safety Audits (“RSAs”) undertaken at specified stages in the delivery of the Tram. Eleven of these were lodged (No 6/37 to 6/47 of process). So far as relevant to the locations and issues in these cases, these included:
- (i) Stage 1 RSA, prepared by Halcrow Group Limited for Parsons Birnkerhoff, dated June 2006 (“RSA Stage 1”);
 - (ii) Stage 2 RSA, prepared by Halcrow Group Limited for Parsons Birnkerhoff, dated May 2008 (“RSA Stage 2”);
 - (iii) Several *interim* Stage 3 RSAs (“RSA Stage 3 *interim*”), prepared in association with Wyllie Lodge Independent Road Safety Auditors (“Wyllie Lodge”), including two covering Princes Street (one in March 2011 “RSA Stage 3 (*interim*, March 2011”) and one in December 2012 (“RSA Stage 3 (*interim*, December 2012”) and one covering Haymarket (November 2013) (“RSA Stage 3 (*interim*, November 2013”).

[9] While many passages from the documents in sub-paragraphs (1) and (2) were repeated in the five expert reports the court was to consider, the parties declined the court’s suggestion at the start of the proof to agree the relevant passages. The documents referred to in paragraphs [8(1), (2) and (3)] were agreed by Joint Minute during the proof.

[10] A large number of other materials were produced. It is not necessary to narrate these. They were unrelated to the issues arising in these actions; they were not referred to, or to the extent that they might have been relevant, they were duplicative of other materials spoken to or relied on.

Propositions derived from the general design documentation

[11] The pursuers lodged a first reading list on the Friday afternoon preceding the proof comprised of the general design documentation (ie the documents listed in para [8(1)], above), and which the court was invited to read. While that documentation comprises more than 600 pages, it transpired that the few propositions derived from this were uncontroversial. They may be summarised as follows:

- 1) It has been well known since the 1950s that tram tracks, or more specifically the smooth upper surfaces of the metal flanges of which these are typically comprised, pose a danger to cyclists;
- 2) The particular hazards may be divided into two types:
 - (i) A risk of a bike wheel skidding along the track (“the skid risk”);
 - (ii) A risk of a bike wheel becoming trapped in the groove in the flange (which is the necessary opening along which the tram glides) (“the trap risk”).
- 3) It is obvious that the skid risk or the trap risk, or a combination of the two, is likely to result in a loss of control of a bike and the cyclist falling. In the MVA it was noted that negotiating the flange groove of a track “must rank high as a potential hazard” (at para 4.2.3). The CTC Report identified tracks on the road way as “the main source of danger to cyclists” (at para 1.2). A trapped

wheel can in particular cause a sudden stop of the bike, and the rider being flung with force from the bike. The skid and trap risks (collectively “the track risks”) may be compounded by the separate risks posed by other road traffic (“traffic risks”), namely other road users (eg vehicles or a tram) crossing the path of or colliding with the unseated or downed rider.

- 4) In order to minimise the track risks, a cyclist should ideally cross the track at a perpendicular (ie 90 degree) angle. The CTC Report recommended an alignment between cycle lanes and tram tracks to achieve a crossing of an angle of more than 45 degrees, but preferably at 90 degrees, to minimise risks to cyclists. It also noted the recommendation of a minimum of 60 degrees in the Dutch guidelines. (By reason of a combination of a very high proportion of the populace using bikes and the extensive use of trams in urban centres, Holland is a world - leader in the design of trams so as to minimise risk to cyclists.) The 2006 HSE Guidance noted that where the proposed crossing was less than 60 degrees “consideration should be given to alternative crossing layouts and other measures to mitigate the risks faced by cyclists” (para 79).

[12] Other possible mitigatory measures identified in the general design documentation included:

- 1) Physical separation of trams and cycles (ie separate cycle lanes);
- 2) Tracks should be located within the roadway, so far as reasonably practicable, so they do not coincide with the path taken by bikes.

The Road Safety Audits

[13] At specified stages during the design and installation of the Tram, the defenders commissioned reports from independent consultants to conduct a safety audit, known as Road Safety Audits (“RSAs”) of the Tram. The Stage 2 RSA was conducted in May 2008 (“RSA Stage 2”). The first part of the Stage 3 RSA was completed in March 2011 (“RSA Stage 3”), after completion of the majority of the tram works in Princes Street. (There was also a Stage 3 RSA conducted in April 2014 by Wyllie Lodge (“Wyllie Lodge”).) The audit conducted as stage 4 post-completion of the Tram was done in July 2015 (“the Stage 4 RSA”). Although voluminous, only a relatively few passages were referred to. I note only the passages relevant to the locations and layouts in this proof, which are as follows:

- (1) RSA Stage 2 (May 2008) (No 6/38 of process):
 - (i) It was noted (at para B6.3.10) at Haymarket that cyclists “... are expected to cross the tram tracks at a shallow angle of some 10° whilst making about a 60 m radius turn. As such they will also be banked over increasing the risk of their wheel slipping out from under resulting in a fall accident...”. It was recommended that the layout be amended to include a crossing of the Tram at a greater angle, although this recommendation was not implemented until after Ms Fairley’s accident.
 - (ii) It was noted (at para B7.2.2) that cyclists at the Lothian Road/Princes Street junction were vulnerable travelling along the bus lane and could, if keeping clear of the tram tracks, be “sandwiched between a passing bus or tram and other vehicles in the adjacent lane. The tram

tracks should be offset within the lane to allow for the passage of cyclists". This recommendation was not implemented.

(2) RSA Stage 3 (March 2011) (No 6/39 of process):

At paragraph 3.7 it identified as a problem that there was lack of a clear path for cyclists travelling east towards Princes Street from the junction with Lothian Road. At this point, the two left-hand lanes took cars and other traffic left off Princes Street and into South Charlotte Street. For cyclists travelling east on Princes Street, this meant they had to cycle in the third or right-most lane, if they did not want to come into conflict with cars turning left. As laid out, cyclists would require to occupy "a narrow strip" between a wide thermoplastic road marking (which, on the evidence, could be slippery) and the left-hand track of the eastbound tram tracks. While this was wide enough "with care", there was also the overhang of buses and trams to be considered; the "overhang" is the extent to which the bus or tram width exceeds its wheelbase or tram tracks. Finally, it was noted that in "the present situation there is no room for error and in the future situation [ie once the trams were running] the cyclist should not be within the space of the tram. Any collision could have serious consequences." The recommendation was that a marked cycle lane should be provided and which was clear of the tram tracks and tram overhang. This recommendation was not followed.

(3) RSA Stage 3 (interim, December 2012) (no 6/41 of process) which considered only the Princes Street section of the Tram:

This noted that it was “inevitable that the interface between non-motorised users - particularly cyclists and pedestrians - and the trams and their tracks will pose road safety problems”; and that there was also a possibility “of cyclists... being unseated while crossing the tram tracks, particularly at an acute angle. Both of these mishaps could have serious road safety consequences”. It was recommended that a safety leaflet about cycling on roads with tram tracks be produced and distributed.

(4) RSA Stage 3 (interim, November 2013) (no 6/45 of process):

This noted problems at Haymarket Station (see Section 1D). In particular, it was noted (at Section 1D.2) that the “desire line” of westbound cyclists was to remain on the carriageway with the consequence that they would be crossing the tram tracks at a very shallow angle. As a consequence there were risks of “the bicycle wheel getting caught in the tram track causing the rider to fall and land between the tram lines, resulting in a slight or serious injury to the rider. Further and more serious injury will be caused if any following vehicle is unable to stop before reaching the fallen rider”. It was also noted (at Section 1D.1) that the queue of taxis regularly extended beyond the end of the taxi rank and into the westbound lane of Haymarket Terrace. “This extended queue forces cyclists to cross the tram tracks at a very shallow angle. This presents a high risk that a bicycle wheel will get caught in the tram track causing the rider to fall and land between the tram lines, resulting in a slight or serious

injury to the rider. Further and more serious injury will be caused if any following vehicle is unable to stop before reaching the fallen rider". Similar observations about the unacceptably shallow angle were noted in paragraph 4.1 of the RSA Stage 4 (July 2015) (No 6/47 of the process), as well as the underuse of the extant cycle lane (because it was perceived by cyclists to be an unattractive route).

Uncontested matters: Description of the locations of the pursuers' accidents

The locus of Ms Fairley's accident: Haymarket: as approached from Morrison Street (travelling westbound)

Road and tram track lay out in vicinity of Haymarket Station

[14] A cyclist traveling west by road from Morrison Street will pass Haymarket station to the left. In front of Haymarket Station there is an area, separated from the road by a small pedestrian traffic island, for taxis to pick up and drop passengers ("the taxi area").

Immediately before this traffic island there is an entrance to the taxi area to the left; the taxi egress is a little further along, just beyond the end of the traffic island.

[15] The taxi area has since been altered as a defined or more prominent route for cyclists. In evidence it was described as a "jug". The design intention appeared to be to create a chicane to enable cyclists to loop left into the taxi rank area and then to turn back right so that they could cross the tram tracks at an angle that is closer to perpendicular.

[16] The road carrying traffic west begins to curve gently to the right from about the entrance to the taxi area. At this point, there are two lanes for traffic travelling west. The tram tracks are situated in the nearside or left-hand traffic lane.

[17] At the material time there was no dedicated cycle lane. Rather, cyclists wishing to avoid the tram tracks at this point required to cycle in the narrow strip bounded on the left by the raised edge of the traffic island (a concave curve) and the left-most track of the westbound tram track. This is the path Ms Fairley took on the day of her accident. There was limited evidence about a cycle lane commencing first within the taxi area, although this conflicted with a “keep right” sign on a bollard at the entry to the taxi area (which directed road users *away* from the taxi area). The defenders do not criticise Ms Fairley for not using that short cycle lane leading into the taxi area.

Necessity to cross tram tracks

[18] The road continues to curve gently to the right beyond the taxi egress. A car or bike traveling west beyond Haymarket Station is obliged at this point to cross two sets of tram tracks: first, the tram tracks for west-bound trams and, a short point later, a second set of tracks for east-running trams. If a cyclist remained in her lane and followed the curve of the road, the angle of crossing the tram track was about 30 degrees. The distance between the two sets of tracks at this point is a matter of a few metres. If a cyclist does not avail herself of the cycle lane into the taxi area, the only way to avoid crossing the tram tracks at too shallow an angle, is to manoeuvre into the other (ie right-hand) lane (depending on other traffic in that lane) or to dip left into the egress of the taxi area (potentially riding into the path of taxis exiting from the taxi area).

Signs and road markings

[19] At the start of the traffic island, there were conflicting signs in the sense that there was a bollard at that point with an arrow directing traffic to keep right (ie *not* to enter the

taxi area) but there was a marking on the ground (not on the roadway but commencing from just within the taxi area) indicating a cycle lane to the left (ie into the taxi rank area). (There was some evidence to suggest that it would be illegal to ignore the bollard and go left.)

There was a curved white arrow painted in the left-hand lane of the road pointing in the direction of traffic; at the point where the road crossed the egress from the taxi area there were several white dashes defining the left side of the left-hand lane, also following the curve of the road. These indicate the edge of the carriageway.

[20] At the traffic lights just before Haymarket there were two signs: one was a small yellow triangular sign with the “slippy bike” symbol, mounted on the pole of the traffic light at the nearside (at about the eye height of a pedestrian); further along on the opposite, or farside, pavement, was an orange square sign stating:

“Caution Tram Tracks”.

[21] For completeness, I should note that there is a bike box within the taxi area. As there is no case directed against Ms Fairley in relation to this (the defenders’ attempt to insert such a case by minute of amendment on the first morning of the proof having been refused), I need not describe this further.

The locus of Mr Lowdean’s accident: Princes Street at the junction with Frederick Street (travelling eastbound)

[22] When approaching Princes Street from Lothian Road, there are three lanes to take the road user right onto Princes Street. As Princes Street is closed to private cars beyond South Charlotte Street, the left-hand and middle lanes take traffic off Princes Street at this point and into South Charlotte Street. If one is continuing to travel straight on Princes Street, there are only two lanes westbound after the South Charlotte Street junction. From this point (ie

after the South Charlotte Street junction) the left-hand lane is for buses. There are many bus stops along the length of Princes Street. The tram tracks for the tram travelling eastbound are situated in the right-hand lane. Any permitted road user (eg a cyclist) wishing to travel east along Princes Street from the junction with Lothian Road can only do so from that point by choosing the far right (or third lane).

Road markings

[23] Two areas of road markings assumed significance in the Lowdean action. The first road marking was the symbol of a bike which appeared between the tram tracks (ie in the right hand lane), in the first part of Princes Street (ie at about the point of the South Charlotte Street junction) when joined from Lothian Road. Further along Princes Street, at the T-junction with Frederick Street, there are road markings on Princes Street to direct traffic from the right-hand lane into the left hand lane. In particular, an arrow curving toward the left-hand lane is painted in the right-hand lane. There was also a line formed from painted white dashes running at a diagonal from right to left in the same direction as the arrow. (Mr Franklin measured the angle of this line as 7 degrees.)

[24] I should also record that just before the traffic lights at the Frederick Street junction, there is a bike box painted in the left-hand lane. Mr Lowdean was never asked in the course of his evidence whether he had seen this bike box; nor was it ever suggested to him that he should have used it.

Other uncontested matters

The STV article

[25] An article from the STV news website dated 21 June 2012 (“the STV article”), noted the confusion caused to cyclists about the bike symbol in the middle of the right-hand lane of Princes Street, and which gave cyclists the impression that this was a cycle lane. The STV article recorded the Council’s advice that cyclists should avoid riding between the tram tracks.

The Council advice video and Council leaflet

[26] There was some evidence of an advice video produced by the Council in 2009 in the form of a cartoon (“the Council advice video”). A very brief segment of this was played and purported to show a cyclist performing an unnaturally sharp turn to cross a tram track at 90°. There was no suggestion that this was to scale or could be executed from within tram tracks. Passing reference was made to the Council leaflet. Nothing in the evidence suggested that this was or should have been known to the pursuers, or that they would or should have acted differently had they known its contents, or that its production exonerated the defenders to any degree.

YouTube videos

[27] A number of short YouTube clips were played during the proof showing cyclist negotiating the tram tracks outside Haymarket station, some dating from about October 2013. Generally, these showed that the traffic lanes were busy with vehicular and cycle traffic. Some cyclists slipped or slipped and fell, while others managed to cross without slipping or falling. In one, a cyclist hopped his bike over the tram tracks.

The Pleadings: averments common to both actions

The pursuers' pleadings

Factual averments of the known risks posed by tram tracks to cyclists in urban settings

[28] In each action the pursuer avers the following:

- (1) That it has been “well known for many years that the presence of tram tracks in an urban street poses a danger to cyclists” (Article 5 of Condescence). This is vouched by reference to some of the general design documentation referred to above.
- (2) That the Manual articulated principles of design *inter alia* to reduce potential conflicts between cyclists and trams and to improve and extend cycle routes (Article 6);
- (3) That tram lines pose a risk to cyclists if crossed at a shallow angle, including the risk of a loss of control and a fall to the ground.

The defenders admit these averments.

Generic averments relating to design and implementation of the Tram

[29] It is clear that the pursuers' two summons follow a basic template (article 2 to 9).

This includes reference (in Article 5) to the materials referred to in paragraph [8(1) and (2)], above. However, there are also averments about general or high level issues concerning the design of the Tram and references to the Manual and to Goudappel Coffeng (Articles 6 and 7).

Averments of the general risks of crossing tram tracks at shallow angles

[30] Article 8 of each Summons contains general averments about the risks of crossing tram tracks at shallow angles. (These are admitted.) It is averred that in order to avoid this reasonable care must be taken to design, construct and maintain a layout so that “(i) tram tracks and cycle lanes are separated; (ii) bicycles are guided to cross tram tracks at an angle as close to the perpendicular as possible.” In the event, parties joined issue at proof only on issue (ii). This was supported by a further averment that “A layout where cyclists are encouraged or guided or required to cross tram tracks at an acute angle is unsafe and should be avoided”.

[31] To the end of Article 8 in each action, it is averred that:

“the hazard presented by the tracks is not and was not obvious. It was in any event unavoidable as a result of requiring, encouraging and guiding the pursuer to cross the tram tracks at an acute angle. It would not have been safe to dismount. Any signs did not warn of the nature of the hazard or how to cope with it. Training would only reach a tiny minority of the cycling population.”

Averments of a specific hazard

[32] While the pursuers had their accident at different locations of the Tram, the hazard identified was, essentially, that of compelling or guiding cyclists to cross the tram tracks at an acute angle.

Averments of legal duty

[33] The averments of duty are found in Article 11. The following duties (which I have numbered for ease of reference) are pled:

- (1) “It was [the defenders’] duty to take reasonable care to reduce to a minimum the risk presented by the tram tracks to cyclists such as the pursuer using the street section of the tram line”;

- (2) “[The defenders] were under a duty to take reasonable care to avoid creating or maintaining such a hazard in the design, construction and maintenance of the road layout for cyclists”.

[34] There are some averments specific to each action, which I note in the next two paragraphs. In both actions it is also averred that the road set up markings and “required[,] guided and encouraged cyclists to cross at an acute angle. It would not have been safe to dismount.”

[35] After the averment of the hazard said to have been posed in the specific *locus*, there follow in Article 11 several averments of what the defenders knew or ought to have known, namely:

- (1) “that the layout, road markings and traffic conditions of the eastbound lanes was [*sic*] such that cyclists were required, in any event encouraged, in any event guided to cross the tram tracks at an acute angle...”; and pressure from traffic.
- (2) “that the presence of such a hazard would be likely to result in an accident of the type sustained by the pursuer”.

[36] There are the standard averments that the defenders breached these duties and that those breaches caused the accident.

Comment on scope of the duties pled by the pursuers

[37] While the Council are designed as the roads authority, no statutory duties are pled against it. The pursuers’ case against the defenders is, essentially that the layout, road markings and traffic conditions created a hazard to cyclists by guiding them across the tram tracks at a shallow angle, and that this was a foreseeable risk it was their duty to avoid or

minimise. (This is consistent with parties' submissions at the end of the proof and made under reference to the same cases.) Whatever the precise articulation of that duty, the duties pled did not constitute or permit a wholesale attack on the design of the Tram. The content of any common law obligations of a roads authority, local authority, or design team instructed by them in respect of the design, implementation and maintenance of a tram scheme or the standard to be applied is not a straightforward issue. The issues at proof (as defined in the parties' pleadings), did not permit a wide-ranging review or general critique of the defenders' design choices. Other than to identify some advice or other adminicle of evidence to instruct the foreseeability by the defenders of a general risk of harm (eg namely the "tram risks", derived from the general design documentation), or knowledge of a specific risk of harm at a particular location (eg because so identified in a passage in an RSA), the *evidence* relevant to these duties did not extend to an exploration of the evolution of the Tram, the options considered but not adopted or what other options might have been recommended.

[38] It is necessary to note this, because large parts of the reports from the parties' experts ranged well beyond the legal duties pled. In part, this is because "generic" reports were instructed and these, having been prepared by engineers, dwelt at length on the evolution of the design rather than the more pertinent question of whether the features of the part of the Tram under consideration posed a risk of harm to cyclists exercising ordinary skill or care and which was reasonably foreseeable to the defenders. Much of the evidence parties sought to elicit from experts was also of this more general nature, rather than on this question of liability. I do not propose to rehearse this evidence, as it is beyond the scope of the duties pled and irrelevant to that central liability issue.

The defenders' averments

Averments anent defenders' design materials

[39] For their part, the defenders make extensive reference to the defenders' documentary materials to defend their decision not to follow recommendations at various stages (eg because of their temporary nature) and they refer to private and public consultations undertaken since 2004 with a number of bodies. They aver that they considered "European and national standards and local policies and procedures". They introduce averments about RSAs undertaken from 2008, the decision not to adopt the recommendations in the Goudappel Coffeng report and the decision not to adopt *inter alia* an alternative parallel route via George Street. They make averments about the difficulty in providing a cycle lane compliant with UK standards given that this would require the permanent loss of pavement in Princes Street to the detriment of pedestrians who measure, on average, 70,000 on a typical Saturday. It is averred that "[i]n simple terms, the benefits to cyclists are outweighed by the detriment to pedestrians, particularly given the numbers involved. At any location in the centre there simply isn't enough road space to meet everyone's wishes." The defenders aver they took "a balanced view" and provided cycle lanes where space permitted and provided advance stop lines and lead-ins where space and traffic constraints allowed.

Averments about consultations, leaflets and other matters

[40] There are further averments about a leaflet produced in March 2009 ("the Council leaflet"), about a consultation exercise and subsequent meetings with SPOKES (a cycling interest group) and ongoing consultations with others. There are also averments about signs erected in December 2009 and training sessions provided at that time.

The defenders' averments about obvious risks

[41] The defenders' averments that are, perhaps, more pertinent to their defence include averments that the tram tracks "were or ought to have been obvious" to cyclists; that there was no obligation on the roads authority to protect cyclists from anything obvious; and that the roads authority was entitled to assume that road users and cyclists proceed with reasonable skill and care.

Averments of what was not reasonably practicable

[42] In relation to the defenders' averments that it was neither reasonable nor practicable to provide guidance marks at every potential location where a cyclist may require to cross a tram track, in these cases the pursuers do not predicate any case on the absence of road markings. In the Lowdean action, it was the *presence* of road markings directing him to cross at a particular point (and at which point the angle was argued to be inevitably too shallow) that is relied on, not their absence.

Averments of other risks

[43] While the defences also contain a general averment that there are other road hazards, such as manhole covers and the like, there was no evidence that such features played any part in the circumstances of either of the pursuers' accidents.

Defenders' general averments of contributory negligence

[44] The defenders take a plea of contributory negligence in each of the pursuers' actions.

In support of this plea, the defenders aver that the pursuer:

"had a duty to take reasonable care for her [or his] own safety, to cycle safely, to keep a proper lookout and to take care when cycling in proximity to and over the tram

lines". On *esto* basis that the pursuer was unable to cross the tram lines at an appropriate angle, it is averred that she [or he] should have (1) dismounted from her [or his] bicycle and walked with it, and (2) slowed her [or his] speed to allow her [or him] to cross the tram lines at as great an angle as possible."

[45] It is further averred that each pursuer's actions were contrary to (1) all advice and guidance issued to cyclists on the Internet and through published codes and recommendations, (2) common sense, (3) the Highway Code and a cycling guide known as *Cyclecraft*.

Comment on the defenders' averments anent the defenders' design materials

[46] In my view, little if any of the defenders' averments anent their design materials (summarised at para [39] ff, above) is pertinent to the case of liability advanced by the pursuers at proof. Tracing the iterative process of development, implementation and assessment of the Tram in order to defend certain design choices as "reasonable" or "balanced" is not germane to the issues in this case. Indeed, passages in the expert reports and in the pleadings read as if this were an action for professional negligence in respect of design issues. Inapt as that is to this kind of personal injury action, in any event no duties commensurate with that kind of case were pled or insisted in at proof.

[47] If the design ultimately implemented and adopted resulted in a foreseeable risk of harm to cyclists, the fact that certain constraints informed the defenders' design choices does not (in the absence of a defence based on reasonable practicability in respect of the specific design feature) relieve the defenders of liability. (The only matter averred not to have been reasonable or practicable was the provision of "guidance markers at every potential location" where a cyclist might cross a tram track.)

The central liability question in the pursuers' actions

[48] The central liability question in this case was whether the features at specific locations presented a significant risk of harm to cyclists and of which the defenders knew or ought to have known. If, in fact that were the case, it matters not, in my view, that the defenders can demonstrate a “reasonable” or “balanced” decision-making process that led them to adopt an unsafe design solution at that location.

The Pleadings: averments specific to each action

Ms Fairley's action

Averments anent the locus

[49] In Article 9, it is averred that the Haymarket junction was reopened to traffic on or about 12 October 2013, although the trams were not in operation at that date. There was ongoing construction at the tram stop to the west of Haymarket Station. There were red and white barriers placed ahead of the inside lane of westbound traffic to the west of Haymarket Station. White lines and arrows painted on the road guided westbound traffic across the tram tracks at an angle of around 30°. Westbound traffic from Morrison Street approaching Clifton Terrace had to cross the tram tracks at an angle of around 30°.

[50] There follow general averments in Article 9 that:

“[The defenders] had not installed a segregated or separated cycle lane. The hazard of crossing the tram tracks at an acute angle occurred in many instances. The layout, road markings and traffic conditions were such that in many instances, a cyclist was guided or encouraged or required to cross the tram tracks at an acute angle.”
(Emphasis added.)

[51] It is averred that “the available space for cyclists at the Haymarket Junction was too narrow following the installation of the tram tracks”. There then follow averments about remedial steps implemented at a later point in time (including a cycle lane into the taxi area

or “jug” (operating as a chicane)), the purpose of which “was to indicate a wider angle for westbound cyclists to cross the tram tracks”.

Averments about other accidents

[52] It is further averred (in Article 9 that in the period between 12 and 22 October 2013:

“there were numerous incidents involving cyclists slipping or falling after coming into contact with the tram tracks [of the Tram] as a result of crossing at an acute angle. Around 23 of these were reported to the defenders. There have been numerous similar accidents since. The number of accidents in Edinburgh involving cyclists is significantly greater than in other cities where tram or light rail systems have been introduced. The defenders have not taken any other measures to reduce the hazard to cyclists.”

Averments anent the Council leaflet

[53] In Ms Fairley’s action reference is made to the Council leaflet entitled “Cycling and Trams” and published in March 2009, which advised that:

“the proposed design solutions had not been practicable” and which advised cyclists to cross tram tracks at an angle as close to 90° as possible. This leaflet is also averred to have “advised that road markings had been installed to help cyclists make the right moves. This was not correct. At Haymarket Junction, the road markings actively encourage cyclists into the hazard of crossing the tracks at a narrow angle.”

Averments in the Lowdean action

[54] There are similar averments about other accidents (to those quoted two paragraphs above) but said to arise in the period from November 2009 to October 2012. The averments specific to the location of Mr Lowdean’s action are as follows:

“The defenders had not diverted cyclists from the tram tracks in Princes Street. They had not installed a segregated or a separated cycle lane. The hazard of crossing the tram tracks at an acute angle occurred in many instances. The layout, road markings and traffic conditions were such that in many instances, a cyclist was guided or encouraged or required to cross the tram tracks at an acute angle”. (Article 9) (Emphasis added.)

And

“The road markings guided [Mr Lowdean] to cycle between the tram tracks.... There were other vehicles in the near-side lanes [ie left-hand lanes] and behind him. The pursuer approached the nearside junction with Frederick Street. At that point on Princes Street the eastbound two lanes merge into one. A traffic island for a tram stop had been constructed in the centre of Princes Street to the east of the Frederick Street junction. A broken white line had been marked in the offside lane [ie right-hand]... [it] ran across the tram tracks at an acute angle... a white arrow had been painted in the [right-hand] lane. The arrow and broken white line gave positive guidance to a cyclist such as the pursuer to cross the tram tracks at an acute angle.” (Article 10)

The pursuers’ proof

Ms Fairley

Examination in chief

[55] Ms Fairley, aged 58, is an advanced nurse practitioner at the Royal Hospital for Sick Children in Sciennes. She lives in Corstorphine. She has regularly cycled between her work and home when on day shifts for around 15 years. She rode a hybrid bike with extra sturdy tyres. The wheel width was between that of a conventional road bike and a mountain bike. Her usual route included cycling west from Morrison Street and past Haymarket station. She described the weather on the day of her accident as dank, wet and dreich. She described it as semi-dark outside because of the rain and clouds, and the time of year. Shortly after 5.00 pm she found herself stopped at the traffic lights just before Haymarket, when approached from the east via Morrison Street.

[56] This section of the tram works had opened two days earlier. By reason of her shift pattern, this was the first time she travelled through this part. While stopped at the traffic lights, she could see the tram tracks ahead, which she observed had to be crossed at a very shallow angle. She noted the triangular “slippy bike” warning sign. She had not seen any orange rectangular warning sign (situated on a post a little to the right and ahead of the junction). Traffic was moving slowly because there were lots of cars. It was an unfamiliar

route. When the traffic light turned green she moved off and kept as far left as possible. She had passed the entranceway to the taxi area outside Haymarket station. She could not recall if the taxis in the queue were backing up into the street.

[57] Ms Fairley was aware that the tram tracks were in this location and that she would have to cross them at this point. She described trying to pull into the right lane of traffic in order to cross the tram tracks at as near a 90 degree angle as possible. She was conscious of the traffic in that lane. She was sure that her front wheel crossed over the left and right hand tracks for the westbound tram line when a wheel slipped. She described the back wheel being pulled back into the tram track. She was thrown or catapulted to the right, falling heavily onto the right-hand carriageway. The car travelling in that right lane was able to stop, doing so just 10 or 12 inches short of hitting her head.

[58] She explained why she was endeavouring to cross the tracks at as great an angle as possible (ie as close to perpendicular or 90 degrees). This was because she had had a wobble about a year earlier when she was cycling east-bound on Princes Street with the intention of turning right onto Waverley Bridge. Her bike wheel had slipped as she crossed the tracks at a relatively shallow angle. She learned from this that one needed to cross tram tracks at a great a degree as possible to avoid a wheel getting dragged into the track.

[59] In relation to road markings, she did not recall seeing any arrows painted on the road surface (ie the taxi egress). Nor did she recall white dashes painted on the road surface following the line of the curve. In terms of her speed, she estimated that she would generally average around 10 mph but at this point she had slowed considerably due to traffic, the weather conditions and the fact that she was navigating an unfamiliar road layout. This section of the road was new to her.

Cross-examination

[60] In cross examination, Ms Fairley confirmed she was confident in traffic and readily accepted the propositions put to her that she was a careful cyclist; that it was important to keep a proper look out; to pay attention to signs; to pay attention to road markings and to follow any guidance that they give and that it was important to cycle at an appropriate speed. She also accepted that there can be a variety of hazards such as bottles, drains, manhole covers and wet road lines (eg such as double yellow lines, with qualities of being raised and, if thermoplastic, slippery). She accepted it was important to remain alert. She accepted that it was important to follow the Highway Code. While she was unaware that it gave specific guidance on crossing tram tracks, she already knew from her experience a year or so earlier of slipping in Princes Street, that care had to be taken when crossing tram tracks because it was dangerous and one's wheel can get caught.

[61] She accepted that it was common-sense not to cross tram tracks at a shallow angle. She estimated that she crossed at an angle of about 45 degrees.

[62] The next passage of cross examination probed aspects in which her parole evidence differed from a statement provided in January 2018 (ie more than four years after the accident). The principal differences were (i) that in her statement she described having to overtake the taxis; (ii) that it was her front (not her rear) wheel which became trapped in the tram track, (iii) the location where she said she crossed and fell was a few metres on from the egress from the taxi area and as she was crossing the second set (ie eastbound) tram tracks.

[63] In relation to what she might have done, this was explored relatively lightly. She was asked if she had not or should not have stopped to let traffic pass, but she explained she would not do so while in the middle of the road. It was suggested she could have slowed

down but she explained that she was going pretty slow. To the suggestion that she was not keeping a proper lookout, she stated that she was doing so to the best of her ability. She rejected the suggestion that she was not cycling carefully. She was cycling as carefully as she could: it was a new situation; it was dark; the road was busy and she was doing what she could to keep herself safe. All of this was happening in real time.

[64] Nothing was put to this pursuer to elicit whether she would or should have acted differently if she had seen the second, rectangular sign or the road marking for a cycle lane left of the bollard. Nor was she asked about the defenders' training videos, or training sessions in 2009, or the Council leaflet.

Re-examination

[65] There was little of significance on re-examination. In respect of the conflict between her parole evidence and her statement about whether she fell while crossing the westbound or eastbound tracks, she ultimately adopted the position given in her parole evidence.

Mr Lowdean

Examination in chief

[66] Mr Lowdean, a 35-year-old professional golfer, moved to Edinburgh in August 2011. Accordingly, at the time of his accident on 22 October 2012 he had lived in Edinburgh for a little over one year. He cycled to work about 90% of the time. He was an experienced cyclist, having also cycled regularly in Cardiff and London. He was riding a Raleigh hybrid bike. This had medium width tyres, not thinner road tyres.

[67] On the day of the accident, he was cycling north on Lothian Road, intending to turn right and travel east for the full length of Princes Street. He had not taken this route before. The weather was clear; it may have rained earlier that day; it was not “bone dry”.

[68] While stopped at the traffic lights on Lothian Road just before it joins Princes Street, he was looking to see where to go. He could see buses on Princes Street. Shortly after he turned right onto Princes Street, he saw the bike symbol in between the tram tracks so he also directed his bike between them. He was in the right-hand lane. As he cycled along Princes Street, passing the first two junctions (with South Charlotte Street and Castle Street) while still in the right lane, he was aware of buses to his left but the traffic was not “crazy busy”. He stopped at the next set of traffic lights, which were red, at the beginning of the T-junction with Frederick Street. He remained in the right-hand lane, in between the tram tracks. There was no traffic immediately to his left, but he saw a bus was stopped in the left-hand lane at the bus stop just before that junction.

[69] Looking ahead while stopped at the traffic lights, he could see a white line coming across his lane forcing him left into the left lane where the buses were. There was also a white arrow from within the tram tracks also pointing at an angle to the left hand lane. Mr Lowdean interpreted these as clearly meaning “Move over”. He knew about the need to cross this at a wide-angle. He naïvely assumed it was a 45° angle. He signalled by taking his left hand briefly off his handlebars and then replacing it on his handlebars with a strong grip. He started to cross the left-hand tram track when his back wheel slipped and he was flung down hard onto the roadway near or at the pedestrian crossing. He was fairly sure that his wheel had lodged in the groove of the tram track and this caused him to go over. He estimated his speed to be about 5 mph. He was not conscious of traffic behind him (or could not remember any).

Cross examination

[70] In cross, Mr Lowdean confirmed that he had been a cyclist for some time; he was a competent and confident rider; he was familiar with the hybrid bike he was riding; and he was riding in an upright position. He also accepted propositions put to him to the effect that a cyclist must take care and keep a proper lookout; maintain a proper speed; and that there may be hazards on the road in the form of bottles, drains and metal covers. He was aware of the presence of the tram tracks. He had cycled through Haymarket previously but this was his first time cycling on Princes Street since the tram track was in place. He was also aware of the need to cross the tracks at as wide an angle as possible. He was also aware of the risk of turning across them at a shallow angle.

[71] He was asked if he was aware of a rule in the Highway Code about crossing tram tracks, but it was not suggested he had breached that rule. In response to a question asking him to explain what steps he should take to cross a single tram track, he explained the need to have a good angle, being one of 45° or greater. He accepted it was common sense not to cross a tram track at a shallow angle and that a cyclist taking reasonable care would not go across at a shallow angle.

[72] In relation to the circumstances leading to his accident, he could not recall vehicles passing him on the inside (ie left-hand) lane. He was upright at the time. He was cautious, and holding onto his handlebars with a decent strength. He had not looked behind him before pulling away. He had checked to his left and as he crossed over the left hand track his wheel slipped and he fell. His wheel had gone into the groove of the track. He estimated his speed to be about 5 km/h or 5 mph.

[73] He was cross-examined under reference to a prior statement he had given a year or so previously. While this confirmed that the accident happened just after the third set of traffic lights, namely those which control the T-junction at Frederick Street, this recorded that it was his front wheel that had got into the tram track.

[74] Objection was taken when Mr Lowdean was asked why he did not move over to his left when he was stopped at the light. I heard this evidence under reservation. In the end, he was unaware of the bike box in the left-hand lane (only) at those lights. This line was not relied on in submissions.

[75] In response to further questions, he confirmed that while he was stopped at the traffic lights, he was looking ahead. He noted the change of direction arrow ahead. He had not known before he reached the traffic lights that he would need to move over into the left-hand lane. He had not cycled this section of the Tram before. He saw the arrow and the directional dashes or a line on the roadway, and he moved over as these directed. This required him to cross over the left-hand track. He was moving slowly; he had been stopped at the traffic lights just before this and he was just pulling away. In any event, he had slowed down and approached the left-hand tram track slowly because he knew he needed to cross it. It was put to Mr Lowdean that at a slow speed it would have been possible for him to turn from within the tram track left over the left rail at a 45° angle. His response was, simply, that it was too narrow to do so. Mr Lowdean was not asked from what point within the tracks (ie how far left or right) he had initiated his turn. It was not put to him that he should have turned as far right as possible, in order to increase the angle as he turned left.

[76] It was suggested to Mr Lowdean that he was not paying attention; not keeping a proper lookout; not cycling carefully and not taking reasonable care for his own safety in the circumstances described. Mr Lowdean robustly rejected these propositions.

[77] There was no re-examination.

Witnesses led to speak to their own accidents

[78] Mr Di Rollo next sought to lead evidence from two other cyclists (Kirsty Ireland and Kimberly Sibbald) who had accidents while crossing the tram tracks in Princes Street. (The witness statement of a third cyclist, Gillian Daniels, was agreed to at the end of the proof.) The accidents involving both of these witnesses post-dated the date of Mr Lowdean's own accident. Mr Love's principal basis of objection was that the circumstances of their accidents had not been set out on record. In reply, Mr Di Rollo relied on the averment (noted above, at para [52]) that there had been many accidents involving cyclists and tram tracks. He also sought to elicit their evidence in order to demonstrate that, once a cyclist was between the tram tracks, it was difficult if not impossible to get out from between them safely.

Kirsty Ireland

[79] Ms Ireland's accident occurred in December 2013 on Princes Street as she was crossing from one lane to another or heading east. She was using a mountain bike at the time. She described the weather as "quite wet". In her evidence in chief, she explained that she was in the left-hand lane (ie not the lane adopted by Mr Lowdean). She was trying to stick with the buses. It was as she was moving *into* the right-hand lane that her tyre slipped or became trapped in the left hand track and she went over the handlebars. She was not travelling very fast. In cross-examination, however, Mr Love put her prior statement, which described her as moving from *within* the tram tracks on the right-hand lane into the left-hand lane. She adopted this version of her accident. In re-examination, she was invited to prefer her witness statement as a more accurate description of her accident.

Kimberly Sibbald

[80] Ms Sibbald also described an accident as she was riding east on Princes Street in December 2012. She was riding a Raleigh bike but could not confirm whether it was a hybrid or road bike. She was only sure it was not a mountain bike. (Her witness statement, which she later adopted, recorded that it was not her bike and she had borrowed it.) She could not recall what the weather was like nor, very clearly, what time of day; she hazarded sometime in the afternoon. At that point she was very new to Edinburgh, having only lived there for a few months. She described being among the throng of people on the west end of Princes Street near Frasers' after a rugby game had finished. She was looking for a safe place to get on her bike so she could cycle to Waverley. She looked and saw the bike symbol on the ground (ie the one in the right-hand lane) so she put her bike on it and started cycling. She realised she was between the tracks and was trying to find a safe way to get out. She was hoping the lights would go red so she could stop her bike. She felt she had to get out of the way of a bus. There were a lot of buses and she felt unsafe. She knew she had to get out from between the tram tracks and that she needed to cross the track at a right angle. She did not know what to do when she was in the situation she found herself, ie in between the tram tracks. When she tried to get out her tyre slipped and she fell. It all happened "in a split second".

Gillian Daniels

[81] Gillian Daniels was not called to give evidence. She had provided a statement, dated 27 January 2018, in respect of an accident she had had on 24 June 2014 in the same location as Ms Fairley's accident. By Joint Minute it was agreed that her statement would be her

evidence in chief. The defenders did not require her presence and, accordingly, there was no cross examination.

[82] Mrs Daniels, 54 at the time of her accident, described herself as an experienced cyclist. As at the day of her accident, she had not yet cycled on streets in Edinburgh where tram tracks were located. She was riding a hybrid bike with medium tyres (ie not as thin as a road bike, nor as wide as a mountain bike). The weather was clear.

[83] At about 7.00 pm she had cycled from Morrison Street, intending to travel past Haymarket Station in order to turn right onto Rosebery Crescent. As she approached Haymarket Station, she had intended to turn into the jug area comprising part of the taxi area. It was full of taxis. She was compelled to follow the roadway, in the narrow space between the kerb of the traffic island and the left-most tram track of the west-bound tram line. The road bent to the right. She checked traffic around her and, as she moved right to cross the tram tracks, her front wheel caught in the groove of the tram track. Her bike came to a sudden halt. She was catapulted over the handlebars. Other cars just managed to avoid her. She broke her left wrist in four places.

Timothy White

[84] Mr Timothy White, a Consultant Trauma Surgeon at Edinburgh Royal Infirmary, was called to speak to an article he had co-authored, "Tram system related cycling injuries" in the *Archives of Orthopaedic and Trauma Surgery* published in January 2018 ("Mr White's article") (albeit the article was agreed in one of the joint minutes). In brief, Mr White's article analysed 251 accidents, reduced to 191 when not involving cyclists, over the seven-year period from May 2009 to April 2016. The article focuses on the types and severity of injuries, not the dates on which they were sustained. In his parole evidence he explained

that he was prompted to undertake the study because of the presentation of a new group of patients (ie cyclists). Only one of these involved collision with a tram; the rest arose from interactions between cyclists and tram infrastructure. Cross examination was confined to a few questions clarifying the methodology. In re-examination he confirmed that the numbers were derived only from those who present at A&E departments of hospitals local to Edinburgh.

The pursuers' proof: skilled witnesses (Mr Jones and Mr Franklin)

Introductory comments

[85] The pursuers led two skilled witnesses, Phil Jones and John Franklin. Mr Jones produced one report and Mr Franklin produced three, one was a "generic report" discussing the Tram, and two were specific to the accidents of Ms Fairley and Mr Lowdean. Collectively, their evidence comprised about three days of evidence at the proof.

[86] Much of their reports and evidence rehearsed the general design documentation, whose principal propositions I have summarised above (at para [11]), or discussed passages of the RSAs which did relate to the two locations at which the pursuers' accidents occurred. Mr Jones also referred to aspects of the defenders' design materials, for the purpose of noting recommendations that were not implemented. However, as noted above (at para [38]), it is outwith the scope of this proof to consider the prolonged iteration of the Tram and the design choices made as part of that process. The question in this proof is whether the layout of the Tram posed a hazard at one or both of the locations under consideration; if so, it is not necessary or relevant to consider how that layout evolved except to the extent it informs questions of foreseeability. I do not propose to record this evidence.

[87] Additionally, lines of questions were pursued with each expert (generally without objection) about their *own* experiences as cyclists or their personal views on features of the Tram. The same may be said of lines of questions posed to the defenders' two expert witnesses. I found this evidence of little utility.

Mr Jones

Qualifications

[88] Mr Jones is a Chartered Engineer and member of several professional bodies, including the Institution of Civil Engineers and the Chartered Institute of Highways and Transportation. He is a transport planning consultant and an expert in the planning and design of cycling infrastructure. He sits on the Department for Transport's Cycle Proofing Working Group, which advises it on cycling infrastructure matters.

Report on Mr Lowdean's accident

[89] In so far as Mr Jones commented in his report on the specific location of Mr Lowdean's accident, these may be summarised as follows:

- (1) He described the manoeuvre from Lothian Road into Princes Street as "a complex and hostile one", for a cyclist, even without the added hazard presented by the tram tracks. This was because cyclists approaching from Lothian Road must first "weave across the two heavily-trafficked lanes (which lead into South Charlotte Street) in order to position themselves in the right-hand lane leading into Princes Street. Cyclists would need to look behind them to see gaps in traffic in the two traffic lanes for making this manoeuvre."

- (2) Once positioned in the third or right-hand lane, there was “no clear space available to cycle safely”. There was no dedicated cycle lane;
- (3) The road markings in the third or right-hand lane included a bike symbol printed on the road between the tram tracks;
- (4) Beyond the South Charlotte Street junction, riding between the tram tracks “would appear to be a relatively safe and comfortable place to cycle” as cyclists were “at a much lesser risk of being struck by buses moving into or out of the many stops along the street than if they cycle in the unmarked space between the tram tracks and the bus stops”;
- (5) However, just after the Frederick Street junction, road markings directed all road users to move into the left-hand lane. (The right-hand lane required to accommodate a tram stop and pedestrian island serving it.)
- (6) His conclusions in relation to Mr Lowdean’s accident were:
 - (i) that the “lack of any clear space for cycling between the outside lane [ie the right-hand lane] used by trams and the other traffic lane(s) to the left, both on the approach to and along Princes Street, and the design of the road markings meant that he was encouraged to ride in the centre of the tram rails, a fundamentally unsafe place to cycle”; and
 - (ii) Mr Lowdean had to leave his position between the tram tracks at the Frederick Street junction and “in doing so could not avoid crossing the tram rail at a shallow angle, which caused him to slip and fall”.

Report on Ms Fairley's accident

[90] In so far as Mr Jones commented in his report on the specific location of Ms Fairley's accident, these may be summarised as follows:

- (1) It was understandable that Ms Fairley did not turn into the taxi area. She followed the line of the carriageway around to the right. Mr Jones referred to one of the YouTube videos, agreed to have been made on the day of Ms Fairley's accident, showing cyclists crossing the tram tracks in this area at a shallow angle.
- (2) Mr Jones referred to a number of accidents either on or after the date of Ms Fairley's accident and from these concluded that there was "a severe safety problem at this location" and one which "was entirely predictable given the layout of the tram tracks and the absence of any appropriate cycling infrastructure".
- (3) Although it postdates Ms Fairley's accident, he referred to the report entitled "Haymarket Junction Operational Review", issued on 14 November 2013. This report noted a number of incidents where cyclists cross the track at an angle of less than 60°. The same report also noted the problem of taxis queueing from the taxi area into the roadway at Haymarket Terrace which exacerbated the problem.
- (4) His conclusion in relation to Ms Fairley's accident was that "the layout directly led to her (and many other cyclists) crossing the tram tracks outside Haymarket Station at a shallow angle".

Parole evidence

[91] Mr Jones adopted his reports. Having sat in during the pursuers' evidence (as well as that of the other witnesses), nothing he had heard caused him to modify his views.

[92] A number of the short video clips posted on YouTube (of cyclists negotiating the curve at Haymarket) were put to Mr Jones for comment. Generally these showed some cyclists slipping or skidding and one falling. He noted one cyclist negotiated the tram track by jumping over the rail, but this was not a manoeuvre to be expected of an ordinarily competent cyclist.

[93] He was taken to some of the general design materials and he also explained in general terms the purpose of road safety audits. He spoke to some of the passages from the RSAs specific to the pursuers' accidents. (None of this was subject to challenge in cross and I have set out the relevant passages above.)

[94] In relation to a cyclist turning right from Lothian Road into Princes Street, he described this as "complex and hostile". It was "complex" because they were a number of manoeuvres to undertake, including a right-hand turn with traffic (which is more difficult than a left-hand), the need to choose which lane to use to turn right and the need to avoid being side-swiped by vehicles turning left into Charlotte Street from the two left-hand lanes. It was also "hostile" because a cyclist had to contend with a large volume of vehicular traffic which generally moved faster and some of which might cut across the path a cyclist. All the while, a cyclist would need to check on the traffic around him and to signal his intentions. In road safety terms, in order for a cyclist to avoid conflict with left turning cars, he would have to choose the right-most lane, which contained the tram tracks. By reason of the layout and the bike symbol in the roadway, it was to be expected that cyclists would position themselves in the right-hand lane between the tram tracks.

[95] The STV article was put to him (see para [25], above.). Mr Jones' comment was that it was not geometrically possible to cross out from between the tram tracks at the recommended angle. He reiterated that it was not possible to come out from between tram tracks at an angle greater than 45°. In order to maximise the angle when exiting from in between tram tracks, a cyclist needed to move closer to the right-hand rail (although if this were impinged, this increased the risk of falling). In this way a cyclist might maximise the angle to cross the left-hand rail. At the same time, he would need to check over his shoulder. Mr Jones observed that when some cyclists did this, the front of the bike would drift in the direction in which they were looking.

[96] In relation to Ms Fairley's accident, by reason of the limited space, it was impossible in his view for Ms Fairley to achieve an angle of 45°. A short segment of the Council advice video was played to him. In his view, this was not achievable and the manoeuvre shown in the advice video was unrealistic. Ms Fairley had very limited space to initiate her turn and in no way could accomplish the "instantaneous" turn as depicted in the Council's advice video. As noted above, there was a degree of uncertainty as to where precisely Ms Fairley was when she fell. In Mr Jones' view this was insignificant. Both locations, separated by only a few metres, presented essentially the same road and tram track layout and risk. In both cases the cause of her fall was the need to cross the tram tracks at a shallow angle, coupled with the need to assume the secondary riding position (ie to the left in the lane of traffic, the primary position being in the centre of the lane) to avoid traffic at her right.

[97] He noted that the only sign at Haymarket Station was the "keep right" sign at the entry of the taxi area. Any road user who went to the left of the bollard would therefore be committing a traffic offence.

[98] In Mr Jones' view, the Council's efforts in 2009 in the form of the Council advice video, the training sessions and the Council leaflet were inadequate and comprised of generic statements about crossing at an angle. While there was a suggestion that a cyclist should slow down in order to negotiate a hazard such as a tram track, he observed that this can introduce greater conflict between cyclists and vehicles because this increases the speed differential between these two classes of road users.

Cross examination of Mr Jones

[99] It is fair to say that in cross examination Mr Jones immediately became combative. In response to the very first question, asking if he was a cyclist, he countered with the question "why do you ask?". He then quibbled with the use of the word "cyclist" in a question, notwithstanding that he had used this language himself in his evidence in chief. In respect of questions about his experience, he accepted that he had no qualifications in road traffic act reconstruction and analysis and that he had not included the usual declaration of an expert in his reports. He confirmed he had not given evidence previously in personal injury cases. He had given evidence as an expert in other cases, generally involving transport planning and highway engineering matters.

[100] When challenged as to whether he was able to give expert evidence about the dynamics of a bike, he maintained that he could. He knew how a bike worked; he understood about dynamics and how forces operated; and he had an engineering degree. The issues in this case were not complex so he considered himself able to give an expert opinion.

[101] A long chapter of evidence was then pursued with him under reference to the general design documentation, the defenders' design materials and exploring the evolution

of the design, design choices and the review process in the form of the RSAs. There was a degree of sparring between senior counsel for the defenders and Mr Jones about the status of different recommendations of what is a safe angle (eg 45°, 60° and 90°). He maintained his position that an angle of 45° was the absolute minimum safe angle at which cyclists could safely cross tram tracks.

[102] In relation to the Council leaflet, in his view this was a waste of effort. At most it was of limited and temporary effect. As for the videos posted on YouTube, in his view in none of these were the cyclists cycling at 5 mph. That speed was slower than walking speed and at such slow a speed it was difficult to maintain forward motion without wobbling. From this he doubted that Mr Lowdean was going as slowly as he suggested.

[103] In relation to Ms Fairley's description of her accident, Mr Jones maintained that it did not matter where precisely it had happened. At either location Ms Fairley described, the mechanism and therefore causation for her accident was the same. Any discrepancy in her evidence about the precise spot was of no significance. He accepted the general proposition that cyclists owed duties to other road users. He resisted accepting other general propositions put to him, eg the need to slow down or to signal, contending that it was not always necessary to slow down and that signalling depended on what one wanted to do. He accepted that a cyclist needed to keep an eye out for an obvious hazard but his response was that a cyclist must be able to do something about it.

[104] A long passage of cross examination followed, the purpose of which was to challenge his statement that it was "impossible" to achieve an exit from the tram tracks at a safe (ie 45°) angle. He accepted that he was incorrect to state, as he had done in one of his reports, that the wheelbase length (ie its point of contact with the road) of a bike was 1.8 m, as this was its overall length. (He first cavilled, answering variously that tandem bikes are longer, that

children's bikes are shorter and it depended on the wheel size.) Notwithstanding a number of questions pressing him on his evidence that it was "geometrically impossible" to achieve a safe angle when cycling out from between tram tracks, including an adjournment for him to produce a trigonometric calculation and his subsequently taking senior counsel and the court through his detailed workings, this position was unchanged. His calculation had two variables: (i) the distance Mr Lowdean was from the left-hand rail at the point he initiated his turn (ie the radius), and (ii) the turning circle assumed (a smaller turning circle dictated a tighter curve but required a slower speed).

[105] It was put to him, as part of this chapter, that it would be "easier" to cross at 45° if a cyclist first moved to the far-side tram track before turning at a wider angle across the opposite track. In his view, it was not "easier"; it might be "geometrically more possible" but Mr Lowdean did not say he had done this. In any event, it would have been good practice for a cyclist first to check over his shoulder and this would have increased the probability of impinging on the other track. He explained that a cyclist between the tram tracks was bounded by two hazards not one. In seeking to minimise the risk of crossing the left-hand track, by moving towards the right-hand one, a cyclist could increase the risk of falling into that right-hand track.

[106] Specific figures were put to him as the possible radii, that is Mr Lowdean's possible distances from the left-hand track at the point from which he initiated his left turn. If he was in the middle of the 1.435 m width between the tracks, his radius would be around 0.75 m; if he moved to the right, he might be able to achieve a 0.9 metre radius. Furthermore, in Mr Jones' view, it was not just a question of the angle. The turning circle at which a cyclist turned could be significant; by reducing the turning circle one increased the sideways force on the tyre and thereby increased the risk of its slipping. Speed could also play a part.

While a slower moving cyclist could achieve a smaller turning circle (being the second significant variable in Mr Jones' calculation of the angles), sideways deviation from the line of travel increased as speed slowed. A slower bike was also less stable. Even assuming a more favourable radius of 0.9 m, as posited by the defenders, his calculation resulted in an angle of 39.2° at which the front wheel could cross the left-hand tram track. He also explained that as the front wheel was turned back toward the direction of travel (upon completing a turn), it was generally the case that the rear wheel circumscribed a shallower arc and angle.

Mr Franklin

[107] Mr Franklin was proffered as an expert in cycling. While he has no formal qualifications relevant to that area of expertise, he is the author of a guide to skilled cycling technique ("*Cyclecraft*"), which has been endorsed by the UK Department for Transport. He was a member of the UK Government/CTC Reference Group that developed the National Cycle Training Standard and accreditation scheme launched in 2003. He has acted as an expert witness on cycling since the early 1990s. He was now retired, other than for the purposes of acting occasionally as an expert.

[108] He produced a 60-page generic report for these actions. Having regard to the relevant issues in these actions, it suffices to note the following matters from this report:

- (1) He noted the tram risks to cyclists and the recommendation of crossing tram tracks ideally at 90° or, at least at a 45° angle or higher.
- (2) In relation to the number of cycling accidents associated with the Tram, he recorded and analysed figures obtained under Freedom of Information ("FoI") requests from the Council and from Edinburgh Police. He summarised the FoI

data in Appendix C (pages 33 to 47). From this, he identified 198 accidents in Princes Street reported between 2009 and 2014. (I note that 98 of these occurred prior to Mr Lowdean's accident). Circumstances common to these accidents included moving sideways in response to traffic or road conditions, moving from within the tram tracks, misjudging the angle of crossing and crossing at a shallow angle. He noted that even where cyclists were aware of the presence of tram tracks, they often misjudged the angle of crossing.

- (3) In relation to "geometry" and what was possible (*per* the defenders) or impossible (*per* the pursuers), he noted that the distance between the tram tracks is 1.435 metres; that bicycles are typically around 1.8 m long and, accordingly, it was "not possible for a cyclist to turn to cross either rail at 90°". It was necessary to turn "very tightly", particularly if starting from near the centre of the rails rather than near to one side, to achieve the greatest possible angle. In order to accomplish this manoeuvre, a cyclist required to turn slowly, that is "much more slowly" than a cyclist's normal riding speed or the speed at which following traffic was likely to be moving. He estimated a cyclist would need to slow to around 4 mph in order to turn within and cross a tram track safely.
- (4) In relation to a cyclist cycling between tram tracks, a cyclist required to exit from between them at some point. A manoeuvre involving slowing to turn sharply over a tram track was "not a normal experience when cycling". At a later point in his report (at paragraph 5.9.3) he noted that, in relation to a cyclist on Princes Street at its junction with South Charlotte Street, it was necessary for the cyclist to cross over the nearside or left-hand tram track in order to cycle

between them and then, later, required to cross back over it: "Both of these manoeuvres are extremely hazardous, requiring the cyclist to slow to a very low speed in order to turn across the rail at a sufficiently large angle". A cyclist who wished to ride in the right-hand lane (to avoid buses in the left-hand lane), and who wished to avoid cycling between the tram tracks, had less than 1 m of space in which to cycle.

- (5) In relation to the road layout at Haymarket, he described this as "very unsafe" for cyclists riding West (see para 6.3.3). This was because the traffic lanes "veer right across the tram tracks and a cyclist following the carriageway markings would cross the rails at only around 30 degrees, a very unsafe manoeuvre".
- (6) In relation to signs warning cyclists of the presence of tram tracks (eg a sign that read "Caution Tram Tracks", he regarded the "practical value of these signs" as "minimal. These did not tell cyclists the specific nature of the hazard to look for, where the hazard was or provide any advice as to how to minimise the risk. In his view, most people have not had the experience of cycling near tram tracks and the tram risks posed were "by no means obvious" (para 7.1.3).
- (7) He was critical of the "lack of foresight" about the risks to cyclists in crossing the tram tracks at shallow angles. In his opinion, the situation at South Charlotte Street/Lothian Road should "never have passed preliminary safety auditing, as cyclists were given neither assistance nor protection in dealing with the "multiple hazards of heavy traffic, only rails and a ridiculously narrow shared tram/bus/taxi/cycle lane". In respect of the bike symbol as part of the road markings in that same area, in his view this "led cyclists straight into rail grooves or other hazardous situations" and which was "inexcusable". He had "no

doubt” that “not only were most of the circumstances that have led to accidents predictable, but that they were predicted in Government advice and the reports of two independent consultants” [contained within the defenders’ design materials].

Report specific to the Fairley action

[109] Mr Franklin’s report summarised the circumstances of Ms Fairley’s accident (as derived from witness statements) and analysed photos of the locus. In short, these disclosed that a cyclist following the path of the carriageway would cross the tram tracks at a shallow angle (which he estimated at 30 degrees) and, further, a “substantial deviation” was “necessary” in order to cross the tram tracks at the minimum 45° angle. He estimated the distance between the kerb to the left (eg formed by the traffic island between the entry and egress to the taxi area) and the left-hand tram track (to Ms Fairley’s right) was about 0.85 m. This was only about half the minimum recommended width of 1.5 metres for a cycle lane.

[110] From all of this he concluded that it was “not physically possible to turn a bicycle from within this narrow kerbside line in order to cross the nearest rail at the minimum 45° angle at which it can be considered safe for a cyclist to cross a rail” (para 4.5). He concluded that the “high risk of an accident at this location was foreseeable” (para 4.7) and that this was confirmed by the number of accidents following Ms Fairley’s accident. (At para 5.3 of this report, he noted 25 accidents between 12 October 2013, when this part of the Tram at Haymarket opened, and the end of December 2013.) In his opinion, “it would have been very difficult for any cyclist to avoid the hazard of the tram tracks in the prevailing traffic” (para 7.3). He attributed Ms Fairley’s accident to the design of the tram and road infrastructure (para 7.2) which, in this location, required cyclists to cross the tram tracks at

shallow angles (ie less than 45°). If a cyclist followed the normal course of the road at this location “the likelihood of an accident [was] highly foreseeable” (paragraph 7.7). Ms Fairley “could not expect to be able to handle safely the very significant dangers inherent in the layout of the tram tracks at the locus” (4.3).

Report specific to the Lowdean action

[111] As noted in Mr Franklin’s generic report, the bike symbol in the centre of the right-hand lane of Princes Street when approached from Lothian Road invited a cyclist to adopt a position in that lane between the tram tracks. Inevitably, a cyclist travelling east would require to cross back out from between the tram tracks in order to move into the left-hand lane just after the junction with Frederick Street.

[112] Furthermore, he did not believe that Mr Lowdean could be faulted for following the arrow marked on the road or the broken line markings indicating that he should move left. In relation to the arrow, this was typical of the angle at which any vehicle would normally change lanes. In his view, once the pursuer was between the two tram tracks and then followed the other road markings, Mr Lowdean became trapped in a situation where the probability of an accident was “high”.

Parole evidence

[113] Mr Franklin adopted the terms of his generic report and his two reports specific to the pursuers’ accidents. He had been an engineer by training. Nothing either of the pursuers said had altered his views.

[114] His comment on the two locations of the pursuers’ accidents was that there was not safe riding in those areas given the infrastructure. One could not expect people to make

wise judgements at all times, when they mostly wanted to get from A to B; nor could they be expected to apply science. The pursuers were the victims of infrastructure not allowing for people like themselves.

[115] His impression was that the number of accidents to cyclists in Edinburgh arising from the Tram was comparatively higher (“enormously in excess of”) those experienced in other towns in the UK which had introduced trams.

[116] In relation to the situation in which Mr Lowdean found himself, he could not be faulted for adopting a primary position (ie one in the middle of the lane) in the right-hand lane of Princes Street. The problem arose when Mr Lowdean had to exit from between the tram tracks. Those risks were foreseeable and considerable, particularly if he were not acrobatic enough to jump the bike over. It was really hazardous to have to leave the area between the tram tracks.

[117] In relation to Ms Fairley, the unacceptable feature of that location was her need to turn right (ie following the direction of travel) from the far left edge of the carriageway and to cross the tram track at a very shallow angle. She also needed to look behind her. She had to move gradually into the right-hand lane so as not to intrude on any traffic in that lane too quickly. It was all very tricky and there was a high chance she would come down on her own. This was because it was impossible to cross the tram track at a very shallow angle, which at this point was about 19°. The the only manner in which Mr Franklin’s views differed from those of Mr Jones, whose evidence he had heard, was about travelling between buses. He otherwise agreed with Mr Jones’ evidence, including his calculations.

The defenders’ proof

Andrew Renwick

Examination in chief

[118] Andrew Renwick is a civil engineer working for the Council. (While in common with several other witnesses he had provided a witness statement, he was not asked to adopt this.) He worked for the road safety team of the Council for 20 years before being transferred to the tram project in July 2009. He has been a senior transport officer since 2016. His role as part of the tram project team from 2009 was to look after technical approvals. By this stage the design details had been completed. He was not involved in the development of the design for the integration of cyclists as part of that process.

[119] He did not accept that the number of accidents involving cyclists and the Tram was greater than in other cities. He stressed that the defenders were keen to encourage reporting of any kind of accident or incident, in part this was because it was well known that cycling accidents are underreported. He explained the use of a "Stat 19", which was a standard form for reporting accidents to the police. It was, in his view, difficult to compare "like with like" because it was not known how other cities which introduced trams had collected accident data.

[120] Under reference to the STV news article in June 2012 (recording the Council at that time advising cyclists not to cycle between the tram tracks), he was asked about the Council's policy in relation to cyclists cycling between the tram tracks. He explained that a bike symbol painted between the tram tracks simply indicated to road users that the road ahead was restricted to certain specified forms of transport, of which cycles were one. The use of the bike symbol painted between the tram tracks did not indicate that this was a cycle lane. He was not aware that it was the Council's position at that time to advise cyclists not to cycle between the tram tracks. He also accepted that there was nothing to prohibit cyclists from adopting that position. He was unwilling readily to consider whether the

Council's advice (as reported in the STV article) was appropriate. In his view, it depended on the confidence of the cyclist. Some cyclists will cycle in the left lane; others who wish to ride faster and to dominate a lane will prefer to ride between the tram tracks. It was good advice to advise cyclists to cross tram tracks as close as possible to 90°. In relation to the "keep out of the way" advice, he was not sure if this was good advice for those cycling in the city centre.

[121] Mr Renwick explained that there had been consultation by the Council (or TIE) with cycling interests groups during the design process. There had been a training day organised in 2009 with a local cycling group, Spokes, held at the "Bike Station" in Causewayside. However, Mr Renwick was not involved in this training; he had had some discussions with cycling groups in the summer of 2009.

[122] He was asked to comment on the "geometric impossibility" of crossing out of the tram tracks at a safe angle. He confirmed he had done it himself. One needed to proceed at an appropriate speed; to move slightly to the right, before turning to the left over the rails. This was as shown in the Council's advice video. (This was not played to him.)

Cross-examination

[123] In 2011 and 2012, he confirmed that his role included collecting data on cyclists and having regular meetings with cycling interest groups. This included the meeting with them and putting up temporary signs.

[124] While he confirmed that he was aware of the RSAs and their purpose, he had only ever attended one meeting standing in for a colleague. However, he confirmed that the council would be aware of what was discussed at such meetings.

[125] He readily confirmed he was not an expert in cycling, just an individual who had cycled.

[126] In relation to the number of cycling accidents, he was not familiar with the figures put to him (ie some of the figures spoken to by Mr White). He maintained his position that one could not compare accident figures between different cities unless the data was assembled in the same way.

[127] He agreed that when Haymarket first opened there were lots of reports of people falling on the tram tracks and he was asked to look to see what could be done about this. In November 2013, this included adding lines to the road at suggested points to cross the tram tracks.

[128] He did not agree with the observation in the passage from the RSA concerning Haymarket (see para [13(4)], above), describing the consequence of the desire line bringing cyclists to cross the tram tracks at too shallow an angle. In his view, cyclists could choose which way to cross. He accepted that prior to changes in November 2013 (and later changes) the only markings were the dotted white lines indicating the end of the carriageway as it curved to the right just beyond the taxi area. When asked what a cyclist should do when faced with the layout outside Haymarket Station, he simply responded what he, personally, would do. This was to cross over the first set of tram tracks as soon as he could to avoid taxis backing up as they queued to enter the taxi area. Even if taxis had not backed up, he would follow the gap between the kerb and the left-hand track of the westbound tram track. He would not turn into the taxi area. He understood this was an alternative that a cyclist could use and which appeared to reflect the designers' intention. He was not sure if this involved a cyclist in an illegal move, because of moving left to the

“keep right” bollard at the entry point of the taxi area. He ultimately agreed this should not be done if it were illegal.

[129] After viewing several of the YouTube videos of cyclists at Haymarket Station, he accepted that road users would naturally follow the edge of the carriageway even though he himself would not do so at this point. He did not ultimately criticise a cyclist who followed the path adopted by Ms Fairley, accepting that a cyclist needed to check behind and that there were no road markings before the taxi area directing a cyclist into that area. Cyclists would “have to work it out for themselves”. He also accepted that Haymarket could be busy, with a lot of traffic and that slowing down affected a cyclist’s stability. He accepted that the YouTube videos showed a lot of people who did cross the tram tracks at this point at a shallow angle. He disagreed with the suggestion that this was “difficult”, as there were spaces where the cyclists could cross at an appropriate angle. His ultimate answer was that all of this had gone through a design process, including safety audits by independent consultants.

[130] He accepted that “in hindsight” the Council needed to give guidance to cyclists in this area; that there were some cyclists who could not cope with that layout and that additional markings were needed to give guidance. He was defensive, maintaining that he was not part of the design team that signed this off and he could only answer by pointing to the process that it went through. The design team approved it, as did the Council.

[131] In relation to the Council guidance as recorded in the June 2012 STV article, in his view some cyclists adopt a position between the tram tracks. He was not sure as to the basis for the Council’s advice. Under reference to a photograph of this part of Princes Street, with the multiple markings (including the bike symbol) painted on the roadway, Mr Renwick was asked whether it was clear what a cyclist should do. He acknowledged that he

“struggled to answer” and that each cyclist would make a choice. Essentially, he accepted that each cyclist must “work it out for themselves”. He ultimately accepted that by reason of the bike symbol many cyclists would cycle between the tram tracks.

[132] Mr Renwick was cross-examined on his evidence about the achievability of turning from within the tram track and achieving an appropriate angle (ie 45° or higher). He maintained that it was necessary to slow down but he could not answer how this was achieved if a cyclist was amidst traffic. In any event, he was simply speaking from personal experience. In relation to the directional arrow further along Princes Street, this required all road users, including cyclist, to move into the left-hand lane because of the tram stop ahead.

Re-examination

[133] Mr Renwick confirmed that it was not unusual to make changes after a transport project such as the Tram was completed. This included mitigation measures as discussed in relation to Haymarket. He had not been aware that the Council’s advice in June 2012 to cyclists (*per* the STV article) was not to ride between the tram tracks. It surprised him.

The defenders’ skilled witnesses

Mr Dixon

Examination in chief

[134] Mr Dixon is the principal of an independent consultancy he established in 2014 providing expert advice in the field of highway engineering, incident investigation and risk management. Prior to that he had worked for 20 years for a major multi-national transport and engineering consultancy (including as an Associate Director responsible for infrastructure projects in the North-West of England) and, for about nine years preceding

the formation of his consultancy he worked with the Transport Research Institute. He is a Fellow of the Institution of Civil Engineers and of the Chartered Institution of Highways and Transportation. He is also a Chartered Civil Engineer and a Member of the Institute of Traffic Accident Investigators.

[135] Mr Dixon provided two lengthy reports (c 50-55 pages each, excluding appendices), one for each of the two actions, which he adopted as part of his evidence in chief. (A corrected report was supplied on the fourth day of the proof, as No 7/3A of process in the Fairley action. I shall refer to this version.) His reports contain plans and a number of photographs which showed most clearly the road markings (albeit many of these dated from 2014). I need not rehearse any of this evidence as I have described the two locations in sufficient detail above (Haymarket at paras [14] to [21] and Princes Street at paras [22] to [24]). Nor need I rehearse his listing of the consultations the Council undertook with cycling groups (between 2004 and 2012) or the other public consultations, nor the Council advice leaflet. None of this was put to either of the pursuers in this case or to any of the pursuers' other witnesses. In any event, both pursuers were relatively new to Edinburgh.

[136] While he quoted the passage from the RSA relative to Haymarket, he had little to say about this other than that the "keep right" sign on the bollard at the entry of the taxi area "may have caused confusion" to cyclists. He also dealt with road signs and markings for each of the locations in later sections of his two reports. None of this was controversial. Having regard to how the proof was conducted, any issue of causation did not turn on the presence or absence of warning signs. He produced photographs of warning signs only for the approach to Haymarket (in section 7 of *both* reports). Elsewhere in his report specific to Mr Lowdean, he included photographs of two "Caution Tram Tracks" signs on Princes

Street (though these were not referred to in Mr Lowdean's evidence, nor put to him in cross).

[137] Mr Dixon addressed the "foreseeability of tram rail hazard" in section 6 of each report. After excluding any construction defects, he acknowledged that any on-street section of the tram route had the "potential for leading an unwary or inattentive cyclist into difficulty" (para 6.3). In his view, however, this would be "evident to any alert cyclist" as would the "potential hazard" the tram tracks presented. Confident cyclists would therefore proceed "with due care when in the vicinity" of the tram track (para 6.4). He further observed that if crossing the tracks could not be avoided, a prudent cyclist would cycle at a "sufficiently slow speed" to enable him (i) to stop quickly if the need arose and (ii) to turn at "an appropriate angle" to avoid the tram track hazards (*ibid*). After these generic comments, he added observations about the constraints imposed by the legislation for the Tram, by a consideration of the conflicting needs of other road users and the Council's policies for integration between various modes of transport. He concluded from this that "compromise was necessary" and that "generally speaking, [the Council] achieved an appropriate balance for" the Tram (para 6.7 of the Lowdean report and para 6.8 of the Fairley report).

[138] His conclusions in relation to Mr Lowdean's accident were that Mr Lowdean was incorrect, if he were to suggest that the bike symbol "required" him to take up a position between the tram tracks rather than a position in the left-hand lane or on the left side (ie outside of the tram tracks) in the right-hand lane. He was not critical of Mr Lowdean for adopting a position between the tram tracks. He rejected the proposition that the directional arrow at a later point "required/encouraged/ guided" cyclists such as Mr Lowdean to cross the tram tracks at an acute angle. The remainder of his conclusions rehearse the history of

the evolution of the design of the Tram, the constraints involved and the consultation exercises undertaken.

[139] His conclusions in relation to Ms Fairley's accident are similarly generic. While he refers to the alternative route into the taxi area, or the availability of space if a cyclist looped left into the egress from the taxi area, this is not part of the defenders' case on record. He did accept that the bollard with the "keep right" sign at the entry to the taxi area had the "potential for causing confusion". He did not suggest that a cyclist following the desire line and direction of the road could achieve an appropriate angle (ie to cross the tram tracks just beyond the egress from the taxi area) while remaining in his or her lane.

[140] A considerable amount of his parole evidence in examination in chief repeated chapters in his reports, which I do not repeat here.

[141] He was also asked about Mr Jones' evidence, based on LTN 2/08, about the turning radius of 4 m. However, he later confirmed that this was simply a general design figure for normal cycling and was not related to tram tracks, much less did it inform the live issue in Mr Lowdean's case, as to the feasibility of a safe exit from between tram tracks in real traffic. (Mr Franklin was not asked any questions specific to the location of Ms Fairly's accident in Haymarket.) The questions posed in respect of Mr Lowdean's accident were principally confined to the question of a 4 m turning circle.

Cross-examination

[142] In cross-examination, he accepted that tram tracks present an additional and substantial hazard to cyclists; that a cyclist travelling slowly in traffic was more likely to come into conflict with other road users and that the presence of tram tracks increased the

risk of an accident. He qualified the latter by observing that it all came down to human behaviour.

[143] When asked about the bike symbol in the right-hand lane of Princes Street, he “understood” that cyclists might interpret this as a dedicated cycle lane but he did not accept this. A cycle lane had different markings, unique to it. When it was put to him that many cyclists might misinterpret this part of Princes Street, he suggested they should look at cycling guidance to understand how to behave. He did not “necessarily agree” with the Council’s advice, at least as it appeared to be in June 2012, that cyclists should not cycle between the tram tracks. In his view, if a cyclist crossed the tram tracks at less than a 45° angle, then they “got away with it”. They might have assessed the risk but it had not materialised. He accepted that it would be “quite difficult” to achieve a crossing of a tram track at a 90° or right angle from the direction of travel. One would “need to be stationary”. He also accepted that achieving an angle of 60° required a sharp turn impinging into the adjacent traffic lane.

[144] In respect of the directional arrow marked on the roadway just before Mr Lowdean’s accident, in Mr Dixon’s view this clearly had to be followed but he wouldn’t expect traffic necessary to follow the exact trajectory of the arrow. In response to the question that an inexperienced cyclist might follow this, his retort was that such cyclists should not be in the city centre.

Mr Blackwood

[145] Stuart Blackwood was, at the time he prepared his reports, the principal consultant in the Investigations Group of Transport Research Laboratory, which specialised in road accident reconstruction and consultancy advice. Prior to this work, Mr Blackwood had been

a police officer for 20 years. His last 10 years as a police officer were spent in collision investigations. He has a Master of Science degree in Forensic Collision Investigation. He also holds a licentiateship from City and Guilds of the London Institute in Traffic Accident Investigation. He also has some Scottish qualifications relating to collision investigations and other qualifications not relevant to the issues at this proof. He is a trained National Cycle instructor, a qualification he obtained in 2012. He also regularly cycles in Edinburgh.

Reports

[146] Mr Blackwood prepared one report for the Lowdean action and two reports for the Fairley action (only the second report in the Fairley case was relied on at the proof).

Mr Blackwood had sat in during the pursuers' evidence. Their evidence did not lead him to change anything in his reports.

[147] Mr Blackwood's report in each action followed the same format: he described the location (section 2), he discussed the general duties of a cyclist and the Highway Code (in sections 3 and 4); he looked at the interaction of cyclists and tram systems in the UK and construction implications (sections 5 and 6); he analysed the pursuer's accident (in section 7) and stated his conclusions (in section 8). Most of the discussion in his reports was generic (eg sections 3 to 5) or otherwise canvassed uncontroversial material (eg descriptions of the layout etc of the accidents or elements of the defenders' design materials, sections 2 and 6, respectively).

[148] In relation to Ms Fairley, Mr Blackwood's essential criticism is that she failed to follow the marked cycle path into the taxi area (para 7.11 (which Mr Blackwood later stated she "ignored": para 7.7.20)). Had she followed the cycle path into the taxi area, she would have approached the tram tracks at a "suitable" angle to cross them (para 7.15). The

directional arrow painted on the roadway was not indicative of a path of travel for cyclists (para 7.18). There was, in his opinion, “sufficient road space for a careful and competent cyclist to manoeuvre in such manner as to cross the tram tracks at a safe angle” (para 7.21), although it became apparent in his parole evidence that this assumed the use of the taxi area (or its egress) to do so. His conclusions (in section 8) reflect his reliance on a cyclist utilizing some part of the taxi area. He concluded that Ms Fairley “elected to travel” in the secondary position on the road (rather than use the taxi area) (*per* para 8.2(e) and(f)), which caused her to cross at a shallow angle (para 8.2(h)).

[149] Mr Blackwood also queried Ms Fairley’s statement that she had followed the “keep right” sign on the traffic bollard as he has “seen no evidence or images” (*per* para 7.26) to indicate that this sign was in place. He concluded that the tracks were “clearly visible” and that a competent cyclist should be aware of the danger posed by crossing at a shallow angle (para 7.27). He cited (at para 7.28) a passage from Mr Franklin’s *Cyclecraft* to vouch this proposition.

[150] In relation to Mr Lowdean’s accident, Mr Blackwood opined that cyclists travelling east on Princes Street should move to the left-hand lane after South Charlotte Street (para 7.6). He also stated that, even if Mr Lowdean chose to ride between the tram tracks he could nonetheless “have safely negotiated the nearside [ie left-hand] track at a suitable angle” after the South Charlotte Street junction (para 7.12). Figure 25 is a photograph of Princes Street looking east, with a green arrow indicating the point where Mr Blackwood said Mr Lowdean should have moved into the left-hand lane. Again, as in the report for Ms Fairley’s accident, Mr Blackwood observed (i) that tram tracks were an obvious hazard (para 7.25) and (ii) that the directional arrow on the roadway was not indicating the line of travel cyclists should take across the tram tracks (para 7. 18). In his view, Mr Lowdean

“elected” to ride in the right-hand lane (para 7.22), which was contrary to guidance (para 7.28). I should note that there is no consideration in the report of the bike symbol painted in between the tram tracks at an earlier point.

[151] He concluded that Mr Lowdean “elected” to use the right-hand lane (para 8.2(d)); that this was contrary to cycling advice on road positioning (para 8.2(e)) and that Mr Lowdean failed to give due regard to the hazard presented by crossing tram tracks at a shallow angle (para 8.2(k)). In doing so, Mr Lowdean’s actions were contrary to all advice (para 8.4) and, ultimately, Mr Lowdean “elected to cross” the tram tracks at an angle of less than 45 degrees (at para 8.6). Mr Blackwood also opined that the warning signs in place were not a legal requirement (para 8.2(l)) and that “the contractors had considered the needs of cyclists along with the practical considerations of the tram project and made informed decisions based on the situation with which they were faced.”

Examination in chief

[152] He accepted there was no difference amongst the experts in respect of the signage or road markings. He expressed the same view as Mr Dixon that tram tracks posed an obvious hazard.

[153] In relation to angles at which one should cross tram tracks, he confirmed (as stated in his report and in common with the other experts) that the ideal angle was 90°. In his report he had produced by way of illustration a photograph of road markings in Croydon which directed the cyclist across tram tracks at the desired angle. However, in his view it was not feasible to put road markings at every single point a cyclist would normally be expected to cross the tram tracks (para 5.19 to 5.20).

[154] In relation to Haymarket he confirmed that there were now different road markings which included directing a cyclist into the taxi area to take advantage of a “jug” which operated as a chicane, directing cyclists across the tram tracks (at the egress of the taxi area) at a much greater angle than if one remained in the traffic lane and followed the direction of the road.

[155] He maintained his position (recorded at para 7.21 to 7.22 in his report) that there was sufficient road space between the kerb to her left and the tram track to her right to enable Ms Fairley to manoeuvre left and then right in order to cross the tram track at an appropriate angle. As augmented at proof, the extent to which there was a criticism of Ms Fairley, this appeared to be that she did not avail herself of the available space (now marked by the “jug” design) at the egress from the taxi area in order to increase the angle at which she crossed the tram track. (However, this view was critically dependent on Ms Fairley turning left into the egress from the taxi area.) In other words, she would have had to follow the markings and layout subsequently provided but which were absent at the time of her accident. In relation to the layout and markings *in situ* at the time of Ms Fairley’s accident in October 2013, Mr Blackwood accepted that a cyclist would need to “adapt that for themselves”.

[156] In relation to Mr Lowdean’s case, the extent of Mr Blackwood’s location-specific comment was that the arrow marked in the right-hand lane on Princes Street was no more than a directional arrow indicating a change of lane ahead, it was not a “designated route” for a cyclist to follow. It was simply a “prescribed route” marking. A number of objections by Mr Di Rollo prompted Mr Love to confirm that the defenders were not advancing any case of contributory negligence on the basis either (i) that Mr Lowdean should not have adopted a position between the tram tracks or (ii) that he should have moved into the left-hand lane at some earlier point. Mr Blackwood accepted that it was open to a cyclist

following the direction of travel adopted by Mr Lowdean to position himself between the tram tracks in the right-hand lane.

[157] The formulation used in the pursuers' pleadings, that the layout or road markings "guided" or "encouraged" the pursuer to adopt the course he or she did, was put to Mr Blackwood. His first response was that at the point of Mr Lowdean's accident there were no road markings "guiding" him. He assented to the proposition that there was nothing "requiring" cyclists to cross the tram tracks at an acute angle. Mr Blackwood accepted that "obviously" cyclists had to move from between the tram tracks due to the approaching deviation for all traffic to move to the left-hand lane but, in his view, there were "no instruction or indication of direction for him to follow". He was asked if the layout and markings created a "trap" for Mr Lowdean. Mr Blackwood replied that it was "entirely possible" to exit to the left, albeit one needed to reduce speed and exit from the tram tracks at a low speed. He explained that if one were to use the available space and wished to achieve a minimum 45° angle, the cyclist needed to slow down sufficiently. Speed was relevant. Mr Jones' evidence was put to him, to the effect it was difficult to achieve a 45° angle turning from within the tram tracks. Mr Blackwood had carried out practical testing, using different speed and angles; he had also considered this using the available coefficient of friction. In his view it was "feasible" to manoeuvre over the left tram track at a speed of between 5 and 8 mph and to do so at an angle of 45° or greater.

Cross-examination

[158] Mr Di Rollo began by putting to Mr Blackwood that one of the quotations in his report purporting to come from *Cyclecraft* was not, in fact, contained in that work. Mr Blackwood accepted this. In any event, the passage quoted was in relation to cyclists

dismounting at level crossings. Mr Blackwood accepted this, explaining that this was part of the “generic” part of his report, and that he was not accepting that the pursuers should have dismounted. He qualified this, though, by suggesting that Mr Lowdean could have travelled straight ahead into the tram stop, and then dismounted at that point. When pressed, he maintained that this was possible but it was “not the most practical” step Mr Lowdean could have taken.

[159] In relation to the preferred or safe angle of crossing tram tracks, Mr Blackwood, explained that he would not be “concerned” about an angle of crossing at 45 degrees. He was resistant to specifying a safe angle, referring to other factors such as speed. He rejected the suggestion that banking had any part to play at a speed below 7 mph, though he accepted that there would be less contact between a cyclist’s wheel on a curve. He accepted that Ms Ireland and Ms Daniels appeared to cross at too shallow an angle. He acknowledged that the recommendations in the general design documentation varied between 45 and 60 degrees.

[160] He accepted propositions put to him from LTN 2/08, to the effect that cyclists were more stable at higher speeds; that deviation (from the forward line) increased as speed decreased; and that generally one had to allow for a deviation of .2 m for cyclists. He resisted accepting a minimum turning circle (of 4 m), on the basis that these were “design specifications”.

[161] In relation to Ms Fairley, he maintained the criticism of her in his report: she should have used the taxi area; it was “more reasonable” for her to do so. In his view, a cyclist was more likely to follow road markings than signs (such as the “keep right” bollard). It was put to him that, taking the line Ms Fairley did, she was bound to cross the tram tracks at a shallow angle. Mr Blackwood would give no direct answer, maintaining that there was

“sufficient road space” for her to achieve an angle of crossing of 45 degrees or greater. He accepted that his report had not mentioned the “keep right” sign. He did not know it was there at the time he prepared his report. While it was visible in the Youtube videos, he had not seen these before he completed his report. He accepted he had seen these before he gave his evidence; he had not amended his report because he had not been asked to. He maintained that Ms Fairley should have ignored this. Any illegality in her so doing was just “technical”. He was pressed again on the fact that if Ms Fairley followed the traffic lane she was bound to cross at too shallow an angle and to slip. Mr Blackwood refused to accept this. He did acknowledge, however, that Ms Fairley was a competent cyclist. The figure of 191 representing prior accidents was put to him. He was not saying that all of these were incompetent cyclists; he had had colleagues who had slipped. It was more a question of misjudgement. He initially accepted the proposition that a manhole posed the same risk as a tram track, as both features required action by a cyclist. He accepted that a tram track in a roadway posed a more complex set of problems.

[162] In relation to Mr Lowdean’s accident, he refrained from a strong criticism of Mr Lowdean for adopting a position between the tram tracks (saying, it’s not where he would have gone), but he “personally” would have elected to cycle in the left-hand lane after the South Charlotte Street junction. When asked about the directional arrow (directing traffic in the right-hand lane to merge left) being in the middle of the tram tracks, he replied that it was too difficult to put markings at all points. He accepted that the green arrow in figure 5 of his Report was indicative, and not defining the angle of crossing. He remained critical that Mr Lowdean did not move into the left-hand lane in Princes Street. He acknowledged that Mr Franklin did not make the same criticism.

[163] Under reference to adverse comments made by Lord Banntyne in an earlier case in which he had appeared as an expert, he was challenged as showing a similar lack of balance here. In particular, his failure to consider the earlier symbol of the bike in the road as the reasonable explanation for Mr Lowdean choosing to ride between the tram tracks in the right-hand lane. He did not wholly accept that the earlier judicial criticisms were justified. His report did not lack balance by failing to mention the bike symbol or what the Council could have done. He was looking at what the cyclists had done. The bike symbol was 400 metres and three junctions before Mr Lowdean's accident. He ultimately accepted that the bike symbol was in the middle of the tram tracks at the start of Princes Street and that this was why Mr Lowdean moved into the right-hand lane.

Re-examination

[164] He clarified that the bike symbol in the right-hand lane at the start of Princes Street was just the generic road markings for classes of permitted traffic. There was nowhere else for those road markings to go. He did not wish to be "facetious", but he observed that a bus would not have been able to fit between the tram tracks.

Discussion

Introductory comments

[165] On the penultimate day of the proof I afforded parties a day to write submissions while I heard a debate in a commercial matter. I am grateful to Counsel for their written and oral submissions. I have taken full account of these. As their principal arguments were foreshadowed in their lines of examination and cross, and as the applicable law was not

disputed, I need not set out parties submissions. So far as necessary, I will refer to particular arguments in my discussion of the evidence.

Objections

[166] In relation to objections to lines of evidence, which were taken throughout the proof, only the following were maintained at the end of the proof. Mr Di Rollo's maintained his objections to two lines of questions in the defenders' case: the first was a line of evidence (from Mr Dixon) about there being no alternative to the arrangements in place at the west end of Princes Street and the second was a line to elicit evidence (from Mr Dixon and Mr Blackwood) that the pursuers should have adopted different positions on the road or taken an alternative path. In relation to the first, Mr Love had withdrawn the question (about "physical constraints" at South Charlotte Street). In my view, he was correct to do so for three reasons: the defenders have no record; the line was outwith the scope of the proof (on which see para [37], above) and he had not put this to any of the pursuers' experts. In relation to the second, Mr Love indicated both in proof and in submissions that the defenders did not criticise the pursuers on those issues. Mr Love maintained his objection to the evidence of Ms Ireland and Ms Sibbald essentially on the basis of no record. For the reasons provided below, I did not find their evidence to be of much utility. While it is correct that the pursuers' do not refer to either of these persons (or to Ms Daniels, whose statement was agreed and not objected to), in these cases the defenders had had the statements from these witnesses for some time and, it would seem, did not raise this at the pre-proof By Order. I note that the pursuers aver that there other similar accidents. In all of these circumstances, I repel the defenders' objections to the evidence of these two witnesses.

The law on the duty of a roads authority

[167] Parties referred to a number of cases to vouch certain legal propositions of the duties of a roads authority. The law was not in dispute. Of the cases cited by parties it suffices to note just two recent cases, both of which are authoritative and binding on me. The first is the authoritative discussion by Lord Drummond Young in *MacDonald v Aberdeenshire Council* 2014 SC 114. After a comprehensive review of the authorities, he summarised the state of Scots law. He stated (at paragraphs 63ff):

“A roads authority is liable in negligence at common law for any failure to deal with a hazard that exists on the road under its control. A ‘hazard’ for this purpose is something that would present a significant risk of an accident to a person proceeding along the road with due skill and care.”

After observations not relevant to the pursuers’ cases, he continued (at para 64), identifying two requirements “of great importance”:

“This means that, for a roads authority to be liable to a person who suffers injury because of the state of the road under their charge, two features must exist. First, the injury must be caused by a hazard, the sort of danger that would create a significant risk of injury to a careful road user. Secondly, the authority must be at fault in failing to deal with the hazard. This means that the pursuer must establish that a roads authority of ordinary competence using reasonable care would have identified the hazard and would have taken steps to correct it, whether by altering the road, or by placing suitable signs, or in an extreme case by closing the road....”

Lord Drummond Young observed that the roads authority had no duty to protect road users from obvious dangers (see end of para 64). He described the law as striking a “fair and reasonable balance” between the interests of road users and those of roads authorities.

[168] Of particular relevance to this case is the Lord Justice Clerk’s further consideration in *Bowes v Highland Council* 2018 SC 499 of the nature of a hazard. I note in particular Lady Dorrian’s observations, at paragraphs 48ff, that what constitutes a hazard will depend on many factors. As a consequence, in that case, the risk posed by a defective parapet of a bridge separating the carriageway from a drop to the sea did constitute “a significant risk of

an accident of a type and severity that would not otherwise have arisen to a careful road user”.

[169] Parties did not dispute that, as a generality, tram tracks posed risks (in the form of the tram risks, identified at paragraphs [11(2) and (3)], above) to cyclists. It was also not disputed that, as a generality, the defenders owed to road users the common law duties articulated by Lord Drummond Young. They joined issue on whether the risk posed by tram tracks was obvious. The defender maintained that any risk the tram tracks posed was obvious and, under reference to Lord Drummond Young’s observations in *MacDonald*, that no duty arose to cyclists in respect of obvious hazards (see end of the preceding para).

The Pursuers’ evidence

[170] Mr Love challenged Ms Fairley’s evidence as unreliable, on the basis of discrepancies between her statement and her parole evidence (eg whether it was her front or rear wheel which slipped first and whether this was as she crossed the first or second set of tram tracks). (There was no challenge to Mr Lowdean’s credibility or reliability.) In my view, those were insignificant differences in the context of the short, compelling and coherent description of the accident she sustained. Any discrepancy was explicable, given she was describing a brief event that occurred 5 ½ years earlier.

[171] I find both pursuers credible and reliable in the essentials of their evidence. Each presented as doing her or his best to assist the court and each gave their evidence in a straightforward manner, without exaggeration or reliance on hindsight. When uncertain, each acknowledged when this was so. They each described their movements leading up to the accident. Their evidence was persuasive and I accept their accounts of their accidents.

[172] In any event, any minor discrepancies in Ms Fairley's evidence does not affect the central issue of liability. The layout of the road, the tram tracks and the road user's general direction of travel were the same at this section of the tram tracks at Haymarket.

Accordingly, at either point where Ms Fairley crossed the tram tracks, she encountered the same risk of crossing the tram tracks at too shallow an angle. Further, the accident she described was entirely consistent with the tram risks identified, namely of a wheel slipping or becoming trapped in the tram tracks. Even if she had crossed the first track at an acceptable angle, the unchallenged evidence of one of the other witnesses was that as one turned a front wheel back toward the direction of travel, the rear wheel would cross at a shallower angle than the front. This accords with her evidence of trying to achieve an appropriate angle but trying to avoid traffic in the right-hand lane. What was consistent in Ms Fairley's account was that one of her wheels became trapped (or "corralled" as she described it) in the tram tracks. I reject Mr Love's contentions that her evidence was unreliable and that as a result of the discrepancies the cause of her accident was unknown.

[173] Furthermore, I find that each pursuer sustained an accident in the circumstances they each described. In relation to Ms Fairley, there is no criticism of her for not using the cycle lane which commenced at the entry to the taxi area or for not looping into the egress from the taxi area. In relation to Mr Lowdean, there was no criticism of his adopting a position in the right-hand lane between the tram tracks or for not using the left-hand lane (after the South Charlotte Street Junction) or the bike box at the traffic lights at Frederick Street. In my view, in the light of the evidence, these concessions by the defenders are well made.

[174] Apart from issues of contributory negligence, the short question is whether the combination of the road layout and the presence of the tram tracks at the location of each pursuer's accident constituted a hazard or posed significant risk of an accident, of which the

defenders were aware. In answering this, it is necessary to identify if there was a hazard posing a significant risk of an accident; if so, whether it was obvious; and what was reasonably foreseeable to or known by the defenders. As the parties led a considerable body of expert evidence to inform these issues, I next turn to consider that evidence.

The evidence of the skilled witnesses

Credibility and reliability

[175] There was no challenge to the credibility or reliability of Mr Franklin or Mr Dixon on the basis that they lacked the requisite qualities of an expert. The same may not be said for the evidence of Mr Jones or Mr Blackwood, the principal expert witnesses for the pursuers and defenders, respectively. In submissions, Mr Love observed that at times Mr Jones strayed into the role of an advocate rather than an expert. In cross-examination, and under reference to adverse comments made of Mr Blackwood in another judgment, Mr Di Rollo challenged Mr Blackwood's lack of balance or impartiality appropriate to an expert. There is some force in these criticisms.

[176] In relation to Mr Jones, in passages of his evidence he did appear to adopt the role of advocate on behalf of cyclists rather than as an expert in the adaptation of transport design to the needs of cyclists. This was reflected in the less than measured language used from time to time, in his inability to contemplate propositions put to him by Mr Love to test his evidence and his immediate antipathy to any cross examination. He was occasionally slapdash, as in the incorrect use of the figure of 1.8 metres (as the length of the wheelbase rather than the length of a bike), albeit in cross-examination he was permitted an adjournment to produce additional calculations on different information.

[177] In relation to Mr Blackwood, he appeared at certain points in his evidence and report to be careless or incomplete, at least in respect of matters that might be perceived to be damaging to the defenders' case. For example, he was sceptical about the presence of a "keep right" sign on the bollard at the entrance to the taxi area at Haymarket. He maintained this at proof. His initial explanation was that he had not seen information to the contrary when he prepared his report. That may be so, but when he was asked at the outset of his evidence if there was anything he needed to change in the light of the evidence, he did not at this point seek to alter his report. By that stage, he had seen this clearly from one or more of the YouTube videos and would have known from the photos in reports of some of the other experts that there was a "keep right" sign on the bollard at the entrance to the taxi area. He also omitted to deal with the bike symbol in the centre of the right-hand lane at the beginning of Princes Street. His explanation, that he was focusing on the locus of Mr Lowdean's accident, was unconvincing. This was particularly so, as he was quite fixed in his views about the inadvisability of Mr Lowdean cycling in between the tram tracks in the right-hand lane and his conclusion that Mr Lowdean "elected" to ride in that lane. Given the length and detail of his report (including his discussion of road markings) it is, at the very least, surprising that he did not take into account the reasonable explanation from Mr Lowdean (of the presence of the bike symbol) which was readily acknowledged by Mr Franklin, Mr Jones, Mr Renwick and Mr Dixon.

[178] These criticisms were not sufficient, however, to disregard their evidence in its entirety. I do approach the evidence of these two witnesses with a degree of caution.

What was the relevant risk?

[179] While parties' submissions focused on the general risk posed by tram tracks to cyclists, as identified in the general design documentation, in my view, it is necessary to consider that risk in the context of the particular situation, including the road layout and tram tracks, in which each pursuer found herself and himself. In considering whether collectively those features constituted a hazard which posed a significant risk of an accident, I also bear in mind Lady Dorrian's comment that what constitutes a hazard may depend on many things. I therefore turn to consider whether the features of the infrastructure at the locations of the pursuers' accidents constituted a hazard in this sense.

The Haymarket location: Ms Fairley's accident

[180] As noted above (at para [90(4)]), Mr Jones had concluded that the layout of the road at Haymarket "led to [Ms Fairley]... crossing the tram tracks outside Haymarket at a shallow angle". The angle of crossing, for a cyclist following the direction of the traffic lane, was 30 degrees. Mr Franklin explained (at [108(4)]) that a manoeuvre involving slowing to turn sharply over a tram track was not a normal experience when cycling. None of this evidence was challenged.

[181] Of the defenders' experts, Mr Blackwood was more stringent in his criticism of Ms Fairley (no parole evidence was elicited from Mr Dixon in respect of the Haymarket location or Ms Fairley's evidence). In Mr Blackwood's opinion, Ms Fairley "elected" to follow the line that she did. Such language implies that Ms Fairley had a "choice" between reasonable options. None of those included the line that she took. The only alternatives Mr Blackwood identified were either to use the cycle lane at the entry to the taxi area or to loop into the egress of the taxi area (a sort of unmarked chicane). In my view,

Mr Blackwood's evidence on this point falls to be rejected. It ignores other features (known to him) that make these alternatives untenable. The problem of taxis queueing back into the street was well known. The cycle lane was not obvious or signposted in advance. It also appeared only to lead into the taxi area. Furthermore, the fact that this option appeared to conflict with the "keep right" sign on the bollard at the start of the cycle lane meant that this option was, at best, "confusing" (*per* Mr Dixon). (Mr Renwick also conceded that the conflicting indicators at the entry to the taxi area were confusing; his evidence was that at this point a cyclist had to work it out for herself.) There is the added factor that Ms Fairley said she did not see the cycle lane. This was her first time cycling this route. As for the second option, no one apart from Mr Blackwood advocated the use of the egress from the taxi area to loop into before circling out to achieve a better angle. This was not marked on the roadway. Such a manoeuvre might also have brought Ms Fairley into conflict with any taxi exiting from the taxi area. Mr Blackwood's criticism of Ms Fairley is based on an unrealistic scenario confined to a bird's-eye view of theoretically available space and considered in isolation from any other factors. The most significant weakness in Mr Blackwood's approach was his failure to engage with the users' experience of the road layout (especially as it presented to a cyclist unfamiliar with it), and his failure to have regard to the realities of traffic and other conditions, or other factors such as cyclist confidence or skill.

[182] In light of these features, the defenders were in my view entirely correct not to rely on the potential availability of these two alternatives (ie the unpalatable choice between the using the cycle lane (and the confusing signage at its start) or trying to initiate an unmarked chicane (but with the potential of colliding head-on with taxis exiting the taxi area)). To the extent that there was evidence of any further option (ie of impinging into the right-hand

lane, as Ms Fairley endeavoured to do), no expert for the defender proposed this. The evidence of Mr Jones and Mr Franklin that this manoeuvre would potentially bring her into conflict with traffic in the right-hand lane (which is generally faster moving), particularly if she slowed to do so (which increased the speed differential between Ms Fairley and that traffic), was unchallenged. If she remained in the left-hand traffic lane (which was identified as the natural “desire line” for cyclists), she was bound to cross at an unacceptably shallow angle (of about 30 degrees) regardless of where precisely she crossed over the tram tracks. This, according to Mr Franklin, was “very unsafe” (see paragraphs [108(5)] and [110], above). The defenders and their experts did not challenge this; rather, the defenders’ case was that by alternative routes (eg the use of the cycle lane or the taxi egress) this could be avoided. At another passage, Mr Franklin observed that any cyclist who crossed over without mishap was “lucky”. Again, there was no challenge to this evidence.

[183] On the question of signage, in my view the presence of a slippery bike sign or a “Caution Tram Tracks” sign (at or near the Morrison Street traffic lights) affords no defence, for the simple fact that these did not warn of the particular risk the road layout posed, namely, of necessarily crossing tram tracks at an unsafe, shallow angle. As Mr Franklin pithily put it, for a warning to be effective a cyclist had to be warned of the particular hazard and must be able to do something about it.

[184] On the whole body of evidence (subject to whether the hazard was obvious), I find that there was no safe angle achievable for a cyclist who remained in the traffic lane as it crossed over the tram tracks outside Haymarket Station. The road layout constituted a significant hazard to cyclist such as Ms Fairley of the kind discussed in the caselaw and for which the Council, as roads authority, is *prima facie* responsible (subject to whether it knew or ought to have known of it).

The Princes Street location: Mr Lowdean's accident

[185] I begin by noting that the defenders do not criticise Mr Lowdean for not using the left-hand lane after the South Charlotte Street Junction. In my view, they were right to do so. The STV article notwithstanding, at proof it was not (or no longer) the Council's position that cyclists should not cycle between the tram tracks while heading east on Princes Street. The extent of Mr Dixon's comment was that the bike symbol on the roadway did not denote a formal cycle lane. Mr Renwick accepted that many cyclists would nonetheless cycle in the right-hand lane. Mr Lowdean and other witnesses spoke to the bus traffic in the left-hand lane and the large number of bus stops on Princes Street, with buses constantly stopping in that lane, or pulling out of or back into that lane. Those features, and the possibility of a cyclist being stuck behind stopped buses or coming into conflict with buses moving in and out of the left-hand lane, render the use of this lane as, at least, undesirable and potentially unsafe. Nor do the defenders criticise Mr Lowdean for not using the bike box (ie the coloured box reserved for bikes in front of traffic stopped at a traffic light) at the Frederick Street traffic lights. Again, in my view, they were correct. Other than for cyclists turning left, requiring cyclists to use the bike box would bring into play the features just noted and which rendered use of the left-hand lane problematic for cyclists wishing to travel east on Princes Street.

[186] Accordingly, for the purpose of Mr Lowdean's action the question was whether there was a risk of significant harm to a cyclist who adopted a position in between the tram tracks in the right-hand lane of Princes Street while heading east. Mr Jones' conclusions are clear (i) that the lack of space meant that Mr Lowdean was encouraged to cycle in between the tram tracks and (ii) that in so doing the need to cross back out again at a shallow angle was

unavoidable (see para [89(6)], above). To the extent that the defenders challenged this, it was confined to (ii) and their contention that a competent cyclist could achieve an appropriate angle when crossing back out from the tram tracks. In cross, Mr Jones was challenged on the basis that his calculation was undisclosed. He explained the two variables (of radius and assumed turning circle (see para [104], above)) and, after a brief adjournment on the afternoon of the first Friday of the proof, he provided his detailed workings. In respect of the longer radius (on the hypothesis that Mr Lowdean moved as far right as he could between the tram tracks before exiting out of them to the left), which was more favourable to the defenders, this still brought out an angle of less than 40 degrees. There was no challenge to this evidence or to the correctness of the calculation undertaken or to the values assumed for the two variables. Mr Blackwood asserted that he had done calculations and that it was “feasible” to achieve a better (ie less shallow) angle, but he produced no calculations or workings. In any event that longer radius was predicated on Mr Lowdean initiating his turn to the left by first moving closer to the right-hand track. That hypothesis remained just that, hypothetical, as Mr Lowdean did not in fact state that he had done this; nor was he crossed on this at all.

[187] There is in my view an air of unreality on the approach of the defenders’ experts, particularly Mr Blackwood. The fact that a manoeuvre might be theoretically (or “geometrically”) “feasible” (see at para [157], above), is of little evidential value in this case if considered in the abstract and without regard to factors in the real world (such as traffic and weather conditions, speed or rider skill). It is inconsistent with the multi-faceted nature of a hazard. On this issue, I prefer and accept the evidence of Mr Jones that the angle of crossing is only one of several factors, and that one had to consider the dynamic situation in which cyclists find themselves on the road. This is reinforced by Mr Franklin’s pragmatic

approach, which is to accept that most cyclists commuting are trying to get from A to B and cannot be expected to make wise choices at all times (see paras [114] to [117], above).

[188] Finally, in relation to Mr Lowdean's speed, Mr Franklin explained that cyclists regularly underestimate their speed. If that be correct, then Mr Lowdean was going faster than 5 mph, with the consequence that it would be marginally harder to achieve a greater angle. Whatever his speed, I find that it was likely that cycling out from between the tram tracks he would have been unable to achieve an angle of 45 degrees. Any angle he was able to achieve was below that threshold and unsafe.

[189] What of the defenders' expert evidence? Mr Dixon's evidence was confined to the generic observations that tram tracks were "obvious" and that in order safely to negotiate them a cyclist required to slow down and turn at an "appropriate angle". He was otherwise not critical of Mr Lowdean adopting a position between the tram tracks. He was not asked to relate his generic advice to the real-world situation in which Mr Lowdean found himself, which included traffic in the left lane and finding himself required to move into that lane without much prior warning. Mr Blackwood was critical of Ms Fairley for not using the cycle lane or the taxi egress as an unmarked chicane, the two alternatives eschewed by the defenders. Absent these two criticisms, there is nothing in the evidence of Mr Blackwood that in fact supports the defenders in any criticism of the path Ms Fairley took (by remaining in the traffic lane as she passed the entry to the taxi area or in crossing into the right-hand lane briefly to try to attain a greater angle to cross the tram tracks). None of the witnesses for the pursuers or the defenders sought to defend as safe the natural desire line Ms Fairley took. Indeed, at best, all that Mr Blackwood could say was that not all of the cyclists shown in the Youtube clips negotiating this stretch outside of Haymarket slipped or fell.

[190] In relation to Mr Blackwood's other criticisms of Mr Lowdean, this amounted to the suggestion that he should have moved into the left-hand lane sooner than he did (as indicated in image 5 of his report (although he accepted that the angle of the arrow in that image was not realistic but indicative)). Again, there is a disconnect between this comment and the circumstances described by Mr Lowdean (and known to Mr Blackwood), namely, the volume of stop-start traffic of buses in the left-hand lane. Mr Lowdean stated in his evidence (and which was recorded in his witness statement) that he recalled a bus stopped at the bus stop immediately before the traffic lights at Frederick Street. Mr Blackwood's advice would result in a cyclist being caught up between or among buses in the left-hand lane, and being halted or trapped by any that were to stop in front of him or her. This is unrealistic in the extreme.

[191] Accordingly, Mr Blackwood's description of the pursuers' choices as "electing" the direction and cycle line that they did, no doubt with a view to countering the pursuers' pleaded cases that they were "guided" in their choices by the infrastructure and layout, is wholly unpersuasive. His is an analysis conducted in a vacuum, divorced from the many other factors that a cyclist in the real world had to contend with. These include road and weather conditions, the need to negotiate dynamic traffic situations (which Mr Jones described could be "complex" and "hostile"), and having regard to the cyclist's own skill and confidence. Mr Blackwood's approach illustrates a failure to take account of the several factors present in these locations that contributed to the creation of a hazard. One need only consider one of Mr Blackwood's assumed requirements before a cyclist could "feasibly" achieve a safe angle when exiting from between the tram tracks: the need to slow down. This was not applied to the conditions Mr Lowdean found himself in. Slowing down could bring its own risks, if there were traffic behind him and if doing so increased the speed

differential, and hence the scope for conflict, between him and the vehicular road users. The weaknesses in Mr Blackwood's approach apply with equal force to the situation facing Ms Fairley and her attempt to impinge on the right-hand lane (with faster moving) traffic in order to try to achieve a better angle.

Conclusion on nature of the risk

[192] In the light of the evidence I have accepted, I find that in each location the infrastructure comprising the road layout and the tram tracks posed a relevant hazard to each of the pursuers. Traffic conditions contributed to this hazard, to the extent it further constrained the pursuers' choices (eg the inability to use the left-hand lane(s) on Princes Street because of conflict with left-turning traffic or because of the volume of bus traffic). The particular risk which presented itself to the road users in both locations was that of having to cross the tram tracks at too shallow an angle, and having to do so while following the expected line and direction of travel. This was not a consequence of their "electing to do so". In each case, this was inherent in the Tram infrastructure in those locations. The feature common to both cases was that the only way to avoid those risks was for the pursuers to *deviate* from the traffic lane each had permissibly selected. If Ms Fairley simply followed the direction of travel of the lane she was in, she would necessarily cross the tram tracks at an angle of about 30 degrees. In her case, this could only be avoided by moving out of the lane she was in and impinging into the other lane. In Mr Lowdean's case, having adopted a position in the right-hand lane between the tram tracks (which is not subject to criticism), at the point of the Frederick Street junction he was directed to merge into the left-hand lane (to avoid the tram stop in the right-hand lane beyond the Frederick Street junction). This required him to exit from between the set of tram tracks, but it was unlikely

(because of the constraints of space) that he could achieve a safe angle while doing so. It follows that the pursuers have proved their essential averments, and that the road layout and tram tracks comprising this part of the infrastructure resulted in Mr Lowdean and Ms Fairley each being led into the unsafe situations I have described. Each pursuer was presented with a hazard or a significant risk of an accident and which, in their cases, materialised.

Was the risk obvious?

[193] The defenders resist the pursuers' actions, in part on the basis that the risk posed by the tram tracks was obvious and that a roads authority had no duty to protect road users against obvious dangers (*per* Lord Drummond Young in *MacDonald*, quoted at para [168], above). In submissions Mr Love contended that the tram tracks were not concealed or hidden. In my view, this is too simplistic. The defenders' experts considered only the general or generic risk, as it were, of crossing tram tracks (and they did so in isolation from other factors. The defenders appeared to liken the general risk posed by the tram tracks to other risks said to be obvious, such as manhole covers and potholes. I accept Mr Di Rollo's submission that these are not comparable. The latter are small, intermittent risks that are readily navigable. They are in no way similar to the continuing risk posed by tram tracks in the roadway running for some distance alongside a cyclist's direction of travel and which the cyclist is obliged at some point to cross at too shallow an angle.

[194] On the facts of these cases, and in the light of the evidence I have accepted, there was a more specific risk inherent in the layout and presentation of the infrastructure; namely, that of having to cross the tram tracks at too shallow an angle, and having to do so while following the expected line and direction of travel. The weakness in the defenders' experts

evidence was their failure to identify or consider this specific risk, or to do so as part of a multi-factored assessment of what constituted the risk to the pursuers in the real world. I do not find that this specific risk was obvious. Even if it were, the road layout and infrastructure afforded the pursuers little realistic chance safely to negotiate or avoid that risk. This line of the defence therefore fails.

Was the relevant risk known or reasonably foreseeable to the defenders?

[195] It was not disputed that the general risk posed to cyclists crossing tram tracks was known to the defenders. What of the more specific risk I found that each location posed to cyclists? In my view, the passages in the RSA materials were themselves sufficient to establish that the features specific to these locations was identified in advance by independent experts (see paragraphs [13(1)(i) and (4)] (Haymarket) and [13(1)(ii), (2) and (3)] (Princes Street), above). The audits contained in the RSAs and their conclusions were known to the defenders, or at least known to the Council, at the material time. (Mr Renwick's acceptance that the results of the RSAs were discussed and known to the Council puts this beyond doubt (see para [124], above)). While the RSA Stage 2 relative to Haymarket post-dates Ms Fairley's accident by two months, the shallow angle at which the westbound traffic lanes crossed the tram track was inherent in the infrastructure and was obvious. I note that in his written submission (at p 28), Mr Love, commenting on the absence of any case of fault in Mr Lowdean's action based on the lack of a cycle lane in Princes Street, stated that if "the defenders had provided a dedicated cycle route on Princes Street where a tram track ran at a shallow angle through or within that route itself, then the design of that dedicated route would plainly give rise to a foreseeable risk to cyclists using it". The reality is that that is precisely the consequence of the layout of the tram tracks in

their relation to the traffic lane Ms Fairley was following at Haymarket. That feature of the layout at this location contravened one of the general propositions derived from the general design materials (see para [11(4)], above). The defenders admit this general risk was known to them. In relation to Mr Renwick's disagreement with one of the passages from the RSA put to him, this has no persuasive force. He does not have the requisite qualifications or experience to make any useful comment and he was defensive at this point in his evidence. More importantly, none of the experts challenged this conclusion of the RSA; indeed, they all accepted as a given the general design documentation, the defender's design materials and the RSAs.

[196] In the light of the foregoing conclusions, I may deal briefly with the other small chapters of evidence seemingly led to inform this issue. In short:

- 1) The witnesses led to speak to their own accidents: I found this chapter of little utility. In the case of Ms Ireland and Ms Daniels, their accidents occurred *after* the date of the pursuers' accidents in the same locations where these occurred. Ms Ireland presented as a cyclist with a significantly lower level of confidence than Mr Lowdean. The circumstances of her accident appeared to differ from Mr Lowdean's, making it difficult to discern whether her accident was sufficiently similar such as to support Mr Lowdean's account (if that was the purpose for which her evidence was led). No evidence from these witnesses was elicited to prove that the defenders were aware of their accidents at the material time. *If* this chapter of evidence was led in support of foreseeability, for the reasons given, it contributed little. *If* these witnesses were led to demonstrate a propensity of slipping (which became Mr Di Rollo's fallback position when the purpose of leading this chapter was raised with him), again this contributed little

given the common position of the experts accepting that tram risks were well known.

- 2) Numbers of accidents & Mr White's article: In their pleadings, the pursuers focused on the comparative feature of the numbers, ie that the number of accidents involving cyclists and the Tram were *higher* than in other cities. The defender's short response (found in the evidence of Mr Renwick) was that it was difficult to know if "like were being compared with like" and it was also possible that the Council's policy of encouraging the report of any incident inflated the numbers. The pursuers' riposte was that these figures were not comprehensive, as neither of their accidents was contained in these figures. I note that there is scant information about the nature of the accidents represented by these numbers. Be that as it may, the more pertinent matter that may be inferred is whether the high number of accidents in the same locations as the pursuers' sufficed to put the defenders, or at least the Council, on notice that these locations posed particular risks to cyclists. In my view, it did, having regard to the fact that the data on accident numbers analysed by some of the experts was obtained from the Police and from the Council under Freedom of Information requests, and that a significant proportion of these came from the Council and related to accidents in the same locations pre-dating the pursuers'. (In submissions Mr Di Rollo noted that there were 122 prior accidents at Haymarket and 82 accidents involving cyclists on Princes Street by October 2012 (Appendix C to Mr Franklin's generic report).) I did not find that Mr White's article or evidence, interesting though it was, contributed to the issue of foreseeability.

- 3) Miscellaneous materials: There was a little evidence about the Council leaflet, the Council advice video and consultations with cycling groups. It was unclear how this evidence was intended to support parties' cases. At its highest, these steps would support the inference that the defenders' were aware in general terms of tram risks. However, the defenders accepted this. Finally, the STV article may make an additional contribution, as it may support an inference that the Council was aware of the specific risk of cyclists having to move out from between tram tracks on Princes Street (because its then position was to advise against this).

[197] I turn to consider the remaining issues, the defenders' averments about what was not reasonably practicable and their cases of contributory negligence.

Not practicable to provide guide marks at every potential location of crossing a tram track

[198] The defenders averred that it was not reasonably practicable to provide guide marks at every point where a cyclist might cross the tram tracks (see para [42]), the basis for which appeared to be comments by Mr Blackwood in his report. In my view, this defence fails as it simply does not meet the pursuers' cases on liability. On the evidence I have accepted, the absence of lines was not causative of their accidents. In Ms Fairley's case, any lines directing her across the tram tracks from the position she was in would have led her over them at 30 degrees. In Mr Lowdean's case, no realistic arrow directing a cyclist out from between the tram tracks was likely to achieve a safe angle.

The defenders' cases of contributory negligence

[199] As noted above, the duties pled against each pursuer was in identical terms.

[200] Having regard to the defenders' concessions of those matters in respect of which they do not criticise either pursuer, there is no case made that either pursuer should have elected a different traffic lane or route. What remains, therefore, is whether the pursuers each fulfilled the standard duty to take reasonable care and keep a proper look out. In cross it was put to each pursuer that s/he had not kept a proper look out. However, apart from putting this as a proposition (which neither pursuer accepted), this was not followed up by any other question. The matter was left with their responses that they had taken care. They were not questioned about the warning signs. It was not put to either that they had failed to heed this and, in failing to do so, that this had contributed to their accidents. In any event, Ms Fairley had seen one of these signs. There was no evidence from which it may be concluded that the presence of signs, or any failure on the part of either pursuer to notice these (or all of these, if more than one) would have made any difference to what happened. In terms of causation or fault, the signs are a non-issue.

[201] Both pursuers were crossed under reference to the Highway Code. However, both were aware of the hazard posed by crossing tram tracks at too shallow an angle. Indeed, Ms Fairley's experience a year earlier as she sought to turn right from Princes Street into Waverley was eloquent of this. In my view, it mattered not, therefore, whether the pursuers were conversant with the part of the Highway Code giving a generic warning of this risk.

[202] In terms of what the pursuers should have done to take reasonable care, the only specific steps enjoined by the defenders' experts were (i) the need to slow down and (ii) to achieve an appropriate angle. In relation to (i), I accept Ms Fairley's evidence that she was travelling slowly: the traffic, road conditions, the care she was taking because of her experience of a slip a year earlier, and her wariness in proceeding through the Haymarket junction for the first time all dictated a slow speed. In relation to Mr Lowdean's speed, I

have accepted Mr Franklin's evidence that cyclists underestimate their speed. That made it unlikely that Mr Lowdean was traveling as slowly as 5 kph. In any event, it was not put to Mr Lowdean in cross that he was travelling at an inappropriate speed or one that contributed to his accident. Given that he was at a full stop at the Frederick Street traffic lights (because they were red), it is in my view unlikely that he had achieved an inappropriate or excessive speed by the time of his accident just after that junction. In either case, therefore, the pursuers had each complied with the first desiderated precautionary step.

[203] In relation to (ii), in light of the finding I have made in relation to the specific risks posed by the road layout and infrastructure, each pursuer was confronted with having to cross the tram tracks at shallow angle while proceeding in the direction of travel in her chosen lane of traffic (in Ms Fairley's case) or in the lane he was obliged by road markings to move into (in Mr Lowdean's case). The features of road layout and tram infrastructure I have already described, meant that they were confronted with the very risk the defenders' experts enjoined them to avoid.

[204] In submissions, the defender submitted that each pursuer failed to take care for his or her own safety. However, there was no specification of how or in what manner they had failed to do so. I have considered the evidence about the few specific steps it was suggested they could take, and concluded that the evidence does not support the defenders' cases of contributory negligence against the pursuers. There is no other adminicle of evidence that supports any case of contributory negligence. In the light of the evidence I have accepted and for these reasons, I have no hesitation in rejecting the defenders' cases of contributory negligence. There was no breach of duty on the part of either pursuer; they bore no responsibility in law for the accidents that befell them.

Decision

[205] Quantum is agreed. It follows from the foregoing that I grant decree in favour of each of the pursuers in their respective actions.

Coda

[206] In the course of the proof several short video clips were played of cyclists navigating the tram tracks outside of Haymarket station. These video clips were said to have been obtained from Youtube, a well-known online video-sharing platform. The court's queries as to the provenance and evidential value of these materials were superseded by the parties' agreement of these by joint minute. Use of information derived from the internet is likely to become a more common feature of litigation. This may require consideration of issues of provenance and proof of its content. By analogy with physical documents, generally, digital documents must also be produced and their contents proved. In the absence of submissions the court can do no more than tentatively suggest that the minimum to establish *the fact* that a webpage or video is (or was) extant would include: (i) the unique resource locator (the "URL") or web address from which the text or video was obtained, (ii) a copy of what was obtained (eg a printout from the webpage accessed or a digital copy file of a video downloaded) and the date on which that data was obtained from the URL, and, if not agreed, (iii) the evidence or statement of the person who accessed and downloaded the material in question from the website on that date. By this means, a digital "document" (within the meaning of section 9 of the Civil Evidence (Scotland) Act 1988) can be made real, as it were. That is a distinct exercise from proof of *the contents or accuracy* of the downloaded data. While the contents of a web-page may be self-evident (eg to prove an instance of

trademark infringement, as in *Cartier International AG & Others v British Sky Broadcasting Ltd & Others* [2014] EWHC 3354 (Ch); [2015] ETMR 1 or in *L’Oreal SA & Others v eBay International AG & Others* [2009] EWHC 1094 (Ch); [2009] ETMR 53 (the appellate level decisions, respectively, of the Supreme Court in *Cartier International AG v British Telecommunications Plc* [2018] UKSC 28; [2018] ETMR 32) and the Grand Chamber in *L’Oreal SA v eBay International AG* (Case C-324/09), 12 July 2011, [2011] ETMR 52 were concerned with other issues)), it cannot necessarily be assumed that the contents of the data are such as to support an inference that they depict an event (on which see paragraphs 53 to 66 in *Gubinas (Justinas) v HM Advocate* [2017] HCJAC; 2018 J C 45, commenting on CCTV-derived video evidence), and for which (absent agreement) parole evidence may be required. Challenges to the inauthenticity or inaccuracy of internet-derived materials are likely to raise additional issues.