CORONERS ACT, 2003

SOUTH *AUSTRALIA*

FINDING OF INQUEST

An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 10th, 11th, 12th, 13th, 17th, 18th and 19th days of October 2011 and the 25th day of June 2012, by the Coroner's Court of the said State, constituted of Mark Frederick Johns, State Coroner, into the death of Irmgard Giesela Polklaser.

The said Court finds that Irmgard Giesela Polklaser aged 76 years, late of 128 Marmora Terrace, Osborne, South Australia died at the Royal Adelaide Hospital, North Terrace, Adelaide, South Australia on the 15th day of August 2010 as a result of aspiration pneumonia complicating surgery for pelvic and spinal fractures on a background of frailty, osteoporosis and cardiovascular disease. The said Court finds that the circumstances of her death were as follows:

1. Introduction and cause of death

1.1. Mrs Irmgard Giesela Polklaser was 76 years old when she died on 15 August 2010. Dr Iain McIntyre gave the cause of death as aspiration pneumonia complicating surgery for pelvic and spinal fractures on a background of frailty, osteoporosis and cardiovascular disease[1], and I so find.

1.2. This Inquest concerned the circumstances in which Mrs Polklaser came by the injuries which led to her requiring surgery for pelvic and spinal fractures. At the time of her death Mrs Polklaser was in the Royal Adelaide Hospital having been admitted 9 days earlier by ambulance. Her injuries were assessed and recorded as fractured sacrum, acute fracture of the second lumbar vertebrae and all four pubic rami. She also had a

[1] Exhibit C2a

laceration or rupture of the bladder, posterior pelvic haematoma and soft tissue damage to both arms. An MRI was carried out and it showed an acute on chronic fracture of the first lumbar vertebrae and a small epidural haematoma. Mrs Polklaser required emboilsation of the iliac artery to stop the pelvic haemorrhage. On 7 August 2010 her bladder injury was repaired in theatre. Due to her pelvis being unstable, an internal fixation and open reduction was done on 12 August 2010. Her post operative course was complicated by respiratory failure thought to be due to aspiration coupled with her general weakness. This did not improve and, as I have noted, she died on 15 August 2010.

2. Mrs Polklaser falls at the Tea Tree Plaza shopping centre

2.1. On 6 August 2010 Mr and Mrs Polklaser were in the vicinity of Westfield Tea Tree Plaza and decided to call into the Woolworths store there to do some grocery shopping. They did not usually shop at the Tea Tree Plaza shopping centre and were not entirely familiar with its layout. Mr Polklaser made a statement on the day of his wife's death at the Royal Adelaide Hospital[2]. He made a further statement 6 weeks later[3]. In the latter he said that he and Mrs Polklaser did their grocery shopping at the Woolworths supermarket at Tea Tree Plaza. He estimated that the shopping trolley was about three quarters full. It was a Woolworths shopping trolley. They were not sure which way to get out of the building and Mr Polklaser asked a security officer. Following the security officer's directions, Mr Polklaser became aware that it would be necessary to ascend the moving walkway or travelator, which operated near the Woolworths supermarket. The travelator enabled shoppers to ascend to the next floor of the centre from which the Polklasers would be able to exit to their vehicle. The travelator was not stepped. It was a flat surface. This meant that shopping trolleys such as those commonly used in Woolworths and other supermarkets could be transported on the travelator between floors in the centre. From the various photographs of the travelator that I have seen, and from the CCTV footage[4] of the travelator to which I will shortly refer, I note that when one first alights upon the travelator the angle of incline is quite slight, to enable the user to move completely onto the travelator before the angle of incline increases to make the ascent. There is a corresponding flattening of the angle of incline a short distance before the top of the travelator to acclimatise the user to the horizontal attitude of the floor surface on the next level upon alighting from the travelator. The change in the level of inclination occurs approximately 2 to 3 metres after the commencement of the travelator and the

[2] Exhibit C4a
[3] Exhibit C4b
[4] Exhibit C13b

corresponding levelling occurs approximately the same distance from the top of the travelator. This change in inclination is significant and I will return to it later.

3. The CCTV footage

3.1. This case is forensically unusual in that the event the subject of the Inquest is recorded on CCTV footage. The Court does not therefore need to rely on eyewitness accounts from witnesses whose memories may have faded to the extent that it might in cases without such an aid.

3.2. The CCTV footage shows Mr Polklaser in conversation with the security officer, apparently obtaining directions. Mrs Polklaser is seen behind him with her hands on the bar of a supermarket trolley which appears to be approximately three quarters full. The security officer points in the direction of the upwards moving travelator. Mr Polklaser moves to the rear of the trolley and takes control of it from his wife. Mr Polklaser then begins to push the trolley towards the commencement of the travelator with his wife following behind. Mr Polklaser is seen to push the trolley onto the travelator and to then step onto the travelator behind the trolley himself. He is then seen to move approximately one metre forward by the motion of the travelator itself and then turn his head and his upper body to check on his wife's position. Mrs Polklaser then alights upon the travelator and is clearly concerned about her balance. She angles her upper body towards the right hand passenger rail of the travelator and places both hands upon it to steady herself. At this point, the trolley has just commenced to ascend the steeper inclination of the travelator. The trolley is on the left hand side of the travelator and so is Mr Polklaser. As I have said, Mrs Polklaser is on the right hand side of the travelator with both hands on the passenger rail.

3.3. Almost immediately the front of the trolley can be seen swinging abruptly to the left. This is immediately noted by Mr Polklaser who quickly turns back to face in the same direction as the trolley and brings his right hand, which he had previously removed from the handle of the trolley, back towards the handle. Mr Polklaser then appears to struggle to control the trolley. He is seen to be bending forward and apparently holding both hands on the handle of the trolley.

3.4. Quite rapidly the trolley assumes a significant angle across the direction of travel of the travelator. I would estimate the angle to be approaching 45º to the direction of travel. Mr Polklaser is still behind the trolley and has moved with the handle of the

trolley towards the right hand side of the travelator because the length of the trolley is now moving away from an alignment with the direction of travel of the travelator, and is moving to a sideways alignment on the travelator. It also appears that the front of the trolley has made contact with the stationary framework on the left side of the travelator. The trolley has stopped its forward motion up the travelator and so has Mr Polklaser. However, Mrs Polklaser has continued to move with the travelator, with the result that she is now very close behind Mr Polklaser, almost immediately behind him. Mr Polklaser then appears to lose his footing and falls backwards upon Mrs Polklaser. From the CCTV footage it appears to me that Mr Polklaser's feet become very close to the rear wheels of the trolley. I believe that the trolley has jammed against the stationary left framework of the travelator while of course the moving surface of the travelator is continuing to propel Mr Polklaser upwards. His feet thus become closer and closer to the underside of the trolley and it is this effect that causes him to lose his balance, falling on his wife. As Mr Polklaser nears the completion of his backwards fall the shopping trolley follows him and his hands can be seen still holding the handle of the trolley. It may be that at this point it is Mr Polklaser's weight and the fact that he is still holding the handle of the trolley, that is causing the trolley to tip backwards. It is also possible that the trolley is moving as a result of the conflict between the friction of the trolley against the side of the travelator and the forward movement of the travelator acting on the right rear braking device of the trolley, such that the trolley is rotating about an imaginary axis between those two points. In this scenario, it would be the trolley pushing back on Mr Polklaser.

3.5. While all of this is happening, a woman can be seen to descend the descending side of the travelator opposite the Polklasers and to move quickly around the bottom of the travelator to go to the assistance of the Polklasers. That woman was later identified as Melissa Carson, an employee of Big W which has a store on the floor above the Woolworths supermarket. Ms Carson had completed her work for the day and was leaving by means of the downwards travelator when she observed the Polklasers' accident. Ms Carson can be seen to grab the trolley and move to the left of the Polklasers, getting the weight of the trolley off them. The security officer can shortly after be seen descending the other side of the travelator and pressing the emergency stop button at the bottom of the ascending side of the travelator on which the Polklasers had come to rest.

4. Mr Polklaser's account

4.1. I have mentioned that Mr Polklaser made two statements. In the first of them he said:

> 'The trolley lost traction and hit the side and went sideways. I couldn't hold it anymore … I lost my footing and I fell backwards and landed on my back facing up.' [5]

In the second statement which was made 6 weeks later, Mr Polklaser could say no more than:

> 'I lost my footing for some reason. I am not sure why that was. The trolley may have had something to do with it.' [6]

It is significant that in the first statement Mr Polklaser described the trolley as having 'lost traction'. It is also significant that he describes it as having 'hit the side' and 'went sideways'. The latter two movements accord exactly with the CCTV footage of the incident on the travelator as I have described it above.

4.2. To the extent that Mr Polklaser expressed a degree of uncertainty in his later statement, I discount that. In my view it is natural that Mr Polklaser's earlier statement would be likely to be more accurate. It is natural that his recollection may have quickly faded given the very upsetting nature of what had taken place in the preceding weeks.

5. Ms Carson's account

5.1. Ms Carson, as I have said, was an employee of the Big W store on the floor above the Woolworths supermarket. Her evidence was that she had seen the Polklasers as she was descending on the opposite travelator. She said as the Polklasers were going up:

> '… he started to struggle with the trolley, started to sort of roll backwards and he was stepping backwards.' [7]

5.2. Ms Carson said that she had yelled out for him to push the trolley forward. She had done this because she believed that the wheels of the trolley may not have engaged with the grooves in the travelator with the result that the brakes of the trolley had not engaged the travelator surface[8].

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[5] Exhibit C4a
[6] Exhibit C4b
[7] Transcript, page 67
[8] Transcript, pages 68, 91 and 101

6. The trolley 'braking' device

6.1. The Woolworths supermarket trolleys were fitted with what might be described as a braking device which operated automatically when the trolley was placed on the travelator. The rear wheels of the trolley had an outer circumference with a profile in the shape of an inverted U. Thus, the inner and outer portions of the circumference of the wheel were raised proud of the surface between them. The edges thus formed would slot into grooves on the surface of the travelator designed to receive such wheels. The effect of this is to lower the height of the trolley with the result that a plastic pad, which on a normal flat surface would sit just above the surface and not make contact with it, would be brought into contact with the top of the grooves of the travelator. In this way the rear wheels of the trolley would not be able to move freely because the weight of the trolley would be borne by the plastic pads which were positioned adjacent to the rear wheels. There were only such pads on the rear wheels of the trolleys, but if they were operating correctly, they fixed the trolley in position in relation to the travelator.

7. The photographs of the Polklasers' trolley

7.1. Immediately after the Polklasers' accident their trolley was photographed by Mr Calvaresi, another security officer who worked at Tea Tree Plaza. Mr Calvaresi said he took the photographs[9] to show the 'braking devices' on the Polklasers' trolley. The picture at page 6 shows the braking device on the left rear wheel of the Polklasers' trolley[10]. Mr Calvaresi said that he took the photograph of that part of the trolley:

> 'Because there was no rubber on that part of it.' [11]

He explained that a normal trolley would have what he described as rubber on that surface to stop the trolleys from moving on the travelators[12]. In fact, I think Mr Calvaresi may have been mistaken in describing the coating as rubber. It was probably some form of plastic. The photograph taken by Mr Calvaresi does not show any form of rubber or plastic coating on the braking device on the left hand wheel of the trolley. It merely shows a flat surface made of steel.

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[9] Exhibit C13a, pages 6, 7 and 8
[10] Transcript, page 126
[11] Transcript, page 185
[12] Transcript, page 185

7.2. A serviceable trolley brake of the same kind is photographed as part of Exhibit C14b[13]. This shows quite a thick plastic coating around the entirety of the bottom flange of the braking device. It covers the horizontal metal flange entirely and appears to be at least a centimetre or more thick. It appears to be moulded around the horizontal flange of the braking device, not merely fitted to the underside. The photograph to which I have referred demonstrates how the braking device sits on the upper surface of the grooves of the travelator when the raised parts of the wheel fall into the grooves of the surface of the travelator. The result is that the rear of the trolley is sitting directly on the plastic brake pad, which in turn is sitting directly on the upper surface of the travelator and the trolley is therefore unable to move.

8. Conclusion

8.1. In my opinion it is quite clear that the left hand braking device of the trolley used by the Polklasers had no padding on it at all. It appears that the padding had, at some time prior to 6 August 2010, broken away entirely from the metal flange. This is not a case of a worn braking pad - there was no worn surface, the pad was missing altogether.

8.2. I conclude that the absence of the brake pad from the left rear braking device on Mr Polklaser's trolley meant that there was nothing to stop the left rear wheel of the trolley moving in relation to the surface of the travelator. On the other hand, the right hand rear wheel was not able to move because its braking device was operating correctly. As soon as the trolley had started to ascend the steeper inclination of the travelator to which I have previously referred, the left hand rear wheel of the trolley moved backwards in accordance with the force of gravity. This in turn caused the left hand front of the trolley to come into contact with the stationary framework on the left hand side of the travelator. This induced friction between the left hand front of the trolley and the immovable frame of the travelator, causing the trolley to turn further to the left in relation to the direction of travel of the travelator as the right rear wheel of the trolley continued to move with the travelator in a forward direction. The result of this was to push Mr Polklaser towards the right hand side of the travelator, threatening to jamb him between the right hand side of it and the rear handle of the trolley. The trolley started to move more slowly or perhaps altogether ceased movement in a forward direction, however Mr Polklaser and Mrs Polklaser continued to move with the travelator in a forward direction, thus resulting in Mr Polklaser's feet becoming

[13] Photograph 4

closer to the underside of the trolley. Mr Polklaser was initially able to avoid his feet going under the trolley by stepping backwards, but the point was reached where he could no longer do so. Once his feet became too close to the trolley, Mr Polklaser lost his balance and commenced to fall backwards. His wife was immediately behind him and he therefore fell upon her. He continued to hold the handle of the trolley. The trolley commenced to overturn backwards towards Mr Polklaser[14].

8.3. In summary, I conclude that Mrs Polklaser's injuries were sustained as a direct result of the lack of a proper brake pad, or any brake pad, on the left hand rear wheel of the Polklasers' trolley. But for the lack of a proper or any brake pad, the accident would not have happened.

9. The question of maintenance

9.1. I heard evidence concerning the provisions made by Woolworths for maintenance of the trolleys. On reflection, I do not consider it is necessary to examine that evidence in detail. Whatever those provisions were, they were not capable of detecting the defect in the braking device on the Polklasers' trolley. Had the defect been detected, it could readily have been fixed, or the trolley taken out of service.

10. Other incidents

10.1. There was evidence taken at the Inquest of CCTV footage showing other incidents involving trolleys and travelators[15]. There were four such incidents. Three involved Woolworths trolleys, and one a trolley from another major supermarket operator. Some of these incidents were eerily similar to the Polklasers' accident. Each of the incidents was also the subject of file notes kept by Westfield, the owner of the shopping centre[16]. The incidents are described as follows:

1) Incident on 5 March 2010

'V pushed her Woolworths trolley onto the fresh food market travelator17 and as she commenced up the travelator, the trolley turned to the left and as V tried to rectify the problem, she fell onto her left side hurting her knees and left elbow.'

[14] I have had no difficulty in reaching this conclusion after careful and repeated observations of the CCTV footage. I note that Mr Neale, a health and safety inspector with SafeWork SA who investigated this incident, said that he found it difficult from viewing the CCTV footage to say 'whether the brake did engage properly or not' (see Transcript, page 129). It is true that the CCTV footage does not allow one to see whether the left hand braking device makes contact with the raised surfaces of the travelator, but the absence of any plastic padding on the braking device, coupled with the behaviour of the trolley as depicted on the footage and Mr Polklaser's statement (Exhibit C4a) satisfy me that the braking device on the left rear wheel did not activate.

[15] Exhibits C27, C27a, C27b and C27c

[16] Exhibit C26

[17] The same travelator as that involved in Mrs Polklaser's case

2) Incident on 12 August 2009

'S walked onto the up travelator at Big W, and the Woolworths trolley she was pushing rolled back onto her. She stated "the brakes did not lock, it started to twist sideways, I could not hold it, and it rolled back onto me. I fell onto my left side and my left elbow is cut and grazed".'

3) Incident on 23 May 2009

'N was coming up the moving walkway from the fresh food area with a fully loaded Coles trolley when the trolley twisted sideways, as she tried to straighten the trolley it ran into the side of the walkway and she fell backwards.'

4) Incident on 30 March 2009

'W had just entered the moving walkway with a full Woolworths trolley load when the brakes did not engage and the trolley suddenly swerved to the left and she fell backwards. Her right big toe was injured, nail lifted off and bleeding, appeared to be slightly in shock and was not sure if she had any other injuries apart from a very sore head.'

10.2. Each of the incidents described above was serious. In some cases the shopper was quite badly injured. They show that Mrs Polklaser's tragic accident was not an isolated case. I have not relied on these cases in any way in reaching a conclusion as to the factors which operated in relation to Mrs Polklaser's accident. The CCTV footage of her accident together with the other evidence about it, was the basis of my conclusion. However, these other incidents have served as a confirmation of my conclusions about what occurred in Mrs Polklaser's account. The description of the incident on 30 March 2009 is significant, in that it includes an account regarding the involvement of the side of the walkway and what occurred when the trolley ran into it.

11. Children, trolleys and travelators

11.1. It is clear from the photographs of the trolleys in evidence in this case that it is common for supermarket trolleys to have seating for small children. Shoppers are encouraged by supermarkets to place small children in that seating. This Inquest did not involve a child, but another vulnerable class of person - an elderly person. However, it is clear to me that the danger exists that a child might suffer serious injuries if she or he were riding on a faulty trolley on a walkway. It was pointed out by counsel that the travelators have warning signs to discourage the carriage of children on trolleys on travelators. However, it seems to me that children are another vulnerable group that may be affected by incidents involving travelators and trolleys.

12. Recommendations

12.1. Pursuant to Section 25(2) of the Coroners Act 2003 I am empowered to make recommendations that in the opinion of the Court might prevent, or reduce the likelihood of, a recurrence of an event similar to the event that was the subject of the Inquest.

12.2. I make the following recommendations:

1) That the Minister for Business Services and Consumers issue warnings to shoppers about the risks involved in travelling with trolleys on travelators;

2) That the Minister for Industrial Relations ensure that supermarkets are reminded of the importance of properly maintaining their trolley fleet. The evidence in this case of the frequency of events involving trolleys is disturbing. It should not happen at all, and certainly not as frequently as the evidence in this case shows at one shopping centre;

3) That the Minister for Industrial Relations undertake an audit of all available CCTV footage to determine the frequency of this kind of event at all shopping centres in the State to determine if it is necessary to take action by regulation, inspection or other form of government intervention in this area.

Key Words: Travelators/Escalators; Public Warning; Crush Injury

In witness whereof the said Coroner has hereunto set and subscribed his hand and Seal the 25th day of June, 2012.

State Coroner