STATE
CORONER
VICTORIA

WHEELCHAIR PEDESTRIAN RAILWAY CROSSING INQUESTS

Introduction

During 2001 a number of incidents (including near misses) occurred involving persons on motorised wheelchairs at pedestrian railway crossings. These incidents have raised questions about the safe design and maintenance of pedestrian railway crossings as related to the use of crossings by wheelchair operators. The issue of safe design of wheelchairs has also been raised.

Two separate fatality incidents occurring during that particular year were investigated by joint inquest, namely the deaths of Christopher Jones (October 2001) and Irena Gilewski (December 2001). Both incidents occurred at different pedestrian railway crossings in Metropolitan Melbourne.

During the investigation some near miss incidents where the wheels of wheelchairs became stuck in the grooves of railway tracks were also documented.

These incidents resulted in a number of safety reviews undertaken by government and other interested agencies (including the companies responsible for maintaining the infrastructure). The various reviews made a number of recommendations for improvements in safety. There were also a number of submissions supplied to the Coroner and these documents also form part of the coronial files for future reference.

It is important to note that some of the safety reviews contain lessons for infrastructure managers in other areas of disability.

Case No: 3293/01

FINDINGS

The death of Christopher Jones occurred on 25th October 2001 at the Nunawading Railway Crossing, Springvale Road, Nunawading and was from multiple injuries.

Summary

At approximately 9.16am on 25th October, Mr. Jones, aged 50, was struck by a train whilst crossing the railway line at a railway pedestrian crossing, Springvale Road, Nunawading on his motorised wheel chair. Jones was suffering from cerebral palsy.

It appears that as the train approached the crossing the pedestrian gates automatically closed and Mr. Jones was trapped on the crossing. Understandably, Jones became agitated and lost control of his limb movements. Because of his disability he was not able to regain control of his movements and thereby manage the controls of his wheelchair in order to get out of the way of the rapidly approaching train.

The witnesses

Mr. Harry Lymberatos, Company Director, was driving south on Springvale Road and he was the second vehicle stopped at the Nunawading Railway Station level crossing. He observed a pedestrian on the inside of the gates as they were closing. Lymberatos noticed that the pedestrian was not *"getting across and was stationary."* He got out of his vehicle and ran towards the gates in an attempt to help. He said:

> *"As I ran towards him it appeared that he was trying to shake the chair backwards and forwards and it looked like he was stuck. He was looking over his left shoulder. I could see his left hand was at the controls and I saw his (sic) raise it above his head".*

Mr. Lymberatos noted that the pedestrian was *"near the first track"* when he was hit.

Mr. Colin Sizer, Software Support Engineer, was standing on the platform and observed the wheelchair between the tracks and the northern fence line. He *"thought he looked a bit close to the tracks..."* and when he looked a bit closely he could see:

> *"the front of the wheel chair was on the tracks itself. I could see on leg was sticking out over the track. He appeared sitting upright and it looked like he was strapped into the chair…'*

And the *"whole time you could see the guy in the wheel chair was flaying his head around and was waving his arms around. His arms were waving around as if to attract attention but they weren't raised they were about chest height."*

Mr. Robert McKindlay, Train Driver for Connex Trains, was operating the 08.44 Flinders Street to Lilydale Train. He noted that as his train was approaching the station (at approximately 70 kmh in preparation to stop at the platform) he sounded the train's whistle at the whistle board as a standard warning measure. Immediately after sounding the whistle

he observed a wheelchair bound pedestrian *"move onto the running line at the north east pedestrian crossing of the Springvale Road level crossing. He travelled north to south."* McKindlay applied full emergency brakes and sounded the whistle in a long blast. He stated that (at about 100-110 metres) the pedestrian was *"facing south and stationary at the north-most rail."* McKindlay said:

> *"I saw the person's hands leave the controls of his wheelchair and go into a spasm. I stopped sounding the whistle as I thought he may be able to regain his composure, however he continued with his spasm attack and not regaining control of the wheelchair."*

Mr. McKindlay stated that he noticed:

> *"the front swivel type wheels"* of the wheelchair to be *"caught between the rail and the north side of the track and the bitumen."*

The nature of Mr. Jones' disability and its effect on the incident

A report to the Coroner by the Spastic Society of Victoria (SCOPE) indicated that Mr. Jones' disability, Athethoid Cerebral Palsy,:

> *"caused fluctuations in muscle tone resulting in involuntary and uncontrolled movements. These occurred when Chris performed any physical movement, or spontaneously if he was startled, angry or excited."*

And:

> *"If startled or agitated, Chris may have been unable to retain his hand in contact with the joystick, or conversely, may have pushed it against the joystick which could cause the chair to move in an unintended direction. It could take Chris several seconds to regain his contact with the joystick."*

The investigators' opinions

Senior Sergeant Robert LeGuier, Mechanical Investigation Unit, Victoria Police inspected Mr. Jones' wheelchair which was a Magic Mobility Electric Wheelchair. When powered up the wheelchair was found to *"be operating correctly."* Prior to the collision it was serviceable. He noted that his investigations of the manufacturer (Magic Mobility, Rowville) indicated the:

> *"electric motors would be capable of pulling the rear castor wheel out of 75mm deep hole or obstruction, or if the castor wheels were at right angles to the front wheel, the motors would pull the rear castors out of a 50mm wide gap."*

Senior Constable Peter Jarvis, Transit Safety Division, Victoria Police, who investigated the incident for the Coroner, summarised the incident as follows:

"...It appears that Christopher JONES was in a position of crossing the tracks, in a north to south direction, when the signal bells and booms began operation on the approach of a Lilydale bound train.

At approximately 9.16 am Christopher JONES was struck by the 8.44 am Flinders Street to Lilydale train. The point of impact was directly adjacent to the crossing and Christopher JONES was dragged 11.5 metres along the tracks as a result of the accident. Christopher JONES landed underneath the wheelchair and had to be unstrapped from the wheelchair by the first witnesses at the scene. The body was left in that location where the deceased was treated by the first ambulance crew which arrived at 9.23 am and then the MICA Unit which arrived later at 9.35 am. The body was left in situ after attempts to resuscitate him were ceased at 9.55 am.

The injuries sustained by Christopher JONES appear consistent with the wheelchair being in a position close to the tracks on the North side of the crossing but between 100-300 mm prior to the nearest rail line. From the damage to train carriage 182M, it appears that Christopher JONES has been struck by the front step and driver's step of the train. The tram carriage appears to have collided with the middle of the right side of the wheelchair and the body of the deceased. I have found no evidence to suggest that in this case the wheels of the wheelchair were in any way prohibited from moving. The castor wheels at the rear of the electric wheelchair were at least 1200 mm from the nearest rail line at the time of impact.

From my investigations into this accident it appears that Christopher JONES had been unable to properly control the movement of the wheelchair while attempting to cross the rail line at the pedestrian crossing. It appears that once the signals began to operate, Christopher JONES was unable to move into a positing of safety, began to panic, and was then struck and killed by the lower fixtures of the carriage. The train carriage fixtures have caused considerable damage to the wheelchair and the fatal injuries sustained by Christopher JONES. "

Submissions

The Public Advocate

It is noted that Mr. Jones' disability, Athetoid Cerebral Palsy, resulted in him being subject to involuntary limb movements. Clearly, there is an issue of whether his disability also had an effect on the incident. Recognising this problem, in its submission to the Coroner, the Office of the Public Advocate, Victoria, said:

"There is a question whether Mr Jones was unable, by reason of such involuntary movements, to access the control of his wheelchair so that he could move clear of the on-coming train. The evidence of the witnesses in relation to this comes from the train driver, Mr McKinlay and Mr Lymberatos:

- *Mr McKinlay, the train driver, states that he "saw the person's hands leave the controls of his wheelchair and go into a spasm. I stopped sounding the whistle as I thought he may be able to regain his composure, however he continued with his spasm attack and not regaining control of the wheelchair"; and*

- *Mr Lymberatos states "I could see his left hand was at the controls and I saw his[m] raise it above his head".*

The pedestrian gates were operating at the time of the accident. The Public Advocate pointed to the memorandum by Alstom Melbourne Transport (dated 25th October 2001) in which the company noted:

"The pedestrian gates will begin to drive to the closed position after 7 seconds of warning time (lights and bells operational) from the time the circuits detect the presence of a train. The 7 seconds delay is obtained from the slow release GNR relay (3 seconds) and the slow release GCR relay (4 seconds)."

The Public Advocate indicated that the total time before the train arrives at the gates after the alarm sounds is between 23 and 28 seconds. It says that a wheelchair user would only escape into the pedestrian crossing gate bay once the gate had closed and similarly would only be able to leave through the exit space created by the closing gate once that gate had closed.

The Public Advocate's submission points to the fact that there is no evidence as to

"where Chris Jones was prior to the alarms sounding. Mr Lymberatos states that he saw Chris Jones only when the boom gates were down. He was the first witness to see Mr Jones. Ms Barton-Power states that the pedestrian gates were locked when Mr Lymberatos got there and he was unable to open them."

The Advocate argues that if Mr Jones was:

"between the gates at the time the alarms sounded he had a maximum of 28 seconds to leave the crossing however the real time may have been as little as 18 seconds (23 less 5 for the gate to close)." That:

"According to the scale diagram of the accident scene provided in the brief, the pedestrian-gate fence is 120cm from the track. The train carriage overhangs 68.6cm from the track, leaving a space 51.4 cm between the side of the train and the pedestrian-gate fence. According to Magic Mobility the wheelchair is 102cm long. Therefore Mr

Jones had to remove himself at least 68.6cm from the train track to avoid the collision and to do this he needed to either reverse into the space against the closed pedestrian gate or travel to the opposite side of the crossing from where he was hit."

And importantly there are:

"no markings on the crossing to indicate how far the train overhangs beyond the track. Therefore Mr Jones had to make a judgment about this himself."

On the issue of Safety bays the Public Advocate submitted:

"The safe spaces are created by the closing gates at either end of the pedestrian crossing. These gates create enough space to take a wheelchair but dexterity is required if the wheelchair user is to pass out through the exit space created by the closing gate.

It is submitted that if a wheelchair user enters the space created by the closing gate and remains there whilst the train departs it will be necessary to immediately reverse from there to avoid being hit by the gates opening."

On *"Signage & information"* the Public Advocate pointed to the fact that the following signs were erected on the side of the crossing to which Mr Jones was travelling:

- *Stop sign stating "When lights are flashing" together with a `no bicycle' warning at the entrance to the pedestrian gate;*
- *"Keep tracks clear" sign at the motor vehicular entrance to the crossing;*
- *a "Railway Crossing" sign above the traffic lights of the crossing; and*
- *another sign which cannot be read.*

And noted that there *"is no marking on the crossing of the overhang of the train from the rail track."*

The Department of Infrastructure

Counsel for the Department of Infrastructure submitted, in relation to the death of Mr. Jones that:

"the evidence would appear to be overwhelming that the wheelchair in which Jones was seated was not caught in the railway lines at the time that the chair was struck by a train."

Conclusion

At approximately 9.16am on 25th October, Mr. Jones, aged 50, was struck by a train whilst crossing the railway line at a railway pedestrian crossing, Springvale Road, Nunawading on his motorised wheel chair. Jones was suffering from cerebral palsy.

It appears that as the train approached the crossing the pedestrian gates automatically closed and Mr. Jones was trapped on the crossing. Understandably, Jones became agitated and lost control of his limb movements. Because of his disability he was not able to regain control of his movements and thereby manage the controls of his wheelchair in order to get out of the way of the rapidly approaching train. Jones was struck by the overhang of the train.

Case No: 3780/01

FINDINGS

The death of Irena Gilewski occurred on 12th December 2001 at the Pedestrian Railway Crossing, Heatherton Road, Noble Park from multiple injuries.

Summary

At approximately 8.35 am on 12th December, Ms. Gilewski, aged 41, who is disabled and uses a wheelchair, was crossing the Heatherton Road Railway Crossing on her motorised wheelchair when the wheels became stuck in a groove in the tracks and she was struck by a Dandenong bound train.

Immediately prior to having been hit Ms. Gilewski had passed behind the Dandenong-City bound train, reached the opposing closed pedestrian gate, and was in the process of returning from the way she had come when she was struck by the other train.

The witnesses

Mr. David Hough, a Dental Prosthetist, was stopped at the Heatherton Road Crossing in his vehicle and waiting for the train. As the train was going through from Dandenong to Melbourne he:

> *"noticed a person in a motorised wheelchair waiting in the pedestrian section of the crossing…*
>
> *…After the train had passed through, the person in the chair moved out a bit onto the side of the railway line. I assumed there was no gate at the pedestrian crossing to stop this person getting onto the tracks. The boom gate were still down and the bells were going."*

And, Mr. Hough stated that he:

> *"…then heard a train whistle going of a train coming from Melbourne direction. I looked back at the person in the wheelchair, who seemed had moved further onto the crossing,*

and saw her moving backwards and forwards and to the side slightly in the direction of the train coming."

Mr. Hough said that he then *"realised she may have been stuck on the railway line and couldn't get out."* He could see *"the front wheels of the wheelchair moving, but the wheelchair wasn't going anywhere."* His first impression was that the back wheels were stuck but he *"couldn't be sure."* Hough noted that another motorist had got out of his car to help but it was too late.

Mr. Hough commented that the train was not going fast when it hit - *"between 10 and 20km/h…"*

Mr. Peter Carmody, Teacher, was stopped in Heatherton Road at the crossing and facing west. His vehicle was the first car in the line. He noticed the city bound train passing through the crossing and:

"saw a female in a wheelchair crossing the railway tracks, coming from the roundabout side. I don't remember seeing this lady before the train went through and don't know how she was able to get onto the tracks to cross them while the gates were still down. At this time the lights and bells were also still going."

Mr. Carmody thought this action was *"a bit silly and that she was taking a chance."* He observed that *"she got all the way across the two lines, but was blocked from getting out by the safety fence."* Carmody said for *"some reason she then turned to her left and started to head back from the direction she had already come."*

Then:

"At that point she manoeuvred her wheels, to find the best path back. I thought she knew what she was doing so I looked away.

I then saw a train to my right heading towards Dandenong and looked back at the lady. She hadn't made much progress towards the other side and I realised she was in trouble…"

Mr. Carmody then got out of his car and ran towards the pedestrian but it was too late for him to be able to help. Carmody saw her *"hand shaking, trying to work the driving stick of the wheelchair, in what looked like an effort to free herself from the path of the train."* He thought that she *"was stuck."*

Other witnesses commented that the train was slowing down and stopped between one and 2-3 carriage lengths after hitting the wheelchair. Mr. Albert Kovac, Driver, observed the wheelchair operator using her leg to try and push the chair backwards and off the tracks. He considered that *"the small wheels at the front of the wheelchair were stuck on the train line and that's why they couldn't move."* He also observed a man (Carmody) get out of his car in an attempt to help but Kovac knew he could *"not make it because the train was too close."*

Ms. Jeanette Carlyle, Teacher, saw the incident at a distance of about 40 to 50 metres and noted that the wheelchair *"appeared to be stuck."*

A maintenance inspection before the incident

The crossing was inspected by Mr. Joseph Munro, Thiess' track inspector on 7th December 2001. Munro, who had 20 years experience in the industry, and indicated that he was aware of the difficulties an uneven asphalt surface could have on the control of a wheelchair considered that the pedestrian railway crossing was safe for *"normal wheelchair use."* He evidently turned his mind to this issue when undertaking the examination. The Thiess submission noted:

> *"Mr Munro explained in cross examination that by "normal wheelchair use" he meant that the wheelchair user would travel directly from one side of the crossing to the other, in a straight line on the crossing. Having since had the benefit of seeing the video re-enactment made by Senior Constable Boldiston and Ms Tizard, Mr Munro stated that he was surprised by the extent to which Ms Tizard varied her course to "correct the angle" of the crossing."*

And pointed out that there are no existing standards applying to the issue of wheelchair users and the evenness of the surface. It noted:

> *"In terms of appropriate flangeway gaps Mr Munro properly applied an objective standard of between 50mm and 80mm in width.*
>
> *In terms of evenness of surface he did not have available to him any objective standards which he could consult in making a judgement regarding the safety of the crossing. When inspecting the crossing he would consider whether the surface was smooth enough to provide a safe surface for users of the pedestrian crossing, in particular wheelchair users. The fact that he was cognisant of the needs of wheelchair users is evidenced by the reference in his weekly reports to "impaired wheelchair access" at crossings on 27 November 2001 and 29 November 2001 (page 2 of 4 in the second part of the Thiess Infraco Incident Investigation). He acknowledged that his judgement was based on his subjective view of the appropriate smoothness of the surface of the crossing, in the absence of any objective standard against which to compare."*

And that:

> *"The Public Transport Corporation has no documented standards dealing with the evenness of asphalt pavement. Thiess Infraco has recognised the need for standards and has developed a draft construction and maintenance standard which is currently being validated with a view to implementation across the M-Train Network. This would provide objective infrastructure standards and their measurement for use by Thiess Infraco field staff. A co-ordinated approach to standards across the whole rail network would assist in the delivery of consistent maintenance quality and Thiess Infraco urges that standards be developed as a matter of priority."*

Various examinations of the scene of the incident

Mr. Patrick McKay, maintenance engineer from Thiess stated, in the Thiess Technical Services Report on the incident (January 2002), that:

> *"The asphalt surface through the pedestrian crossing was of variable quality but it did not appear to present a hazard to pedestrians…"'*

Mr. McKay indicated that the video of a wheelchair operator negotiating the Heatherton crossing, filmed after the incident, highlights that sufficient consideration may not have been given to the angle of the pedestrian crossing to the rail lines, and how this layout effects the wheelchair user. He noted that there are many competing standards and issues to balance. McKay has now, as a result of hearing the evidence and viewing the video at the inquest, identified problems with the way some users use pedestrian crossings.

Mr. McKay acknowledged that the layout of the crossing (angle) may have forced the person demonstrating on the video to approach the crossing in such a way to risk the castor wheels dropping into the gap in the rail flangeway.

It is noted that Thiess stated (in its Technical Services Report) on the incident (Report dated January 2002) stated:

> *"The asphalt surface through the pedestrian crossing was of variable quality but it did not appear to present a hazard to pedestrian or wheelchair users."*[1]

Crossing wheelchair use before the fatality and subsequent testing

Ms. Nicole Tizard, Pensioner and wheelchair user stated that she only used the pedestrian crossing at the Heatherton Road railway tracks twice. She had the same type of chair as that used by the deceased and was "worried about" her "front wheels getting stuck in the groove of the tracks." (She noted that she had been stuck twice in the grooves at the Clayton Station and subsequently had to be pulled out by a passer by).

After the fatality incident, on 11th January 2002 Ms. Tizard was involved in a test at the Heatherton Road crossing conducted by Senior Constable Boldiston. Tizard explained that she crossed the tracks from west to east on two occasions. On both occasions one of her front wheels *"turned in the same direction as the tracks, due to humps in the asphalt"* and she became stuck and unable to continue until Boldiston lifted her out. The first time she was stuck on the Melbourne bound tracks and on the second occasion, the Dandenong bound.

Police investigator's opinion of the incident and state of the crossing

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[1] From the photographs in the Theiss Technical Report it appears this would depend on precisely where the wheels of the wheelchair were when crossing the rails (Page 1 of 1). The surface is obviously uneven in various spots.

Senior Constable Andrew Boldiston noted that the bitumen area for the pedestrian crossing (approximately 10 meters wide) *"where it runs parallel to the metal tracks"* was in *"a state of disrepair."* That the:

> *"edges of the bitumen, particularly around the eastern and western most rails, were broken, bumpy and showing signs of degradation and disrepair. All edges of the bitumen, in the areas on and around the pedestrian crossing, showed signs of repairs at some time up to a distance, varying between 10-25 centimeters, extending out from the rails. The bitumen between the tracks had a corrugated appearance, with ruts which filled up with water when it rained." (on this occasion the weather was fine an the road was dry - Coroner's note)*

Submissions

The Public Advocate

The Public Advocate made a number of comments on issues such as *"Surfaces", "Barriers", "Intersections best at right angles", "Safety bays"* and *"Flange gap".*

The Advocate submitted that there was contradictory evidence as to exactly where Ms Gilewski was hit by the train:

> *"Peter Carmody gave evidence that Ms Gilewski was hit whilst she was in the `no man's land' near the road, some distance from the pedestrian crossing. However this is disputed by the photographic evidence, including the photograph in the Thiess Infraco report "Wheelchair incident at Heatherton Road Level Crossing on 12 December 2001". On page 4 of that report it notes "There were scrape marks on the asphalt pavement in the down end pedestrian crossing indicating that the wheelchair had been struck in the vicinity of the up rail in the down track".*
>
> *There is evidence that Ms Gilewski turned her wheelchair anti-clockwise toward the on-coming train before moving back toward the other side of the crossing. The anti-clockwise turn would have brought her closer to the `no man's land' on the edge of the pedestrian crossing which is consistent with the photographic evidence…"*

And concluded by way of submission that *"it is more probable than not that Ms Gilewski was hit on the pedestrian crossing near the area that became known as the `no man's land'."*

On the issue of the safety of surface of the track (for wheelchair users), the Public Advocate pointed to Senior Constable Boldiston's description, vis:

"Upon examining this surface I found the entire bitumen edge, where it runs parallel to the metal tracks, was in a state of disrepair. The edges of the bitumen, particularly around the eastern most and western most rails, were broken, bumpy and showing signs of degradation and disrepair. All edges of the bitumen, in the areas on and around the pedestrian crossing, showed signs of repairs at some time up to a distance, varying between 10-25 centimetres extending out from the rails. The bitumen in between the tracks had a corrugated appearance, with ruts which filled up with water when it rained."

And that a number of witnesses outlined their experiences of the Heatherton Road railway crossing:

"Kathleen Debeaux, who uses a walker, stated "I started to cross the railway tracks as I always do and got across the first set of tracks, but as I was going across the second set the left front single wheel became stuck in a hole between the track and the concrete. I tried to lift up, but I couldn't. I kept trying, but I got too tired and fell over and ended up sitting down across the tracks".

Leonie Chirgwin "observed a adult female in an electric wheelchair with, I think, the front wheels stuck or jammed between the asphalt and the railway line". She reported this to Customer Feedback Centre for M>Trains advising that the asphalt was "very bumpy and lumpy".

Veronica McNamara uses a 3 wheeler electric scooter. She does not use the Heatherton crossing because "I had trouble keeping the front wheel of the scooter straight because it kept hitting the bumps in the bitumen. This could turn the front wheel the wrong way and cause me to loose control".

The Public Advocate noted that the *"effect of the surface upon a wheelchair such as that used by Ms Gilewski was tested by the police with the assistance of Ms Nicole Tizard."* And that the investigating Senior Constable described the tests as follows:

"Under my supervision, and of her own free will, TIZARD then crossed the pedestrian crossing from the western side to the eastern on two occasions. Both of these were video taped by BATTEN. On the first crossing one of her front wheels turned in the same direction as the tracks due to the bumps, ruts, holes and general state of disrepair of the asphalt. This caused the wheelchair to become stuck on the Melbourne bound (up) track, with the wheel wedged between the metal rail and the bitumen edge. On the second crossing the same thing happened, this time on the Dandenong bound (down) track. Both times TIZARD was unable to continue until I lifted up the wheel that was stuck."

The Advocate points to the fact that this *"perception of the track is reinforced by the video of Ms Tizard's crossing."* That:

"Mr McKay, the engineer for Thiess Infraco disputed that the surface was too rough for wheelchair users. However, Mr McKay was of the opinion that a wheelchair user would keep up momentum when using the crossing similar to the way to a car crosses serial corrugations on a road-surface. It is submitted that Mr McKay's idea of a typical wheelchair user differs substantially from behaviour of actual users."

But that:

"Mr Munro, the track inspector for Thiess Infraco, responded differently to the video evidence. In his statement he noted that the Heatherton Road crossing was "satisfactory for normal wheelchair access" by which he explained that there was a direct path from side to side. He admitted that he had never had any education about how wheelchair users actually cross and that the video was enlightening. He admitted that he was surprised by the effect of the surface upon the wheels of the chair."

The Public Advocate submitted that *"the pedestrian crossing surface at Heatherton Road was dangerous to wheelchair users in two ways",* namely:

1. *It was so bumpy that it caused the smaller wheels to be deflected from their path; and*
2. *It was so bumpy that chair users negotiated it more slowly than had it been smooth and thus lost momentum in their travel across the crossing."*

On the issue of *"Barriers"* the Public Advocate commented that:

"Theiss Infraco provided a "Signal Maintenance Level Crossing Report" enclosed in the police brief. The test report advises that "Train sequence simulation was carried out which includes the control and holding circuites for Up and Down direction. TOK. Signalling and level crossing equipment functioning as per Design".

How Ms Gilewski came to be between the pedestrian gates is not clear. David Hough states that he had noticed Ms Gilewski before the Melbourne-bound train had come through, "approaching the pedestrian crossing between the 2 fences". When the Melbourne-bound train was going through the crossing he saw her "in a motorised wheelchair waiting in the pedestrian section of the crossing". After the Melbourne-bound train passed, "the person in the chair moved out a bit onto the side of the railway line". As Ms Gilewski was now on the railway line Mr Hough "assumed there was no gate at the pedestrian crossing to stop this person getting onto the tracks".

And submitted:

"…it is more probable than not that Ms Gilewski was on the pedestrian crossing when the first train passed through. When this passed she may not have realised that a second train was coming and headed off to leave the crossing as soon as possible. It is also possible that when she realised that there was a second train she headed back to the place where she avoided the first train and became stuck in the train track."

The Public Advocate also submitted that *"Intersections"* are best at right angles that:

"Heatherton Road does not intersect with the railway line at right angles. A key finding of the Wheelchair Safety at Rail Level Crossings Taskforce was:

> *The risk of wheelchair wheels dropping into the flangeway gap and getting stuck appears to be increased if the track is at an angle other than 90 degrees to the rail track."*

On the issue of *"Safety bays"* the Advocate commented that Senior Constable Boldiston observed:

> *"the distance between the pedestrian barrier gate and the first metal rail, on either side of the crossing, was sufficient to accommodate a wheelchair without any danger of it being hit by a passing train".*

Importantly the Public Advocate concluded that *"there is no evidence that this possibility is drawn to the attention of pedestrians who are using the crossing. In the case of Chris Jones it appears that there was insufficient space and so pedestrians cannot be expected to rely on standard gaps at crossings."*

On the matter of *"Flange gap"* the Public Advocate remarked that the evidence of witnesses is that *"Ms Gilewski's wheelchair was stuck between the pedestrian gates on the Dandenong-bound train tracks."* That Mr Carmody states:

> *".....I could see her hand shaking, trying to work the driving stick of the wheelchair, in what looked like an effort to free herself from the path of the train. She had her back towards me and my thoughts were that she was stuck.*
>
> *Stephen Hudson, who could not see the wheels of the chair "noticed the person moving the joystick on the wheelchair, they appeared to be moving it back and forth"*
>
> *It is submitted that Ms Gilewski made every effort to get her chair to move from its position on the tracks. However the chair was not responding to the commands of the joystick.*
>
> *David Hough gives a similar interpretation of Ms Gilewski's behaviour: I then realised she may have been stuck on the railway line and couldn't get out. I could see the front wheels of the wheelchair moving, but the wheelchair wasn't going anywhere. My first impression was that the back wheels were stuck, but I couldn't be sure"*

On the issue of the condition of the wheelchair, the Public Advocate said:

> *"The other hypothesis as to why the wheelchair was not moving in response to the commands of the joystick is that there was a fault with the chair. Peter Lynton, pharmacist who knew Ms Gilewski, considered her chair to be "very old, it should not have been being used". He observed that the "joystick control was held on by black tape and one of the front wheels was a bit wobbly". However, Senior Sergeant Le Guier inspected the wheelchair and concluded that "Prior to and at the time of impact, this wheel chair as inspected, would have been classed as being serviceable. My inspection did not reveal any fault that could have caused or contributed to the collision"*

And that following the observations of Senior Constable Boldiston that:

> *"the bitumen surface, "where it runs parallel to the metal tracks, was in a state of disrepair. The edges of the bitumen, particularly around the eastern most and western most rails, were broken, bumpy and showing signs of degradation and disrepair. All edges of the bitumen, in the areas*

on and around the pedestrian crossing, showed signs of repairs at some time up to a distance, varying between 10 - 25 centimetres extending out from the rails. The bitumen in between the tracks had a corrugated appearance, with ruts which filled up with water when it rained".

The Advocate is of the view it is:

"more likely than not that Ms Gilewski's chair was stuck either in the broken bitumen or in the flange gap. From the test runs of Ms Tizard the flange gaps proved the ultimate snare after the chair was destabilised by the rough surface."

The Public Advocate, under the heading *"Warnings",* made the following observations:

Bells and whistles

There was no specific warning that there was a second train coming.

Signage & information - Train information

There is no evidence that there was available to pedestrians any information as to when trains were arriving at the crossing."

Thiess Infraco (Bayside) Pty. Ltd.

Counsel for Thiess Infraco submitted that the correct interpretation of the *"Sequence of events"* is as follows:

"Shortly after 8.30 am on 12 December 2001, Ms Gilewski somehow found herself on the track side of the closed pedestrian gate of the Heatherton Road level crossing. Ms Gilewski waited until the Melbourne bound train had passed before crossing the level crossing and, having reached safety, for reasons unknown, turned her wheelchair around and commenced to travel back across the crossing. On her return journey, one of the caster wheels of her wheelchair became trapped in the flangeway and she was unable to move any further. She was struck by a Dandenong bound train and killed instantly.

And that the cause of the incident is:

"the entrapment of the wheelchair wheel in the flangeway."

Counsel noted that there were a number of problems associated with small wheels and flangeways. Thiess suggested that relevant issues were:

"Ms Gilewski being positioned on the track side of the pedestrian gate after the barriers had closed. There is no evidence about how she came to be there, although the eyewitness Mr Carmody was under the impression that the deceased "had come from the grassy verge.

The state of repair of the asphalt along the flangeway on the pedestrian crossing. The informant, Senior Constable Boldiston, considered that "the edges of the bitumen, particularly

around the eastern most and western most rails, were broken, bumpy and showing signs of disrepair". He conceded in evidence however that he was not an expert in assessing rail flangeways. Importantly Pat McKay, a civil engineer employed by Thiess as its track engineer with 30 years experience in the rail industry inspected the scene on the day of the accident and found that the crossing surface was not in a state which would cause a problem for wheelchair users. A similar assessment was made by Thiess Infraco's track inspector Joe Munro during his regular three weekly inspection on 7 December 2001, merely days prior to the tragic accident. The video "re-enactment" prepared by Senior Constable Boldiston and shown at the inquest was made one month after the accident and does not accurately reflect its state of repair at the time of the accident. Neither does the video reflect the movements made by Ms Gilewski nor the route which she took across the crossing.

Ms Gilewski crossing in an area other than the dedicated pedestrian crossing. The eyewitness Mr Carmody stated that, according to his recollection the, deceased's wheelchair was at no time wholly on the pedestrian crossing. It appears that the deceased was crossing, not on the pedestrian crossing but on "no man's land", an area of asphalt between the pedestrian crossing and the road crossing which is not maintained."

In more detail, Counsel commented on a number of issues. On *"Wheels and Flangeways"* it was submitted that the *"problems associated with small wheels on motorised wheelchairs and other devices and the flangeway which houses the railway line are well known and described in detail in the Discussion Paper."* That there is:

"a system in place when a wheelchair user crosses a railway crossing. The system consists of the flangeway, the angle of the crossing, the surface of the crossing, the wheelchair and the operator."

Some of Thiess Infraco's submission helpfully focussed on the difficult technical problems flowing from a risk management approach to the issue. There are some parts of the submission that dealing directly with the Gilewski incident and others more dealing with the broader safety issues. Thiess commented on the *"Use of "No Man's Land"* and noted :

"Ms Gilewski was, by the account of Mr Carmody, on the asphalted area between the pedestrian crossing and the road crossing at the time she became stuck. This area is known as "no man's land" and it is an area which is not maintained as it is not intended to be used as part of the crossing. The area was asphalted merely to keep rubbish from accumulating in the space between the two maintained areas. It is hoped that the aforementioned yellow lines will discourage people from using this area. If however, people continue to use no man's land to cross, then consideration may be given to removing the asphalt therein."

It also commented on *"Maintenance of Crossing Surfaces"* as applied to the incident. Thiess commented on the *"Inspection system"* that applied prior to Ms Gilewski's death as follows:

"Joe Munro, the aforementioned Thiess track inspector, gave evidence at the inquest. He has 20 years experience in the rail industry and walks each section of track in his section every three weeks. Whilst his main priority when conducting his inspections is the rail

itself, nonetheless he also checks the condition of the various pedestrian crossings and reports any faults which he considers require attention. The quality of his weekly reports is testament to the professional manner in which he performs his duties and clearly establishes that a prime concern in his risk assessment of rail crossings is the ability of wheelchairs to safely cross.

As previously mentioned, the section of track on which Ms Gilewski was killed was inspected by Mr Munro on 7 December 2001. According to Mr Munro, at the time of his inspection he was aware that an uneven asphalt surface could make control of a wheelchair more difficult and furthermore he specifically turned his mind to wheelchair traffic when making his risk assessment. On 7 December he adjudged the crossing safe for "normal wheelchair use". Mr Munro explained in cross examination that by "normal wheelchair use" he meant that the wheelchair user would travel directly from one side of the crossing to the other, in a straight line on the crossing. Having since had the benefit of seeing the video re-enactment made by Senior Constable Boldiston and Ms Tizard, Mr Munro stated that he was surprised by the extent to which Ms Tizard varied her course to "correct the angle" of the crossing."

And on the *"Identification of Faults"* Thiess said:

"Track inspectors fill in weekly inspection statements which are then forwarded to the Track Master. The Track Master for the sector of rail in which Heatherton Road crossing falls is Terry Lyons, who gave evidence at the inquest. The weekly inspection statement (tendered) allow for detailed description of the problems identified and a grading of their priority. The Track Master then arranges for the program foreman to arrange the repairs necessary according to the priority given them. Track inspectors have a mobile phone which they can use to report faults which they consider require immediate attention.

In addition to the weekly inspection reports, service requests are generated when complaints are received from the public, either by Thiess Infraco directly or via M-Train, VicRoads or local councils. There are signs at each level crossing advertising Thiess Infraco's 1800 number to encourage people to telephone to report faults which they are concerned about. It is Thiess Infraco policy to consider any faults affecting safety of pedestrians and particularly wheelchair users as being of the highest priority."

That:

"Thiess Infraco has previously consulted with the Yooralla Society of Victoria ("Yooralla") in relation to concerns of wheelchair users (Discussion Paper part 3) and has met with representatives from other wheelchair groups to trial devices that reduce the risk of wheels becoming trapped in flangeways. Yooralla has, at the request of Thiess Infraco, provided a survey of the crossings which were of particular concern to wheelchair users. Of note, the Heatherton Road crossing was not included in the list provided by Yooralla prior to the accident herein."

On the use of *"Fault Identification Standards"* Thiess submitted:

> *"In terms of appropriate flangeway gaps Mr Munro properly applied an objective standard of between 50mm and 80mm in width.*
>
> *In terms of evenness of surface he did not have available to him any objective standards which he could consult in making a judgement regarding the safety of the crossing. When inspecting the crossing he would consider whether the surface was smooth enough to provide a safe surface for users of the pedestrian crossing, in particular wheelchair users. The fact that he was cognisant of the needs of wheelchair users is evidenced by the reference in his weekly reports to "impaired wheelchair access" at crossings on 27 November 2001 and 29 November 2001 (page 2 of 4 in the second part of the Thiess Infraco Incident Investigation). He acknowledged that his judgement was based on his subjective view of the appropriate smoothness of the surface of the crossing, in the absence of any objective standard against which to compare.*
>
> *The Public Transport Corporation has no documented standards dealing with the evenness of asphalt pavement. Thiess Infraco has recognised the need for standards and has developed a draft construction and maintenance standard which is currently being validated with a view to implementation across the M-Train Network. This would provide objective infrastructure standards and their measurement for use by Thiess Infraco field staff. A co-ordinated approach to standards across the whole rail network would assist in the delivery of consistent maintenance quality and Thiess Infraco urges that standards be developed as a matter of priority."*

It was Thiess Infraco's submission that *"the most effective way to address the problem is to address each aspect of the system."* As the maintenance contractor responsible for maintenance of the M-Train (formerly National Express) rail network the Company commented that it was *"most interested in measures to reduce the contribution of the flangeway and the crossing surface to problems faced by wheelchair users."* It noted that the *"angle of the crossing is an infrastructure issue which, although interacting with maintenance issues, falls within the purview of the Department of Infrastructure."*

The Department of Infrastructure

The Department submitted, in relation to the death of Ms. Gilewski, that:

> *"the findings to be made by the Coroner pursuant to s.19 of the Act should be consistent, with slight qualification, with the evidence given by Senior Constable Andrew Boldiston who investigated the death and gave evidence at the inquest.*
>
> *Although the evidence is overwhelming that the wheelchair in which Gilewski was seated was "stuck" on the railway line and that she was struck by the oncoming train, there is a conflict in the evidence as to where Gilewski was situated at the time of being struck by the train."*

And although the Senior Constable asserts:

> *"partly on eye witness accounts and partly on some physical evidence, that Gilewski was on the designated pedestrian crossing when struck by the train, the evidence of the eye witness Peter Carmody would suggest that Gilewski was stuck on the railway line either in the space between the designated pedestrian crossing and Heatherton Road, Noble Park or indeed on the very edge of Heatherton Road, Noble Park."*

That:

> *"This conflict is not easy to resolve as the evidence of Carmody was impressive and he would have had an excellent view as to the immediate circumstances surrounding the collision. On balance, the Department submits that the evidence of Carmody is to be preferred."*

The Department notes that there is also conflict in the evidence between the opinion of Senior Constable Boldiston and various witnesses called by Thiess Infraco as to the state of the designated railway pedestrian crossing at the date of the collision. And that:

> *"Boldiston asserts that the pedestrian crossing was in a state of degradation and disrepair, the witnesses from Thiess assert that such crossing was in a reasonable state for normal wheelchair access.*
>
> *The resolution of this conflict of evidence is again difficult when one considers the expertise and experience of those called on behalf of Thiess and the evidence of Senior Constable Boldiston supported by various photographs.*
>
> *The resolution of this factual issue is perhaps overshadowed by the clear recognition that significant safety issues arise when disabled people, and in particular, wheelchair bound people traverse railway pedestrian crossings.*
>
> *Although well appreciated by the Department, this issue was highlighted by the showing of the video which depicted the wheels of a wheelchair becoming caught in the so called flange gap adjacent to the railway track at the Heatherton Road crossing."*

Conclusion

At approximately 8.35 am on 12th December, Ms. Gilewski, aged 41, who is disabled and uses a wheelchair, was crossing the Heatherton Road Railway Crossing on her motorised wheelchair when the wheels became stuck in a groove in the tracks and she was struck by a Dandenong bound train.

Immediately prior to having been hit Ms. Gilewski had passed behind the Dandenong-City bound train, reached the opposing closed pedestrian gate, and was in the process of returning from the way she had come when she was struck by the other train.

It appears that Ms. Gilewski may have entered the area of the tracks just before the pedestrian gates closed. After the first train passed she moved to the other side and was still faced with closed pedestrian gates. Gilewski then turned to retrace her route probably not realising that another train was coming. The wheels of her wheelchair were stuck in a gap in the tracks and she was struck by the second train. The fact that the wheelchair wheels became stuck is an indication that improvements in the maintenance of the flange gap area needs to be further addressed by the responsible agency or authority.

The angle of the pedestrian crossing to the rail tracks may be an issue in this case. Where the angle is greater than 90 degrees (as is the case here) the risk of the wheelchair wheels becoming stuck is increased.

It appears that Ms. Gilewski may not have been in the pedestrian area at some time during the lead up to the incident. However, when she was struck by the train it is likely that she was in or close to the pedestrian crossing area.

COMMENTS AND RECOMMENDATIONS

The safety problems as identified in the inquests

Clearly, there are problems associated with the design of some wheelchairs and how design of units effect safety in the negotiation of infrastructure such as pedestrian railway crossings. Where practicable, the infrastructure needs to be modified to allow for safe negotiation by wheelchair users of these crossings (including grade separation). Standards that take into account the needs of the disabled (in this case wheelchair users) should be developed that dealing with issues such as the safe design and layout of crossings, maintenance, training of designers and engineers (in safe design issues), maintenance staff (in problem identification), incident reporting and audit procedures.

No doubt there will continue to be many wheelchairs in use that are not fully designed to cope with all of the circumstances associated with being stuck in the rail tracks of crossings. If new wheelchairs, as is preferable, are designed to a standard that adequately allows for all possible entrapment incidents associated with railway tracks there will still be a need for modification of existing units. Modification of existing units may not be practicable for a variety of reasons including; expense of modification, frequency of use associated with railway crossings, etc. However, ideally modification of existing units should be still pursued.

The extent of the potential problem and difficulty for the management of risk can be gauged by the following figures - in Victoria there are 709 pedestrian rail crossings at 533 locations. 471 of these crossings are in the metropolitan area and 8 are on the light rail system. In the metropolitan area there are 183 passive and 288 active protected crossings. In the country there are 211 passive and 19 active crossings.

There are a number of issues associated with pedestrian crossings such as the design of the safety and escape areas near railway tracks. Potentially the understanding of the clearance needed for trains (as there is a considerable overhang of the train structure beyond the actual width of the tracks) is a problem for the disabled and able-bodied alike.

During the inquests and other investigations it has been identified that wheelchair user reaction to a situation of danger created as a train approaches and/or immediately after the warning bells and lights commence operation may be such as to exacerbate problems or, alternatively, not enable an individual to escape the situation in time.

Standardised incident (and near miss) investigation reporting and data collection systems are also an issue. For example, there was some evidence that a wheelchair operator had been stuck in the rails on the Heatherton Road crossing prior to the incident in which Ms. Gilewski was killed. That wheelchair operator had to be helped by a nearby pedestrian. This incident had been reported to Thiess by the pedestrian.

Angled crossings create an added problem for wheelchair users in that wheels are more easily turned and caught in any gaps. Warning of the second train (after the first train has passed through the crossing) is an issue in the Gilewski incident. It appears that the crossing train problem with pedestrian deaths is common with people being inpatient and going around the escape area (or being unaware of the second train). In this regard there have been previous coronial findings (and recommendations) spanning a number of years.[2]

The inquests also identified the importance of regular maintenance inspections by trained personnel who are well aware of, and sensitive to, the equipment difficulties facing wheelchair users. Regular maintenance of railway crossings is essential to ensure that flange gaps are minimal and are safe for use by wheelchair users. Along with regular maintenance there needs to be a system of structured audit to ensure the system is appropriately identifying and addressing safety issues.

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[2] See for example an article in Selby H. (Editor) *"Inquest Handbook",* Federation Press, 1998, pp. 44-45.

Wheelchair access to railway pedestrian crossings and safety - Introduction

Since these deaths there has been a considerable amount of work undertaken by government, the relevant rail agencies and members of the community who use wheelchairs. The work has resulted in a significant number of reviews and reports some of which include a number of recommendations. Briefly, the reviews/reports (governmental or commercial) are:

- Wheelchair Safety at Rail Level Crossings Taskforce, Report to the Minister for Transport, March 2002 (Victorian Department of Infrastructure);
- Technical Services Report - Discussion Paper on Pedestrian Crossings, March 2002 (Thiess Infraco);
- Technical Services Report - Wheelchair Incident at Heatherton Road Level Crossing on 12 December 2001, January 2002 (Thiess Infraco). This report is mistakenly dated January 2001;
- Wheelchair safety at Rail Level Crossings - Review of Taskforce Submissions Working Paper, June 2003 (Sinclair Knight Merz);
- Disability Access at Rail Crossings - Final Report, June 2003 (Sinclair Knight Merz);
- Wheelchair safety at Rail Level Crossings - International Review Working Paper, June 2003 (Sinclair Knight Merz); and
- Rail Crossing Disability Access Toolkit - Final, June 2003 (Sinclair Knight Merz).
- Report by Harold Lubansky, Chief Operating Officer, Commercial Services, Scope (Vic) Ltd.

The various reports deal with a range of issues including the difficulty that persons using wheel chairs have in negotiating surfaces on crossings, wheels getting stuck in the gap between tracks and the surface, the design of wheelchairs, maintenance and inspection issues, the need to develop standards, etc.

As indicated, there are a range of recommendations, which are apparently being dealt with on a State and National level. This work needs to be ongoing, co-ordinated with all agencies and user groups working together to ensure that a process of continual improvement continues. There are a range of practical improvements that need to be implemented.

In context the Public Advocate says:

> *"The passage of a train across a pedestrian walkway is self-evidently dangerous for pedestrians and wheelchair users due to the imbalance of power between a train and a human being. It is acknowledged that there are risks involved in any activity. We instinctively assess and balance these risks and generally act in a manner which we anticipate will keep us safe.*

The Australian community has accepted and enacted in legislation through the Commonwealth Disability Discrimination Act 1992 and the Victorian Equal Opportunity Act 1995 the rights of people with a disability to access the community and to move through the built environment with the same level of safety which would pertain to a person without a disability. As a community we make decisions about what we are prepared to do to minimise or remove the risks at crossings, based on resources, competing priorities and political will. Whatever solutions are adopted to minimise the risks at railway level crossings, they cannot, legally or morally, result in a person with a disability being at greater risk than any other member of the community."

The perspective of one of the infrastructure operators - Thiess Infraco

Thiess made a number of points in its submission to the Coroner. Some of the discussion drew attention to the difficulties facing the work on the management of risk. These difficulties are set out below.

Thiess did point out that the question of separation of crossings by means of bridges or subways is a matter for the government agency. It noted that separation is addressed in the Taskforce Report and identified as the *"highest grade"* solution to the problems associated with wheelchairs at rail crossings. That

"The question of separation is outside the sphere of responsibility of Thiess Infraco as maintenance contractor and will not form part of Thiess Infraco's submissions. Both the effectiveness and the costs considerations of separation are obvious."

Thiess noted that, on the issue of *"Filling the flangeway"* that no *"effective means of eliminating the flangeway gap has been developed, despite various methods being investigated by Thiess Infraco."* The Company submitted that:

"Victorian government's Wheelchair Safety at Level Crossings Taskforce ("the Taskforce") commissioned a report by Sinclair Knight Merz ("the Taskforce Report") which was finalised in June 2003 and was submitted to the inquest. The Taskforce Report addresses a number of potential engineering solutions to the problem of the flangeway gap and recommends two in particular, although the details of those solutions are not provided due to intellectual property concerns."

On the issue of *"Flangeway edges and Crossing Surface",* the Company commented:

"In the absence of a viable means of filling the flangeway, Thiess Infraco has investigated and trialled a number of methods of construction which would maintain an even flangeway depth and width as well as provide a clean, uniform edge to the flangeway gap. The aim of these trials was twofold. To prevent the flangeway widening over time with the passage of trains, as occurs with asphalt and secondly to minimise unevenness in the pedestrian crossing surface which may hinder the passage of wheelchairs.

Asphalt has traditionally been used for creating the surface of pedestrian level crossings as it provides a level of elasticity required for the dynamic environment of a railway line and is relatively inexpensive. The problems associated with asphalt flangeway edges are addressed in section 4.4 of the Discussion Paper.

Thiess Infraco has trialled various alternative surface materials with the results of those trials outlined in section 6 of the Discussion Paper. Thiess Infraco has been using Vibtech rubber strips since April 2001 as a maintenance measure. These rubber strips are installed along the flangeway at the time of asphalt repairs and protect the asphalt from rail movement pressure. Positive feedback was received from wheelchair users about the first of these installations at Springvale Station crossing and the strips have since been used at other crossings. The rubber strips successfully maintain a uniform flangeway edge.

New crossings are constructed using standard sized Pedestrail rubber panels. These are at present only used at isolated crossings which are at 90 degrees as the dimensions of the panels makes them directly impractical for use at more sharply angled crossings. The product is not used at crossings which are adjacent to road crossings as the interface between the Pedestrail panels and asphalt is problematic.

Another product called Foamshield is an adhesive foam strip which attaches to the rail itself to protect the asphalt from damage from rail movement. This has been used for many years by Thiess Infraco as a means of protecting asphalt edging."

Thiess noted that an estimate of the costs involved in converting existing crossings on the M-Train network to rubber panels is provided in the Discussion Paper.

The Thiess submission also covered a number of other infrastructure issues. Under the heading "*Operational"* the issue of increased crossing time was discussed:

"At present, the audible warning of a train arriving begins 7 seconds before the gates begin to close. The gates take about 5 seconds to close and then there is 13 seconds of waiting time. A one-way emergency gate is available to slower pedestrians who complete their crossing after the gates have closed.

It was raised at the inquest that the warning system may provide insufficient time for wheelchair pedestrians or other mobility impaired people to clear the crossing.
There are dangers inherent in providing more warning time if it increases the waiting time of pedestrians as this is likely to encourage more impatient users to use the emergency exit gate to cross against the warning signals. Increasing the length of the aural warning prior to the closing of the gates only would however allow very slow pedestrians more time to cross before the emergency gate closes. This option would not delay the progress of more confident pedestrians.

The critical factor in the success or otherwise of this measure will be education of the disabled population. This is addressed in the section dealing with education and "complete your crossing" below.

An increase in warning time will be an expensive undertaking involving the relocation of train detectors on the track and the installation of delay mechanism circuitry."

On the issue of *"Providing a Line of Safety on the Track Side of the Barrier"* Thiess said:

"There was discussion during the inquest about the effect of the overhang of a train on the amount of safe space on the track side of a pedestrian barrier. It was said that, if a person somehow became stranded on the track side of the barriers, it would be useful for them to know where the safest place to wait was. It is assumed that the kind of demarcation suggested is a line indicating the extent of the train overhang similar to the "WAIT HERE" marking at passively protected pedestrian crossings. Thiess Infraco strongly advises against implementation of this suggestion.

A train undercarriage overhangs the running edge of the rail by approximately 0.65m up to a height of 1.12m. Above 1.2 metres, the train body overhangs the running edge of the rail by 0.725 m. Fences associated with pedestrian gate enclosures and boom barrier enclosures may be as close as 1.2m from the running edge of the rail. The clearance is, therefore, as little as 0.475m in places. Such a space could only be used by standing, able bodied persons who appreciate the geometry of their situation, who know that they have to flatten themselves against the fence, who have no loose clothing and who are prepared for a blast of air. In other words, only experienced railway personnel would be able to use this area safely.

To advertise this area as safe would entice users of the crossing to use this area, assuming it was safe. This is highly undesirable. It is far preferable to impress upon pedestrians that the safest option available to them is to "complete their crossing" (see education section below).

To mark the area near the gate (i.e. where the gate sweeps from the open position to the closed position) as safe would similarly be dangerous as someone in a wheelchair sheltering in that area risks being knocked over or jammed by the gate when it opens after the train has passed.

Another reason that marking a "refuge" on the track side of the barriers is not advisable is that it may encourage wheelchair users to either proceed backwards towards the perceived "safe area" once they have begun their crossing or to turn their wheelchair around and return to the other side. Travelling backwards has obvious safety concerns in terms of reduced visibility and undertaking a turning manoeuvre anywhere near a flangeway is a very risky move for a wheelchair to make, as it greatly increases the chance of a wheel becoming trapped in the flangeway.

In Thiess Infraco's submission there is no safe area on the inside of the barriers and any markings which suggest otherwise would be misleading and dangerous.

And on *"Creating a New Safety Area on the Track Side of the Barriers"* Thiess added the comment:

"No truly "safe area" presently exists on the track side of the barriers at a crossing. Any safe area would have to be created by either moving the pedestrian gate and enclosure back some metres or by providing a safe area adjacent to the gate and enclosure.

If any such area were to be provided, it should be considered an area "of last resort" rather than a safe area. It is always safer to encourage people to complete their crossing than to encourage people to stay on the track side of the barriers when a train is passing. If the message is given that the area is safe, rather than an area of absolute last resort, this could encourage people to place themselves on the track side of the barriers when the barriers are closed. A little knowledge can be a dangerous thing in this regard. If people are given encouragement to stay on the track side of the barriers when a train is approaching then the potential for people to be caught out by second (or even third) trains is substantially increased.

Finally, to provide a "safe area" on the track side of the barriers would give the message that "I will be safe if I go to that area". This may have the effect of distracting wheelchair users from the dangers posed by turning their wheelchairs on the crossing by focussing their attention on return to the "safe area". In Thiess Infraco's submissions, the creation of a safe area on the track side of the barriers is not advisable."

Thiess noted that on *"Line marking of Pedestrian Crossings"* its practice is now to:

"...paint all pedestrian crossings with two yellow lines 1300mm apart. This allows 150mm on either side of the marked path to the edge of the pedestrian crossing pavement. These lines are to encourage users of the crossing to follow a direct line from the gate on one side of the crossing to the gate on the opposite side…."

On the *"Use of "No Man's Land",* as already discussed, it said:

"Ms Gilewski was, by the account of Mr Carmody, on the asphalted area between the pedestrian crossing and the road crossing at the time she became stuck. This area is known as "no man's land" and it is an area which is not maintained as it is not intended to be used as part of the crossing. The area was asphalted merely to keep rubbish from accumulating in the space between the two maintained areas. It is hoped that the aforementioned yellow lines will discourage people from using this area. If however, people continue to use no man's land to cross, then consideration may be given to removing the asphalt therein."

Thiess commented under the heading *"Maintenance"* that there are weekly inspections (and statements), repairs are arranged in accordance with a priority given by the *"Track Master"* and, that in addition to the weekly inspection reports:

> *"service requests are generated when complaints are received from the public, either by Thiess Infraco directly or via M-Train, VicRoads or local councils. There are signs at each level crossing advertising Thiess Infraco's 1800 number to encourage people to telephone to report faults which they are concerned about. It is Thiess Infraco policy to consider any faults affecting safety of pedestrians and particularly wheelchair users as being of the highest priority."*

Thiess noted that it had previously discussed the issue with:

> *"the Yooralla Society of Victoria ("Yooralla") in relation to concerns of wheelchair users (Discussion Paper part 3) and has met with representatives from other wheelchair groups to trial devices that reduce the risk of wheels becoming trapped in flangeways. Yooralla has, at the request of Thiess Infraco, provided a survey of the crossings which were of particular concern to wheelchair users. Of note, the Heatherton Road crossing was not included in the list provided by Yooralla prior to the accident herein."*

On *"Training of Maintenance/Inspection Staff"* Thiess commented *"there has been no infrastructure standard from which training could be developed…"* and that there *"has been no training relating to rail infrastructure maintenance provided by government since the franchising of the rail network in 1999 and since that time Thiess Infraco has relied on the existing skills and training of their personnel. Few new maintenance personnel have been recruited in that time."*

It said that in relation to training Thiess' needs have been met internally with on the job and in-house training. Apparently, in July 2003, Thiess received funding approval from the Minister for Public Transport to refine or develop railway industry competency standards. It says that:

> *"This project will allow for the development of training and competency assessment which will be applied across the whole rail network. It is hoped that this project will ensure the consistency and quality of rail maintenance. Modules relating to pavement standards in general and pedestrian crossings in particular could be part of this project. "*

And in the interim, it is recognised:

> *"education of track inspectors about the effect of sharply angled crossings on wheelchair use would be beneficial. The screening of a video similar to that of the "re-enactment" by Senior Constable Boldiston and Ms Tizard would be a useful tool for this purpose. In particular, the video would impress on maintenance personnel that wheelchair users do not necessarily cross the crossing in the way anticipated, but may try to correct the sharp angle by zig-zagging or weaving. In light of that behaviour and the already increased*

angle of the flangeway, the state of repair of the crossing surface at angled crossings takes on heightened importance. It is not, however, suggested that there should be a different objective standard for the surface of angled crossings."

Thiess noted that there should be streamlining of the *"Maintenance Complaints Procedure"* to:

"ensure that all public complaints that are made to other agencies, such as VicRoads, local councils and rail are dealt with in a coherent way to ensure consistent and prompt response to complaints made by users of crossings."

It also raised the issue of *"User Education"* and under the heading *"Complete Your Crossing Education"* suggested:

"The basic premise of design of level crossings is that all users who have commenced their crossing when the warning tone sounds will, within the time provided by the warning tone, successfully complete their crossing even if this means that they will need to exit via the emergency gate."

There may be some users who *"become alarmed by the onset of the audible warning tone and lose control of their movements or of their wheelchairs to the extent that they become stuck on the crossing or their crossing is delayed."* Or they *"do not realise that generally sufficient time is available for them to complete their crossing.*" They may not be aware *"there is an emergency exit available on the destination side of the crossing once the barriers have closed."* That they are not sufficiently aware of the danger of attempting a turning manoeuvre on the crossing or *"think that it is safer to return to the side of the crossing from which they have come."*

Thiess made the point that:

"Education is vital to overcoming some of the problems associated with the use of crossings by wheelchair users (and other disabled pedestrians). This education should, for more disabled users, be carried out on site at crossings to allow users to become aware of their own responses to stressful situations. This education should involve training of wheelchair users in the best way of steering their wheelchairs over crossings (ie. avoiding changes of direction and turning). A strong emphasis should be placed on the "complete your crossing" message."

The perspective of the Department of Infrastructure

The Department indicated its commitment to improve the *"standards and safety of railway pedestrian crossings and in particular, the use of such crossings by all members of the public, including wheelchair bound people and people with other disabilities."*

After the incidents a Task Force was established which reported in April 2002 with 25 recommendations (all were adopted by the Government). A $100,000 research grant has be

made available *"to investigate various engineering issues following on from various submissions made to the Task Force in relation to such issues as flange gap safety, wheelchair design etc."* This funding was given to Sinclair Knight Merz ("SKM") which reported in July 2003 and the reports have been made available to the Coroner.

The Action Plan set out in the *"Final Report"* of Sinclair Knight Merz has been adopted by the Government. The Department's submission noted the work that was being undertaken following the deaths and the various reviews. The work appears to be extensive and ongoing. It is referred to in **Appendix A** to this finding.

The wheelchair users' perspective

The wheelchair users perspective was covered in a number of submissions (for example the submissions of the Public Advocate). A submission was also provided by the *"Safe Transport Action Group*" (STAG). Evidently this group *"has been working on level crossing safety for mobility aid users since its inception."* STAG stated that it is *"the only advocacy agency for people with disabilities working on this issue in Australia."* It said that the purpose of writing a submission *"is to provide the Coroner's Office with supporting information about the public health and safety issues facing mobility aid users that have arisen following the deaths of Mr. Chris Jones and Irene Gallewski."*

This material may be useful for relevant government and private agencies to consider in the light of the events being investigated. Also, whilst some of the historical information is potentially useful by way of background it may be too general for the specific coronial issues (cause and circumstance) being considered in Jones and/or Gilewski. However, as far as this material is useful for the purpose of formulating coronial recommendations, it will be considered.

Under the heading *"HISTORICAL/SOCIOLOGICAL PERSPECTIVE"* the STAG submission says:

> *"The construction of Melbourne's rail network in the 1880's occurred as institutions for the `feeble', `mentally handicapped' and `disabled' were been built across Melbourne. As access to Melbourne was been opened via the construction of its rail network, people with disabilities were been incarcerated in institutions such as Janefield and Kew Cottages. People with disabilities were not considered as Melbourne's rail system was been designed and built. For many mobility aid users trying to access public transport not much has changed over the past 100 years.*
>
> *Community attitudes to people with disabilities have changed considerably over the past 100 years. Victorian Government policies for people with disabilities now emphasise deinstitutionalisation and community integration. Yet despite widespread acceptance of these policies, Victoria is only beginning to grasp the level of complexity involved in ensuring its public transport services and associated infrastructure is accessible to people with disabilities. It was this inaccessible environment that Mr. Chris Jones was working to change before he was killed in October 2001.*

By the late 1990's Melbourne's publicly owned rail network was in the process of privatisation. Significant hallmarks of Victoria's public transport system (i.e. staff at every station, conductors on trams, staff at level crossings, regular training of trackwalkers) that had made Melbourne's train and tram network safe and accessible, were removed so as to ensure a more `efficient' and `world class' public transport system. Despite vocal protests from advocacy agencies, the Victorian Government again locked mobility aid users and people with disabilities out of any involvement in the privatisation of Victoria's public transport services on the grounds of `commercial confidentiality'.

The State Government's failure to provide a `safe path of travel' for Mr. Jones and Ms. Gallewski highlights not only the poor design and maintenance of pedestrian level crossings throughout Victoria, but inherent problems with the privatisation of Victoria's public transport system. Of particular concern to Safe Transport Action Group have been constant attempts by the State Government and Department of Infrastructure to define this as a `wheelchair users problem'.

Before you can find a solution to a problem, there must first be agreement as to what the problem is. How a problem is defined, in turn determines what sort of solution will be sought, and who is seen as been responsible for fixing it. In the context of pedestrian level crossing safety, the issue of problem definition has been most evidenced in debates about the `flange gap problem'. This debate inevitably focuses on the incompatibility of wheelchairs and train tracks, the expense involved in changing Victoria's built environment as opposed to the number of mobility aid users in Victoria, the favourability of changing wheelchair designs and the unresolvable nature of this `problem'. We believe this debate tries to shift the focus of responsibility onto people with disabilities, by arguing wheelchair users should bear the responsibility for this issue by altering their wheelchairs to suit the environment of level crossings. This argument does not take into account that wheelchairs are designed for a person's whole life not just at level crossings. There is also an implicit `blame the victim' approach implicit in this argument, that ignores the cost of disability, and an apparent unwillingness by the State of Victoria to accept its moral, financial and legal responsibility to make public transport services accessible to everyone all, regardless of their ability.

Victoria' public transport infrastructure has been inaccessible for people with disabilities for far to long. The passage last year of the already outdated Disability Standards for Accessible Public Transport as part of the 1992 Disability Discrimination Act, means that it will be at least thirty-two years before people with disabilities have the same access to public transport, that most Victorian's take for granted today. We believe that an immediate programme of grade separation of level crossings utilising Universal Design Principles is the safest and most efficient solution to the lack of safe and accessible pedestrian level crossings."

It also suggests a set of seven *"Universal Design Principles"* which it says *"have been developed by the Institute of Engineers Australia"* and it believes these principles *"need to*

be adopted across Melbourne's Public Transport System." According to STAG these principles are as follows:

1. *Equitable Use: The design is useful and marketable to people with diverse abilities;*
2. *Flexible Use: A wide range of individual preferences and abilities should be accommodated;*
3. *Simple and Intuitive Use: The user does not need special experience. knowledge, language skills or close concentration;*
4. *Perceptible Information: Necessary information is available to the user regardless of ambient conditions of the user's sensory abilities;*
5. *Tolerance for Error - Hazards and adverse consequences of accidental or unintentional actions are minimised;*
6. *Low Physical Effort - The design promotes efficiency and comfort and minimises fatigue; and*
7. *Size and Space for Approach and Use: Appropriate size and space is provided for approach, reach, manipulation and use regardless of user's body, size or mobility.*

It is interesting to note that these seven Universal Design Principles were not developed by the Institute of Engineers Australia but by NC State University in the United States (The Centre for Universal Design) in 1997. The principles were developed by a number of advocates of universal design with funding provided by the National Institute on Disability and Rehabilitation Research, US Department of Education.

Conclusion - the need to learn from incidents and incorporate safe design

There have been a number of extensive reviews into the issue of wheelchair safety at railway level crossings. Those reviews have suggested a number of solutions, which are apparently being dealt with on a State and National level. It is noted that some of the solutions have cost difficulties (grade separation) or with implementation create opposing safety and risk management problems (marking the area where the train overhangs). However, it is important that this work continues and also that those with disabilities are well represented on various working parties, focus groups and in committees dealing with high level decision making.

Ideally, safe design principles should be adopted for all products used in our society, whether that be in the built environment or infrastructure (such as railway crossings) or product used (such as a wheelchair). **Product**[3] **should take into account the potential for human error and, as far as is practicable, protect against the worst consequences of known events or potential hazards** (the potential for a wheelchair user to get stuck on a rail line with an approaching train, inability to respond in sufficient time to an emergency [due to the disability] or lack of adequate and appropriate clearways for wheelchair users are potential hazards and the consequences are now, **known events**).

[3] "Product"in this sense is defined broadly to include infrastructure (railway tracks and crossings) as well as the more traditional understanding of product, such as a wheelchair.

Unfortunately, coronial records are already peppered with countless examples of product that is not protective of known consequences of human error. In many areas our society is now starting to recognise that designers, engineers and manufacturers should be aware, when designing and manufacturing product, of the need to learn from past events and protect against the consequences of human error. We can already see examples on the roads (protective barriers, occupant protection in vehicles, etc.). Agencies that are responsible for establishing and maintaining infrastructure (whether they be commercial enterprises or government departments) need to be well aware of the duty of care and the need to mandate more protective systems. This obviously applies to agencies managing the railways.

It was effectively submitted by STAG and also by Scope (formerly the Spastic Society of Victoria) that the Universal Design Principles should be adopted. When discussing the death of Mr. Jones, Scope said that it:

> *"provided accommodation support for Chris for a number of years up to the day he died. It is one of a number of disability services that supports people with disabilities to lead active lives as valued members of our community."*

And Scope submitted that:

> *"Chris would not have died if level crossings were developed using universal design principles that take into account the reasonable needs of all Australian citizens.*
>
> *People with disabilities experience discrimination in myriad forms. Perhaps the most insidious is the way in which important infrastructure is typically designed so that it is either impossible, or at least very difficult, for people with disabilities to use that infrastructure. Their needs are simply excluded from design considerations. This is acknowledged through the creation of discrimination legislation such as the Disability Discrimination Act (C'wlth 1992). The ongoing creation of Standards, with timelines to meet particular targets, is a recognition that basic physical infrastructure is not adequate.*
>
> *Lack of access denies people with disabilities basic rights our society expects for all Australian citizens. To deny access is to deny full citizenship. The case for citizenship by people with disabilities should not need to be made, yet every day people with disabilities find themselves designed out of their community, or exposed to unreasonable risk because of poor design of the built environment. Since the International Year for Disabled People in 1981 Federal and State Governments continue to develop legislation, plans and service systems premised on achieving full citizenship for people with disabilities. Their success is significantly impeded by the shortcomings of the built environment.*
>
> *In the case of Chris Jones good design principles for level crossings would have meant that Chris would be alive today. Significant work by the Department of Infrastructure to upgrade level crossings is an acknowledgement of the poor condition of many crossings, but much more work needs to be done to ensure they are designed for all users. We are*

aware that other submissions have been made for this inquest that outline those design requirements. Scope fully supports the design of level crossings that allow for safe crossing and that enable users to reach safety should they still be on the crossing when gates close. The fact that the design and degree of upkeep of infrastructure may pose a threat to the safety of people with disabilities is totally unacceptable.

Scope acknowledges that a transition to universal design principles may take time. Thus Government will have to provide a range of appropriate temporary solutions that ensure safe community access in the interim or be guilty of entrenching discrimination. The responsibility rests with the people who design and maintain infrastructure. They are charged with the responsibility to design and maintain our community for ***all*** *citizens."*

The incidents and deaths on pedestrian railway crossings involving users of wheelchairs point to lessons for all those who are involved in managing the duty of care in this area of infrastructure.

It is hard to argue against the ideal as is put forward by STAG - a need for grade separation for all current and new level crossings. However, this may not be economically feasible for many current crossings and some new crossings.

Without grade separation to address the problem of wheelchair access (which may in itself create some additional security or access problems for wheelchair users) in an environment that has an historical background and was not originally designed towards modern hazard reduction thinking (such as a railway pedestrian crossing) there is a need for a multi-layered approach to tackle the potential hazard.

Any new approach may include the safe design and construction of new crossings (including grade separation), modification of existing crossings in accordance with a set of agreed safety design standards, regular pro-active maintenance to a set and universal standard, training of railways maintenance engineers and other staff in hazard identification (again to a set and universal standard), targeted community awareness and education, and a pro-active and uniform approach to regular and continuing audit (in order to maximise the potential for the early identification of problems in the system). Finally, the issue of improvements in the safe design of wheelchairs is essential (provided any new design is easy to use and economical).

In the event that engineering solutions (to provide a fail-safe system) are not achievable then education and training along with adequate warning systems are other steps lower down in the process of managing the risk. Sensible risk management would incorporate these solutions into an overall program to reduce the incidents on pedestrian railway level crossings.

In summary, the **Coroner's recommendations** are that there needs to be consideration in the existing and ongoing work on wheelchair safety at pedestrian railway crossings to the following:

(a) design and engineering solutions that follow the seven ***"Universal Design Principles."***

This would include grade separation in appropriate existing crossings and for future crossings. Also, with crossing where separation is not practicable the need to identify improvements in flange gap design is imperative (ongoing research in this area is essential).

Consideration of difficulties with angled crossings, the issue of protective emergency areas within the crossing and further work on the danger of the overhang of trains are important risk management issues.

(b) involvement of the disabled community at all levels of work on the issue of safety at pedestrian railway crossings is vital.

(c) development of a universal maintenance and audit standard for the identification and repair of safety problems (likely to effect wheelchair users) associated with the surface surrounding pedestrian railway crossings. A training standard is also essential to ensure that maintenance problems are properly identified at an early stage and the work is completed to the required standard (in this regard ongoing involvement of wheelchair users is imperative).

(d) the development of a standardised incident and near miss reporting and investigation system. The data collection systems throughout government and private agencies on incidents should be common and designed to facilitate timely and efficient exchange.

(e) improvement in the design of wheelchairs (taking into account these cases and the entrapment issues) is important. Standards should also be developed in this area.

(f) education programs for wheelchair users on pedestrian railway crossings and relevant hazards are important (other areas of transport infrastructure may well be included in packages).

(g) the problem of the second train and consideration of the need to develop an additional warning system (this is also a problem for vehicles and railway crossings).

(h) research on coronial findings in the area of pedestrian railway crossing deaths should be considered by the Department of Infrastructure.

It is important that the road authorities such as Vic Roads and the various local councils work with the rail agencies in order to further enhance safety at pedestrian railway crossings. No doubt a multi-agency (public and private) and innovative approach to the risk management issues presented by these tragic deaths will improve the chances of a safer outcome.

Graeme Johnstone
State Coroner
2nd April 2004

Mr. James Gray for Margaret Jones (sister of Mr. Jones) and Disability Justice Advocacy,
Mr. John Olle for Thiess Infraco,
Mr. Jim Parrish for the Department of Infrastructure,
Mr. Phillip Grano for the Public Advocate, and
Senior Constable Ash Rogers, Assisting the Coroner.

APPENDIX A

Department of Infrastructure - work detail

This Appendix sets out the detail (as disclosed in the Department's Submission to the Coroner's Inquest) of some of the work being undertaken by the Department of Infrastructure on the issue of wheelchair user safety at pedestrian railway level crossings.

The Submission (in part) was as follows:

"After the Wheelchair Safety Task Force released its 25 recommendations in April 2002, the Government immediately attended to the following -

(i) The introduction in May 2002 of a 1800 number for reporting faults at c crossings;

(ii) The allocation of $12.5 million in the State Budget for railway safety critical works over 4 years of which $8.5 million is for upgrades for safety protection at over 40 crossings (as at 2 December 2002 nine crossing upgrades tendered and awarded, as at 14 May 2003, a further 13 crossing upgrades tendered);

(iii) The creation of the Pedestrian Crossing Protection Upgrade Program (headed by Mr. Spicer) to implement the 25 recommendations made by the Wheelchair Safety Task Force. The major committee constituting the program has met approximately every month since the creation of the program and liaises with all interested parties and in particular, incorporates disability access sub-committees with representatives from disability groups.

The program has implemented 21 of the recommendations and is in the process of implementing the balance of the recommendations but has been

awaiting the reports from SKM and any further recommendations flowing from this Coronial Inquest.

In particular, the Upgrade Program has been involved in developing new disability access design and maintenance standards for pedestrian crossings and, as in many other areas of this general issue, Victoria leads Australia in seeking to implement appropriate railway at-grade pedestrian crossing design standards that comply with the Disability Transport Standards for Accessible Public Transport 2002 (Commonwealth).

Much work has been undertaken over the last year in upgrading various pedestrian crossings and tenders are ongoing to improve further crossing safety throughout the metropolitan and country areas of the Victorian rail network.

(c) Further, the Department has been very active in participating in the development of a National Railway Crossing Risk Assessment Matrix Data Base with the Australian Level Crossing Assessment Model Group. Such a data base is a particularly sophisticated and pro-active risk assessment methodology to identify and mitigate all of the risks associated with at-grade railway crossings. This risk assessment matrix has been endorsed by the Australian Transport Council (ATC) for adoption Nationally and the Department is about to let a Tender for the adoption of the risk methodology assessment matrix in Victoria. The Department is also pursuing ATC endorsement for the development of a National Railway Crossing Accident Investigation Data Base that will be linked to the rail crossing inventory risk assessment data base, to greatly increase the opportunities for understanding and researching risk factors associated with railway at-grade crossing accidents, to monitor progress and to further assess risk factors in a constantly changing environment.

(d) In October 2002, the Victorian State Cabinet approved an amendment to the Victorian Planning Scheme by adding clause 18.01-2 which reads- -

"Design of transport routes must provide for grade separation at railway crossings except with the approval of the Minister for Transport"

(e) Importantly, the Department is in the process of redrafting the Refranchising Agreements which will incorporate amongst other things, a requirement that all 471 metropolitan railway crossings and 9 light rail pedestrian crossings be -

(i) Upgraded to the new Pedestrian Crossing Disability Access Standards at a rate of 32 per annum, at an estimated cost of $9 million over 15 years; and

(ii) To develop stronger pedestrian crossing maintenance and disability access monitoring systems;

(iii) For all supervisory and infrastructure maintenance staff to be trained in the new pedestrian crossing design and maintenance standards, and

(iv) All supervisory maintenance and contractors responsible for maintaining pedestrian crossings to receive mandatory training and familarisation in the needs of disability access pedestrian crossing users.

Funding is in place for the allocation of funds based on the achievement of a number of training and course development milestones.

Upgrading the remaining 230 non-metropolitan pedestrian crossings in Victoria to the new disability access standards will be funded out of the Pedestrian Crossing Protection Upgrade Program $2.125 million per annum budget, which will be extended beyond the current expiry date of June 2006, in order for the upgrading to take place.

(f) The Minister for Transport is in the process of writing to the Premier seeking a "whole or government" approach to the design and standards for wheelchairs and scooters for disabled people ,including a proposal that the State require that users and purchasers of mobility aids must be advised at the point of sale that if they purchase equipment outside the established DDA Standards, they may have access difficulties with public transport.

(g) Currently, approximately $5.1 million per annum is being spent on level crossing and pedestrian crossing upgrades from passive to active protection.

Although appreciating that the task of establishing and maintaining safety standards for disabled access to railway crossings is an ongoing and important issue, it is submitted that the response of the Government and in particular the Department has been thorough and responsible. Perhaps more importantly, the Government is committed financially to the ongoing improvement of the franchise agreements and the ongoing improvement of safety for all of the public who use pedestrian crossings, including the disabled. This ongoing commitment is carried out by the implementation at committee level and the emerging introduction of new standards and technology in safety, design and maintenance standards."