IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: 211/11

# FINDING INTO DEATH WITH INQUEST

*Form 37 Rule 60(1)*
*Section 67 of the* ***Coroners Act 2008***

**Inquest into the Death of JOHN ALFRED WAILES**

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| Delivered On: | 29 February 2012 |
| Delivered At: | Coroners Court of Victoria<br>Level 11, 222 Exhibition Street<br>Melbourne |
| Hearing Dates: | 2 December 2011 |
| Findings of: | CORONER K. M. W. PARKINSON |
| Representation: | Mr John Murphy on behalf of Energy Safe Australia |
| Police Coronial Support Unit (PCSU): | Leading Senior Constable A. Maybury |

I, K. M. W. PARKINSON, Coroner having investigated the death of JOHN WAILES

AND having held an inquest in relation to this death on 2 December 2011
at Melbourne

find that the identity of the deceased was JOHN ALFRED WAILES

born on 17 April 1928

and the death occurred on 16 January 2011

at 30 Beach Street, Whittlesea, Victoria 3757

from:

1a. ELECTROCUTION
2. ISCHAEMIC HEART DISEASE

**in the following circumstances:**

1. An inquest was conducted into the death of Mr John Wailes on 2 December 2011 at Melbourne. The following witnesses gave evidence in the proceeding: Mr Gregory Johnson of Energy Safe Victoria and Senior Constable Erin Gooding, the investigating Victoria Police Officer.

2. Mr Wailes was born on 17 April 1924 and he was 82 years of age at the time of his death. Mr Wailes was a retired gentleman who lived with his wife of 62 years in the family home. He was an active person who regularly undertook gardening and maintenance tasks around the property.

3. Mr Wailes had a past medical history, which included ischaemic heart disease, coronary artery bypass surgery, atrial fibrillation, and he had a permanent pacemaker. His health was regularly monitored and his General Practitioner reports that he had not had any recent health incidents.

4. On 16 January 2011, Mr Wailes was in the garden, where he was fixing the fence railing between his house and a neighbouring property. The task required the affixing of metal straps around the fencing post from the top fence rail and he was undertaking the work from the neighbour's property. To assist him in the task he was using a metal drill.

5. At approximately 5.30pm, he had dinner with his wife and then returned to the garden to complete his work on the fence. Later in the evening, Mrs Wailes became concerned as she was unable to see her husband in the garden. She contacted her neighbour, Ms Lindy Mitchell, and at approximately 9.50pm they located Mr Wailes lying on his back at the location where he had been fixing the fence.

6. Ms Mitchell reported to police that when she touched Mr Wailes on the forehead she received a minor electrical shock and she then instructed Mrs Wailes to turn off the power. The cord was then unplugged from the laundry socket. Ambulance and Fire Officers attended. Ambulance officers were unable to resuscitate Mr Wailes as they noted he had been deceased for some time.

7. Police initially examined and photographed the scene. Senior Constable Gooding stated that when she attended, Mr Wailes was lying on his back in the garden bed. His legs were crossed, his right arm was resting across his stomach and the drill was located under his left hip. Police located a bucket containing fence bolts next to Mr Wailes and blood was identified on the fence near where he was lying.

8. Energy Safe Victoria also examined the scene and the tools in the following days and provided a comprehensive report to the Coroner. Electrical Inspector, Mr Greg Johnson reported:

   *"The victim was installing a metal strap from the top rail around the post. This was fixed in place by the use of 8mm hex head screws. Each hole in the strap was predrilled to 5mm. To drill the hole and insert the screws the victim used a class 1 240V metal drill. The drill had no identifying brand on it. It was approximately 40 years old."*

9. Mr Johnson identified that the drill had been the subject of repair during the course of its working life. I am satisfied that it is likely that the repairs were undertaken by Mr Wailes.

10. Mr Johnson's examination of the 3 pin supply plug for the drill identified that the earth connector conductor was not connected. He reported that the drill was fitted with a double pole switch, which had a damaged housing allowing for arcing fault to the drill case. He identified exposed active conductors at two locations on the supply lead of the drill, one at 1060mm from the base of the drill and another at 1660mm from the base of the drill.

11. The active conductors were exposed because of the broken housing on the double pole switch and because of the damaged lead casing. The drill became live at these three points. As the earth conductor on both the drill and the extension lead were not connected this resulted in the fuses not shorting at the fuse box. This meant there was no protection offered to Mr Wailes against the electrical current. He commented:

    *"The metal drill is a class 1 piece of equipment; this requires the exposed metal parts to be connected to the protective earth conductor of the supply cord and when plugged into the socket outlet it would be connected to the protective earthing system of the electrical installation. By the earth conductor not being connected the metal case of the drill was not connected to the protected earthing system of the electrical installation."* [1]

[1] The electrical installation being in this case the fuse box at the entry to the premises.

12. The drill was plugged into an extension cord, which was in turn plugged into a power point in the laundry of the house. The extension cord ran for a distance of approximately 10 metres, through the laundry window and over the fence being repaired. Mr Johnson's examination of the extension cord revealed that the earth conductor was not continuous and that the earth conductor was not connected to the 3 pin earth termination of the supply plug. The extension lead also had reverse polarity (transposition of the active and neutral conductors), which is not uncommon in imported electrical extension leads, however he did not consider that this matter contributed to the electrical incident.

13. Mr Johnson concluded that electric shock may have resulted when he came into contact with live parts from one of three locations; two on the drill supply lead and one on the drill. He stated:

    *"As the earth conductor was not connected to the installation via the drill supply cord or extension lead the only return path was through the general earth mass. This prolonged exposure to the electrical current may have caused his death. As the current was limited due to the resistance of the body of the victim and other influences, the characteristics of the semi-enclosed rewireable fuse would not have been expected to have operated and opened."*

14. Inspectors noted that there was no safety switch installed at the fuse box of the premises.

15. I am satisfied that the earthing mechanism within the drill had been corrupted, likely accidently by Mr Wailes during the course of repairing the equipment. Examination by the electrical investigator revealed that the double pole switch had a damaged housing, which had apparently been damaged for some time. This allowed for an arcing fault. The implications of this fault were that the metal housing of the drill would become live. If it had been connected to the earth wire, this would have operated to trip out the fuse. That is, the fuse at the fuse box would have blown and consequently limited the current. Further, the earth conductor of the extension lead was not connected at the plug. As the earth connectors were not connected, the fuse would not rupture. The earth conductor is the safety measure, particularly in the absence of a safety switch being fitted to the fuse box .

16. Mr Johnson observed that although there were a number of arc marks on the casing of the drill, it was unlikely that Mr Wailes would have been aware of the arcing if he had been using the drill indoors or on a wooden or solid floor surface. It was only when the tool became unearthed, such as when utilised outside on uninsulated surface that it would become apparent.

17. An examination was undertaken by Dr Melissa Baker, Forensic Pathologist of the Victorian Institute of Forensic Medicine, who reported her examination revealed a sternotomy scar and incised-type injuries to the palmar aspect of the left fingers. Thermal injuries consistent with electrical burns were noted on the right side of the abdomen, dorsum of the right hand and palmar aspect of the right hand. Dr Baker reported that in the circumstances a reasonable medical cause of death was: 1a. Electrocution and 2. Ischaemic Heart Disease.

18. Mr Johnson was asked by Leading Senior Constable Maybury to comment upon the nature of the injuries sustained, in view of the faults he had identified in the drill. He concluded that the hand injury was consistent with electric charge from the drill casing exposure and the abdominal injury from the power tool lead running across his body.

19. I am satisfied that the injuries, which were observed by the pathologist, are consistent with the injuries being sustained as a result of electrocution in the circumstances of the use of the faulty electric drill.

20. I am satisfied that the drill was not in safe operating order due to deterioration consequent upon age and as a result of minor repair work which appears to have been undertaken by Mr Wailes over a period of time. I am satisfied that the extension lead connected to the drill was also not in safe working condition. There is no evidence that Mr Wailes or any other person deliberately disconnected the earth connector on the drill and power lead and it is likely that this occurred during the course of repair and maintenance on the equipment or as a result of deterioration over a number of years. There is evidence that the lead had been reworked and a new plug fixed to the lead, with a shorter than effective earth wire. In addition, there was no safety switch at the fuse box, which may have operated to impede the current and protect Mr Wailes from or minimise the electrical charge he received.

21. I find that Mr John Wailes died as a result of electrocution on 16 January 2011 and that the source of the electrical current was the defective power drill, which he was utilising to repair his fence.

**COMMENTS:**

Pursuant to section 67(3) of the **Coroners Act 2008**, I make the following comment(s) connected with the death:

1. It appears that there is a public safety issue arising from the use of aged power tools particularly where they have been subject of home maintenance and repair. The risk arises from the lack of any testing of the device to ensure its electrical safety. The electrical inspector's evidence is that the solution to the problem in the longer term is the requirement since 2007, that all new electrical installations be fitted with a Residual Current Device, commonly known as a safety switch.

2. However as he noted, this does not ameliorate the risk in relation to older premises where such switches are not routinely fitted and where it is more likely that the householder, often a home handyman, will have retained their power tools over a long period of time. In this case the power tool was in excess of 40 years old. The risk from the use of such a common home maintenance device may not be readily apparent particularly in relation to items which have operated for many years without incident.

3. Householders and particularly home handymen, should be reminded that these devices require qualified tradesperson attention if they are in need of repair or maintenance and regular testing for electrical safety, particularly if they are to be retained for many years of use.

**RECOMMENDATIONS:**

Pursuant to section 72(2) of the **Coroners Act 2008**, I make the following recommendation(s) connected with the death:

1. That Energy Safe Victoria take appropriate steps to publicise the risk of home maintenance of electrical power tools and in particular the need for regular testing of such devices.

2. I direct that a copy of these findings be provided to: The Family, The Interested parties; Energy Safe Victoria, The Investigating Member.

Signature:

K. M. W. PARKINSON
CORONER

29 February 2012