

SHERIFFDOM OF TAYSIDE CENTRAL AND FIFE AT DUMFERMLINE

[2021] FAI 33

KKD – B598/19

DETERMINATION

BY

SHERIFF ALASTAIR N BROWN, ADVOCATE

**UNDER THE INQUIRIES INTO FATAL ACCIDENTS AND SUDDEN DEATHS ETC
(SCOTLAND) ACT 2016**

into the death of

MALCOLM WHITE

DUNFERMLINE, 14 April 2021

Introduction

This is an Inquiry under the Inquiries into Fatal Accidents and Sudden Deaths etc (Scotland) Act 2016 into the circumstances of the death of Malcolm White. Ms Rollo, Procurator Fiscal Depute, appeared for the public interest. Mr Corr, Solicitor appeared for the family of Mr White. Ms McNeill, Solicitor, appeared for Iain McKenzie Brown (Mr White's employer). The Inquiry heard evidence on 20 November 2020 and that evidence is recorded below. A joint minute was lodged, dealing with uncontroversial evidence.

Findings in fact

I found the following facts to be established:

- 1) Malcolm White was born on 21 December 1963.
- 2) He lived at [redacted].
- 3) He was employed as a tractor driver at Easter Grangemuir Farm, Pittenweem by Iain McKenzie Brown.
- 4) Although his principal duty was to drive tractors, he also carried out general farm work.
- 5) He was both qualified and experienced in all aspects of the role of tractor driver.
- 6) Between 8pm and 8.25pm on 7 June 2017, he was driving a Case CVX tractor registered mark SP09 DXH which was towing a Berthoud 35-37 Tenor single axle crop sprayer on the C62 road between the B9171 and the B940.
- 7) He was not wearing a seat belt.
- 8) A three point hitch was mounted on the front of the tractor and eight weights were attached to that hitch on an A frame as a weight carrier. The purpose of the weights was to improve grip in wet conditions.
- 9) Linkage balls are used to connect agricultural equipment, such as a weight carrier, to linkage arms on hitches on tractors. A clevis pin is used to prevent the linkage balls and A frame from becoming detached from the hitch.
- 10) The front wheels of the tractor were not fitted with brakes.
- 11) The tractor was designed and equipped with separate brake pedals for the brakes on each of the two rear wheels. The purpose of that was to enable the driver to choose to operate the brakes on one side only and thereby turn the

tractor more tightly whilst working in a field. The effect was to enable the tractor to pivot round the wheel which was braked.

12) For use on the road, the tractor was designed and equipped with a locking pin which, when engaged, locked the two brake pedals together so that the brakes could be applied to both wheels simultaneously as on any ordinary road vehicle. The effect was to ensure that, on braking on a road, the pivoting motion did not occur.

13) In accordance with his usual practice, at the time he was driving on the C62 Mr White had not engaged the locking pin.

14) The unladen weight of the crop sprayer was 4010kg. It was capable of a gross weight of 8550kg.

15) The crop sprayer was fitted with a tank which contained the liquid which was to be sprayed on crops together with water for flushing the system. At the time when Mr White was driving on the C62, that tank was about three quarters full. It contained about 2600 litres of fluid. The weight of the crop sprayer including its load was about 6610 kg.

16) The weight of the crop sprayer was such that it was required to be fitted with brakes.

17) The braking system on the crop sprayer was linked hydraulically to the tractor brakes so that activating the brakes on the tractor would also activate the brakes on the crop sprayer.

- 18) On 7 June 2017 the brakes on the crop sprayer were defective. The nearside brake had very little effect and the offside brake had none.
- 19) As a result, braking the combination of tractor and trailer depended almost entirely on the tractor brakes, which had to cope with the momentum of the crop sprayer as well as with that of the tractor.
- 20) The combination was over-weight for the tractor brakes.
- 21) The behaviour of the crop sprayer when brakes were applied was affected by the liquid in its tank. Because the tank was not completely full, the liquid could move within it. On deceleration, such as occurred when braking, the liquid, being unrestrained within the tank, had momentum in a forward direction and surged to the front of the tank.
- 22) At a point about 292 metres from the junction with the B9171, seven of the weights fell off the three point hitch and some of them fouled the front wheels of the tractor.
- 23) Mr White attempted to apply the brakes on the tractor.
- 24) Because the brake pedals were not linked, he was only successful in applying the brake on the offside.
- 25) The tractor pivoted round the rear offside wheel, as it was designed to do when the brakes were not linked.
- 26) The momentum of the crop sprayer, including the effect of the movement of the liquid in the tank, continued to propel the back of the tractor in the original direction of travel and thus exacerbated the pivoting effect.

- 27) The tractor and crop sprayer jack-knifed.
- 28) Mr White lost control of the tractor.
- 29) The tractor left the road and went down the embankment towards the burn.
- 30) Because he was not wearing a seat belt, Mr White was unrestrained in his seat.
- 31) He suffered a very heavy impact to the front of his head and upper face.
- 32) He sustained injuries which included a complex anterior and basal skull fracture and a severe traumatic brain injury.
- 33) His injuries were fatal.
- 34) Following post-mortem, the cause of his death was certified as 1a Blunt force head trauma; 1b Road traffic accident (tractor driver).

Determination as to circumstances

In terms of s26 of the Inquiries into Fatal Accidents and Sudden Deaths etc (Scotland)

Act 2016, I make the following findings as to the circumstances of Mr White's death:

- a. Mr White died between 8pm and 8.25pm on 7 June 2017 on a road, namely the C62, near its junction with the B9171, Anstruther.
- b. Mr White's death resulted from an accident which occurred at that time and place.
- c. The cause of Mr White's death was head injury sustained in a road traffic accident.

- d. The causes of the accident resulting in his death were
 - i. The weights being carried on the A frame on the front of the tractor were not secured adequately.
 - ii. Weights fell off the A frame and fouled the wheels of the tractor.
 - iii. The tractor brakes were not linked as they should have been.
 - iv. As a result, when Mr White attempted to apply the brakes in the emergency caused by the weights falling from the A frame, he was only successful in applying the brake on the offside rear wheel.
 - v. As a result, the tractor began to pivot round that wheel.
 - vi. The weight of the crop sprayer trailer was such as to require brakes on the trailer.
 - vii. The brakes on the trailer were defective and their effect was negligible.
 - viii. The momentum of the trailer exacerbated the pivoting of the tractor.
 - ix. Mr White lost control of the tractor.
- e. The following precautions could reasonably have been taken and, had they been taken, might realistically have resulted in Mr White's death, and the accident which resulted in Mr White's death, being avoided:
 - i. The weights could have been attached securely.

- ii. The brakes on the crop sprayer trailer could have been maintained in proper working order.
 - iii. The tractor brakes could have been linked properly for on-road use.
 - iv. Mr White could have worn his seat belt.
- f. The following defects in the system of working contributed to the accident resulting in Mr White's death
 - i. There was a failure to ensure that the weights were secured properly.
 - ii. There was a failure to maintain the brakes of the crop sprayer trailer in proper working order.
 - iii. Mr White failed to link the tractor brakes when driving on a road.
 - iv. Mr White failed to use his seat belt.

Recommendations

I make no recommendations. Legislation already imposes duties on employers as to the maintenance of equipment, on those who use vehicles (which includes using them by the hand of another) as to the maintenance of vehicles and trailers in roadworthy condition and on drivers as to (i) the standard of care required of them (which would include matters such as the linking of tractor brakes) and (ii) the use of seat belts. No purpose would be served by recommendations that made the obvious point that the legislation ought to be obeyed.

The Evidence

I heard the following evidence:

Ian McKenzie Brown: Mr Brown farms in partnership with his wife at Easter Grangemuir Farm. They have three full time employees and employ seasonal staff to help with harvest. Malcolm White was an employee who had worked at the farm for 30 years. He was employed as the farm's principal tractor driver and to do general farm work. The tractor involved in the accident was bought new in 2009. The driver is responsible for routine maintenance. An A frame was attached to the front of the tractor to hold ballast weights in order to give grip in wet conditions. The operator was responsible for making sure that the A-frame was fit for its purpose and that the link pins were connected. The frame and weights were bought in about 2005. The tractor was towing a crop sprayer which is of similar age to the tractor. The crop sprayer needs an MOT annually and this had been done the winter previously. Mr White brought nothing to Mr Brown's attention about the condition of the tractor. On the day of the accident. Mr White was working at Gordons Hall, a mile north of the farm, and was also spraying fields near Pittenweem. The witness saw Mr White in the late afternoon. He would come to the farm to fill the sprayer, three or four times in a day. Mr Brown saw Mr White at teatime, about 5 o'clock. He seemed fine and did not mention any problem. The road where the accident happened is a single track, straight road which veers a little to the left where the accident happened. To the right of the road a burn runs adjacent to the road for about 150 m.

Cross-examined, Mr Brown said that the maintenance on the tractor entailed changing the engine oil and other work detailed in a maintenance schedule. The crop sprayer brakes were connected hydraulically to the tractor brakes. The practice was to take off the hubs periodically and check the brakes. Mr White was a valued worker who had driven tractors during demonstrations when they were considering getting a new tractor. They had a good open working relationship. Mr White raised issues on a daily basis. He held a certificate for the sprayer. If there had been a handling issue, he would have brought that to Mr Brown's attention. The brakes on the tractor are self adjusting. It is possible to split the brakes to allow them to be operated separately. One would disengage the link in the field for manoeuvrability.

Stewart White Mr White is a farmworker and is the son of Malcolm White. At present, he works for a contractor. He has worked for Mr Brown at Easter Grangemuir Farm. He is aware of and has used the tractor in question. He described the linking of the brakes with a "metal plate" which turns 180° to lock the brakes together. Cross-examined, he said that his father generally did not link the brakes.

PC Michael Greig Aged 54, with 24 years police service, stationed at road policing, Glenrothes since 2004. He has a City and Guilds qualification in collision investigation. He was the lead author of production 3, which is the road policing collision investigation report. He attended the locus, where a tractor and crop sprayer were in a

ditch. Mr White was still in the tractor. He was not wearing a seat belt. Other police officers were present. The weather was clear and dry. The crop sprayer was still attached to the tractor. The road surface was very good. There was a soft narrow verge to the left and a verge to the right leading down a steep embankment to a watercourse. The first physical evidence of the occurrence was approximately 292 m to the north of the junction with the B9171. There was a gouge in the road surface 1.7 m east of the west verge. It was 0.27 m long. Immediately to the north of that there are two further gouges parallel to each other. The creation of these gouges would require considerable force. He attributed them to weights striking the surface and travelling forwards. One of the weights was found a short distance north of the marks. It was fractured at the top. The hook which kept it attached to the tractor was broken. The break looked uniform and clean and was, therefore, recent. A second weight was found and it was also fractured at the top. There was a tyre mark interlaced with several scores and deep gouge marks. The longest mark was 7.9 m long. He attributed this to weights being pushed along by one of the offside tyres on the tractor or trailer. Further weights were found on the carriageway. There was a tyre imprint on the grass verge which lead directly to the rear offside wheels of the tractor. It lost definition, which indicated braking. There was a rolling tyre mark which related to the trailer. There were weights found on the grass verge which appeared to have been moved, possibly by the fire service. PC Greig examined the tractor on 27 June and found no defects.

The brake pedals were not linked. He did not test the brakes. Recovery was difficult and there was recovery damage but he was in the cab during recovery and found no fault. One tyre was deflated but it was pulled sideways during recovery and was off the rim. Prior to recovery, the tyre was inflated. The seatbelt was functional. There was no evidence of any other vehicle being involved. It appeared that the driver had activated only the offside brake prior to the accident.

The crop sprayer was about 3/4 full. The trailer had standard drum brakes. The offside wheel brake on the trailer was not working properly. That predated the accident. There was little or no braking force from the trailer. Effectively, the tractor and trailer were overweight and the tractor would get pushed along by the trailer.

PC Greig said that it was not known why the weights struck the road. He said that there was no reason for the weights to come off. Cross examined, he agreed that there was an O ring missing at the top of the A frame which one of the weights went through. He said that the front wheels may have been blocked by the weights but the vehicle kept turning. The breaks to the weights were clean so there was probably no question of metal fatigue.

Steven Robert Burgess Mr Burgess is a self-employed forensic collision investigator and vehicle examiner, who was instructed to examine the tractor. The tractor and crop sprayer were by then located at an agricultural salvage operator in the West Midlands.

He took photographs and measurements. The weight carrier from the front of the tractor was missing. The tractor appeared to be in good condition. He made a visual inspection of the braking mechanism. The front axle of this tractor is not braked. There was a three point hitch fitted to the front of the tractor and operated by a short joystick. It would take continuous pressure to move the weights onto the ground. It takes about 5 1/2 seconds to lower it to the ground. On 3 February 2020 he tested the brakes on the crop sprayer. These were hydraulically operated brakes connected to the tractors braking system. The nearside brake had very little braking effect. The offside brake provided no braking effect. The efficiency of the brakes was so low that they would be of little use on a rolling vehicle. The driver would be relying entirely on the tractor's braking system.

PC Declan Fitzpatrick Aged 55 with 23 years' police service. This officer was instructed by the procurator fiscal to review the evidence. As part of that, he arranged for a test involving a similar tractor but a different trailer, to see how the tractor behaved under severe braking. The test was carried out at Knockhill race track. The tractor was driven by a very experienced tractor driver who was a dealer for Case tractors. With all brakes working the tractor stopped in a straight line very quickly. With the brakes disconnected on the trailer, the combination stopped in a straight line. When the connection between the brake pedals was disconnected, the tractor veered to the right so much that it looked as though it was about to jack-knife. On the basis of that test, PC Fitzpatrick concluded that Mr White had had no chance of bringing the vehicle to a

halt within the width of the road at the locus. If the footbrake link was not connected, the combination would veer. The unbraked trailer would have caused a jack-knife. The liquid in the crop sprayer would cause a wave inside and increase the force to the side to which the tractor was veering. From the photographs it can be seen that the combination did jack-knife.

In paragraph 5.1 of his report, which is Production 7, PC Fitzpatrick gives his opinion that the front weights had become dislodged. Linkage balls are used to connect agricultural equipment to link arms. The offside linkage ball is shown as missing in the photographs. Photograph 6 shows that the hole where the linkage ball should have been was covered in mud. There should have been a retaining pin through that hole. There is no trace of there having been any pin.

Note

The findings in fact flow in a straightforward way from the evidence. There having been no eye witnesses, they are largely a matter of inference from the resultant position of the vehicle and the marks on the road, all of which are eloquent of the weights coming off, the attempt to brake and the tractor and trailer combination jack-knifing. The failure to link the brakes and the almost total absence of any effective brakes on the crop sprayer are a sufficient explanation for Mr White's inability to control the combination which he was driving. And, whilst there was no evidence specifically on the point, it seems likely that his failure to wear his seat belt is a complete explanation

for his head injury. What none of that explains, however, is why the weights fell off in the first place. That is unfortunate because it seems clear that it was the weights falling off which triggered the whole sequence which led to Mr White's death.

No expert examination of the A frame and the mechanism for attaching the weights was ever carried out. PC Greig and his colleague who completed the road policing collision investigation report are well qualified and experienced in collision investigation but they state no qualifications or experience in relation to agricultural machinery. Their report describes the hitch on the front of the tractor in general terms and its operation using a joystick in the cab. They offer the view that "for reasons unknown, the rams on the hitch have been lowered and the weights mounted to the front 3 point hitch have made contact with the road. This fractured at least two of them". They suggest that Mr White might have caught the joystick with his arm. All of that, however, is speculation and there is no evidence of the hitch being found in a lowered position after the accident.

Mr Burgess was not able to examine the tractor until December 2019 – over 2 years after the accident. It had been moved to an agricultural equipment salvager in Kidderminster. The weight carrier, weights and securing bar were all missing. The Procurator Fiscal was not able to offer any explanation for the release and removal of the tractor without a proper examination of the piece of equipment which was, on any view, at the heart of the ultimate cause of the accident.

PC Fitzpatrick was not even able to examine the tractor. He became involved when the Procurator Fiscal who was to represent the public interest at the Inquiry realised that there were unanswered questions. His work was invaluable. In particular, when looking at the photographs, he noticed the absence of the clevis pin and also noticed an accumulation of mud which suggested that the pin had been absent for some time before the accident. That evidence emerged only at the very end of the Inquiry, when PC Fitzpatrick's evidence had been completed and he expressed concern to a bar officer about the fact that he had not been asked about that matter. He was right to do so. He was recalled and he gave the evidence. At that stage, however, it was far too late to explore the issue with any other witness.

The absence of the clevis pin is the only reasonable explanation before me for the weights falling off the frame. There is certainly reasonable ground to suspect that it is the reason why they fell off. I have considered carefully whether I could hold, on a balance of probabilities that it was the reason. In the absence of a proper examination of the equipment by a person having relevant expertise, I do not think that I can come to that conclusion. It is the only live possibility but that is as much as can be said. I do, however, think that it is reasonable to reject the speculation about the hitch being lowered and to conclude that the weights were not secured adequately.