SHERIFFDOM OF GRAMPIAN HIGHLAND AND ISLANDS AT BANFF

[2021] FAI 25

BAN-B27-20

DETERMINATION

BY

SHERIFF ROBERT MCDONALD

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

into the death of

ANDREW NEIL IRONSIDE

Banff, 23 March 2021

Determination

The Sheriff having considered the information presented at the inquiry, determines in terms of Section 26 of the Act as follows:-

1. In terms of Section 26(2)(a) that the late Andrew Neil Ironside, date of birth 2 September 1971 who resided in Portlethen, died on 10 November 2018 at around 12:05 at Auchlinn Farm, Turriff, Aberdeenshire. Life was formally pronounced extinct at 13:20 on 10 November 2018 by Donald McGillivray, paramedic, Scottish Ambulance Service.

2. In terms of Section 26(2)(b) that the accident resulting in the death of the late Andrew Neil Ironside occurred at around 12:05 on 10 November 2018 at Auchlinn Farm, Fisherie, Turriff, Aberdeenshire.

3. In terms of Section 26(2)(c) the cause of the death of the late Andrew Neil Ironside was significant head and neck injuries.

4. In terms of Section 26(2)(d) the accident resulting in the death was caused by the late Mr Ironside placing his head and upper body within the drying chamber of a Pedrotti 250L mobile grain dryer whilst the moving or rotating parts of dryer were in operation, resulting in his face and neck becoming trapped between a rotating agitator bar and the dryer frame. The late Mr Ironside was able to place his head inside the grain drying machine in close proximity to the moving/rotating parts of the dryer whilst they were still in operation. He did this by defeating an interlocking mechanism on the outer inspection door on the drying chamber. The interlocking mechanism was a safety feature that, when used properly, should operate to automatically inhibit the machine from operating while the inspection door is not engaged in the interlock. The cause of the accident was firstly the deceased's improper use of the machinery, specifically the interlocking mechanism; and secondly a failure by deceased to observe written instructions and/or usual procedures for safe use of the grain drying machine.

5. In terms of Section 26(2)(e) the following precautions could reasonably have been taken and had they been taken, might realistically have resulted in the death or the accident resulting in the death, being avoided:

Had the late Mr Ironside utilised the interlocking mechanism on the outer inspection door in the correct manner, or otherwise disconnected the electricity supply, before placing his head and upper body within the drying chamber, his death might have been

avoided as all moving parts would then have been stationary when he entered the drying chamber of the grain drying machine.

6. In terms of Section 26(2)(f) there was a defect in the system of working at Auchlinn Farm, Fisherie, Turriff which on 10 November 2018 allowed the late Mr Ironside to remove the inspection door of the drying chamber of the grain dryer together with its associated guard and refit the guard in such a way that the grain dryer could be operated without the inspection access being covered. This was unsafe and exposed Mr Ironside to risk of entanglement. The defect in the system of work caused the accident resulting in Mr Ironside's death.

7. In terms of Section 26(2)(g) there are no other facts which are relevant to the circumstances of the death.

Recommendations

I have considered whether in terms of section 26(1)(b) of the Act it would be appropriate to make any recommendations as to (a) the taking of reasonable precautions, (b) the making of improvements to any system of working, (c) the introduction of a system of working (d) the taking of any other steps, which might realistically prevent other deaths in similar circumstances. I have determined that it is not appropriate to make any such recommendations.

Note

Introduction

[1] The Inquiry was held under the Fatal Accidents and Sudden deaths etc. (Scotland) Act 2016 ("the Act") into the death of Andrew Neil Ironside ("Mr Ironside")

[2] The Inquiry was a mandatory Inquiry under section 2(3)(a) and (b) of the Act as Mr Ironside died as a result of an accident which occurred in Scotland in the course of his employment as a Director of JNI Agricultural Limited ("JNI").

[3] The circumstances surrounding Mr Ironside's death were investigated by the Health and Safety Executive

[4] The first notice in the Inquiry was lodged by the Crown on 29 September 2020.

[5] On 3 November 2020 a Notification of Intention to Participate was lodged on behalf of Fratelli Pedrotti s.r.l., Mairano, Italy the manufactures of the Pedrotti 250L mobile grain dryer involved in the accident relative to Mr Ironside's death.

[6] There were preliminary hearings on 20 November 2020 and 4 December 2020 and the hearing of the Inquiry took place on 17 and 18 December 2020.

[7] The participants in the Inquiry were the Procurator Fiscal represented by Ms Jemma Eadie, Procurator Fiscal Depute and Fratelli Pedrotti s.r.l. who were represented by Mr Graeme Edward, Solicitor-Advocate.

The Evidence

[8] Prior to the commencement of the hearing the Crown lodged two folders of productions and signed witness statements by David Charles Gostick and Roger Lewis Upfold.

[9] On 17 December 2020 at the commencement of the Inquiry Ms Eadie and Mr Edward lodged a signed Joint Minute of Admissions of facts which the participants were agreed should be admitted in evidence as proved.

[10] The hearing of the Inquiry on 17 and 18 December 2020 was conducted by means of a Webex video conference. On 17 December 2020 the Crown led parole evidence from Mr Alan Lindsay, a previous farm manager with JNI, Mr Ryan McGibbon, an employee of JNI who was working alongside Mr Ironside at the time of the accident, Mr Craig Grant, a local farmer whose company worked in partnership with JNI and Mr David Charles Gostick, HM Inspector of Health and Safety. On 18 December 2020 the Crown led parole evidence from Mr Roger Lewis Upfold former HM Inspector of Health and Safety. Each of the Crown witnesses were cross examined by Mr Edward. No further evidence was led. Mr Edward lodged written submissions on 5 February 2021 and Miss Eadie lodged her written submissions on 11 February 2021 following which I made avizandum.

The statutory framework

[11] The Inquiry is held under section 1 of the Fatal Accidents and Sudden Deaths etc. (Scotland) Act 2016 ("the Act") and is governed by the Act of Sederunt (Fatal Accident

Inquiry Rules) 2017 ("the 2017 rules"). The purpose of such an Inquiry is set out in section 1(3) of the 2016 Act and is to:

(a) establish the circumstances of the death, and;

(b) consider what steps (if any) might be taken to prevent other deaths in similar circumstances.

[12] Section 26 of the 2016 Act states, among other things, that:

(1) As soon as possible after the conclusion of the evidence and submissions in an Inquiry, the sheriff must make a determination setting out –

(a) in relation to the death to which the Inquiry relates, the sheriff's findings as to the circumstances mentioned in subsection,

and

(b) such recommendations (if any) as to any of the matters mentioned in subsection (4) as the sheriff considers as appropriate.

(2) The circumstances referred to in subsection 1(a) are –

a. when and where the death occurred;

b. when and where any accident resulting on the death occurred;

c. the cause or causes of the death;

d the cause or causes of any accident resulting in the death;

e. any precautions which –

(i) could reasonably have been taken, and

(ii) had they been taken might realistically have resulted in the death or any accident resulting in the death, being avoided;

f. any deficits in any system of working which contributed to the death or any accident resulting in the death;

g. any other facts, which are relevant to the circumstances of the death.

(3) For the purposes of subsection 2(e) and (f) it does not matter whether it was foreseeable before the death or accident that the death or accident might occur –

(a) if the precautions were not taken, or;

(b) as the case may be, as a result of the defects.

(4) The matters referred to in subsection 1(b) are –

(a) the taking of reasonable precautions;

(b) the making of improvements to any system of working;

(c) the introduction of a system of working

(d) the taking of any other steps which might realistically prevent other deaths in similar circumstances.

[13] The procurator fiscal represents the public interest. An Inquiry is an inquisitorial process and it is not the purpose of an Inquiry to establish civil or criminal liability.

Issues for The Inquiry

[14] In the Notice of The Inquiry lodged by the Procurator Fiscal on 29 September 2020 the Crown indicated that it was anticipated that the Inquiry would give consideration to the following issues:-

a. the cause of the accident which resulted in the death;

b. whether there were any precautions which could reasonably have been taken and which might realistically have resulted in the death having been avoided;

c. whether there were any defects in any system of working which contributed to the death or any accident resulting in the death; and

d. The design and manufacture of the grain drying machine involved in the accident and in particular the guarding system in place to prevent access to the moving parts of said dryer.

Summary of Facts

[15] I found the following facts admitted or proved.

[16] Mr Ironside was born on 2 September 1971. At the time of the accident he was aged 47 years and was resident in Portlethen. He was a farmer and businessman. He died on 10 November 2018 at 12:20 at Auchlinn Farm, Turriff, Aberdeenshire and the cause of death was significant head and neck injuries.

[17] Mr Ironside was a Director of company J N I Agricultural Limited, a company incorporated under the Companies Acts and registered number SC511191 ("JNI").

Mr Ironside was appointed a director of said company on 20 July 2015 and continued in his role as director until the date of his death.

[18] JNI Agricultural Limited bought Auchlinn Farm, Fisherie, Turriff in 2016. The sale included a Pedrotti 250L grain dryer.

[19] The Pedrotti 250L grain dryer ("the dryer") was manufactured by Fratelli Pedrotti s.r.l., Mairano, Italy in 2009. Master Farm Services Ltd, Caine Road, Bures Park, Bures, Suffolk imported the dryer into the United Kingdom and sold it to Ravenhill Ltd, Markethill Road, Turiff. On 4 August 2009 the then owner of Auchlinn Farm, Mr Steven Mackie purchased the dryer from Ravenhill Ltd.

[20] Mr Ironside was responsible for the running of Auchlinn Farm. In addition to his management duties he carried out some of the day to day work on the farm. JNI employed Mr Ryan McGibbon as a farm worker and he carried out a number of day to day tasks at Auchlinn Farm.

[21] JNI in partnership with another local farming business were involved in a pig farming operation. Wheat and barley were grown at Auchlinn farm and after harvesting the grain was stored to be used as feed for the pigs.

[22] The grain harvested at Auchlinn could not be properly stored if its moisture content was too high. The dryer was used, as required, to reduce the moisture content of grain harvested at Auchlinn farm to allow it to be stored properly.

[23] The drying of grain takes place within the cylindrical drying chamber of the dryer. Grain is initially fed into the dryer's inlet hopper and carried by an inlet auger to a vertical auger which lifts the grain to the top of the chamber. During drying the grain

is then released into the drying chamber where it falls through dry warmed air being blown into the dryer. The grain falls to the bottom of the chamber where rotating agitators stir the grain and feed it back into the inlet of the vertical auger. The cycle is then repeated until the required level of dryness is achieved. The feed from the vertical auger back to the drying chamber is then closed and the grain feeds instead into an output chute.

[24] The main chamber of the dryer is cylindrical in shape and approximately 3 metres in diameter. The walls of the chamber are formed from steel sheet which is perforated by numerous small circular holes which were designed to allow the drying air to pass through but not the grain.

[25] The lower part of the chamber is conical in shape and approximately 1.5 metres in height. The walls were formed from the same perforated steel as the walls of the upper part of the chamber.

[26] The lower section of the drying chamber is split vertically into eight panel sections. One of these panels could be removed to allow access into the chamber for inspection and maintenance ("the access panel").

[27] The access panel was made up of two main pieces: an inner inspection door and an outer inspection door guard.

[28] The inner inspection door was formed from the same perforated steel material as the main chamber and was surrounded by a strip metal framework. It slotted into a channel in the main framework in the chamber. The size of the holes in the perforated steel material was such that it was not possible to see clearly through the holes.

[29] The outer inspection door guard was formed from a metal sheet with larger square sided holes which could be seen through. A bent metal bar was welded approximately half way down the left-hand edge of the panel to which the tongue of an interlock was welded.

[30] An interlock switch was secured to the framework of the dryer on the left hand side of the aperture for the access panel. When the outer guard was fitted its interlock tongue engaged into the interlock switch.

[31] The inspection door guard was an interlocking moveable guard. It was integrated correctly into the main control system of the dryer. The effect of this was that the dryer could not be started without the interlock being closed and would stop if the interlock was reopened by removing the guard. If the guard was removed the machine did not automatically restart when the guard was refitted and it required to be restarted from the main control panel.

[32] On Saturday 10 November 2018 Mr Ironside and Ryan McGibbon had intended to clean the dryer. The dryer had previously been used to dry some wet grain at the end of the harvest.

[33] On the morning of 10 November 2018 Mr McGibbon had been at another nearby farm. When he arrived at Auchlinn Farm at about 12.00 hours he found Mr Ironside already working on cleaning the dryer.

[34] Mr McGibbon approached the dryer on the side opposite to the area where Mr Ironside was working. He noticed that the dryer was running. He stood on the

opposite side of the dryer for a minute or so. Mr McGibbon then heard Mr Ironside shouting.

[35] Mr McGibbon went round to the other side of the dryer and saw that Mr Ironside was stuck inside the dryer at the access panel. Mr McGibbon couldn't see Mr Ironside's head and Mr Ironside's body was hanging out of the dryer. Mr Ironside was unresponsive to communication.

[36] Mr McGibbon noted that the outer door of the access panel had been removed and replaced in an upside down position.

[37] An emergency call was placed and at 12.05 hours Donald McGillvray, a paramedic practitioner and Keir Lynch, a student technician both employed by Scottish Ambulance service were dispatched to Auchlinn Farm. They arrived at Auchlinn Farm at 12.15 hours.

[38] Donald McGillvray pronounced life extinct at 13.20 hours on 10 November 2018.

[39] Mr Walter Bruce, a retained Firefighter with Scottish Fire and Rescue Service attended an emergency call at Auchlinn Farm on 10 November 2018 at around 12:00 midday. Mr Bruce observed the head of the deceased was trapped by a blade within the dryer. Mr Bruce was stood down to await a completed safety inspection of the electrical supply to the dryer. Later that day Mr Bruce used a battery powered saw to cut pieces of a Pedrotti 250L grain dryer there in order to free the body of the deceased Andrew Neil Ironside.

[40] On 14 November 2018 a post-mortem examination of the body of the deceased Andrew Neil Ironside took place at Aberdeen Public Mortuary 2. The conclusion of said

examination was that Mr Ironside had sustained significant head and neck injuries which resulted in his death. There was no significant natural disease to attribute to death. There was no evidence of intoxication.

[41] Mr Ironside's death was caused by him placing his head and upper body within the chamber of the dryer whilst the moving or rotating parts of dryer were in operation, resulting in his face and neck becoming trapped between a rotating agitator bar and the dryer frame.

[42] The late Mr Ironside was able to place his head inside the grain drying machine in close proximity to the moving/rotating parts of the dryer whilst they were still in operation. He did this by defeating the interlocking mechanism on the outer inspection door on the drying chamber.

[43] Mr Ironside defeated the interlocking mechanism by removing the outer inspection door, rotating it 180 degrees and then refitting the interlock tongue of the panel into the interlock switch. This allowed the dryer to operate while the access panel was open and unguarded.

[44] Mr Ironside's actions in removing the outer inspection door and refitting it upside down amounted to a failure to observe the manufacturers instruction manual and usual procedures for safe use of the dryer.

[45] Following the accident three modifications were made to the dryer as follows.

[46] Firstly a wire rope lanyard was secured to the right-hand edge of the interlocked guard to the structural framework of the grain dryer so that it was not possible to rotate the guard and fit incorrectly into the interlock.

[47] Secondly a metal cover was fitted over the interlock to prevent the guard being rotated and refitted incorrectly into the interlock.

[48] Thirdly the positions where the interlocked guard fitted over the studs of the dryer framework had been slotted with penny washer and nuts used to hold the dryer in place so that if the guard was not properly secured with screws the guard would fall off and prevent the dryer from operating.

Submissions

[49] Both the Procurator Fiscal depute and Mr Edward made submissions inviting me to make findings under Section 26(2) (a) to (f) of the Act. These submissions were each in very similar terms. I had no difficulty in accepting these submissions and my determination largely reflects the substance of their submissions.

[50] Both the Procurator Fiscal depute and Mr Edward made submissions that I should make a determination that in terms of Section 26(2)(g) of the Act that there were no other facts which were relevant to the circumstances of the death. I agreed with these submissions.

[51] Both the Procurator Fiscal depute and Mr Edward made submissions that I should not make any recommendations under 26(1)(b) of the Act and again I agreed with their submissions in this respect.

Discussion

[52] The procurator fiscal and Fratelli Pedrotti s.r.l., Mairano, Italy, the manufactures of the grain dryer involved in this accident, were the only persons who participated in this inquiry. There were no matters in dispute in relation to the factual circumstances surrounding this tragic accident.

[53] All of the witnesses who gave parole evidence did so in a straightforward manner and I had no difficulty in accepting them as credible and reliable in all material respects.

Section 26(2)(a) – when and where the death occurred

[54] In respect of my determination under Section 26(2)(a) I relied on paragraph 4 of the Joint Minute of Admissions where the participants agreed that it should be accepted into evidence that on 10 November 2018 Mr Ironside and the witness Ryan McGibbon were working at Auchlinn Farm, Turiff, Aberdeenshire on 10 November 2018. At around 12:00 midday Mr Ironside and Ryan McGibbon were undertaking a task of cleaning a Pedrotti 250L grain dryer on site at Auchlinn Farm. Ryan McGibbon was standing at the opposite side of the said grain drying machine when he heard a noise he assessed as having come from the deceased. Ryan McGibbon went to investigate why the deceased had made the noise and discovered the deceased with his upper body inside said grain drying machine and the deceased being unresponsive to communication.

[55] I relied on paragraph 5 of the Joint Minute where it was accepted that the witness Donald MacGillivray was employed by the Scottish Ambulance Service as a Paramedic Practitioner and that the witness Keir Lynch was a student technician employed by said Scottish Ambulance Service. Donald MacGillivray and Keir Lynch were despatched at 12:05 hours, arriving at Auchlinn Farm at 12:15 hours on 10 November 2018 in response to an emergency call. Donald MacGillivray pronounced life extinct at 1320 hours on 10 November 2018.

[56] I also relied on paragraph 7 of the Joint Minute where it was accepted that the witness Walter Bruce was a retained Firefighter with Scottish Fire and Rescue Service who attended an emergency call at Auchlinn Farm on 10 November 2018 at around 12:00 midday. Mr Bruce observed that Mr Ironside's head was trapped by a blade within the grain dryer. Later that day Mr Walter Bruce used a battery powered saw to cut pieces of the dryer in order to free Mr Ironside's body.

[57] The evidence of Mr McGibbon supported the terms of the Joint Minute in these respects.

Section 26(2)(b) – when and where any accident resulting in the death occurred

[58] In making my determination under this subsection I was able to rely on paragraphs 4 and 5 of the Joint Minute as referred to above and the parole evidence of the witness Ryan McGibbon.

Section 26(2)(c) – the cause or causes of the death

[59] In making my determination under this subsection I was able to rely on paragraph 1 of the Joint Minute where the participants accepted that the cause of death was certified as head and neck injuries. In addition to this I was able to rely on paragraph 7 of the Joint Minute, as referred to above, where the participants accepted that the witness Walter Bruce observed Mr Ironside's head trapped between a blade within the grain dryer.

[60] I was also able to rely on the terms of the post mortem report which was lodged as a production by the Crown. In paragraph 9 of the Joint Minute the participants accepted that the findings of the pathologists were correctly recorded in the report. The post mortem report stated:- that the deceased suffered significant head and neck injuries which resulted in his death; that there was no significant natural disease to attribute to the death; that there was no evidence of intoxication and; that there were no other significant findings.

Section 26(2)(d) – the cause or causes of any accident resulting in the death

[61] The evidence of Ryan McGibbon was important in this respect as he is the only surviving eye witness to the accident. His evidence was that he had been employed at Auchlinn Farm since 2018. He had obtained some formal farming qualifications at college level and had been employed at two farms previously. He had a number of day to day duties around the farm. He did all of the tractor work. He explained that the

farm was involved with pig farming and barley was grown for feeding the pigs. He assisted with the harvest.

[62] Mr McGibbon explained that at the end of the harvest there was a relatively small amount of wet grain which had to be put through the dryer. He and Mr Ironside had carried out the drying work between them. Mr Ironside had taught Mr McGibbon how to use the machine. The dryer was normally cleaned after use as debris from the drying operation could collect inside the machine. The outer and inner inspection doors at the access panel would be opened to clean the debris from inside the machine and the dryer would be switched off while this was done. He explained that the dryer ran off a generator and he would normally switch off the generator before accessing the inspection doors.

[63] Mr McGibbon explained that he was working on the day of the accident which was a Saturday. Mr Ironside was working on the farm that day as it was his practice to go out to the farm on Saturdays to do jobs around the farm. It had been agreed that on the day of the accident Mr McGibbon and Mr Ironside would work together to clean the dryer.

[64] Mr McGibbon said that he had been at another farm that morning and when he arrived at Auchlinn Farm Mr Ironside was already at the dryer and had started cleaning it. Mr McGibbon approached the dryer at the side opposite to the side where Mr Ironside was working. While he was standing at the dryer he noted that it was running. He then heard Mr Ironside shouting. He went round to the other side of the

dryer and saw that Mr Ironside was stuck inside the dryer. He couldn't see Mr Ironside but could see Mr Ironside's body hanging out of the dryer at the access panel.

[65] Mr McGibbon noted that the outer inspection door of the dryer had been removed and replaced upside down. This bypassed the safety mechanism of the machine and allowed access to the inside of the machine while it was running. Mr McGibbon assumed that Mr Ironside had removed the outer inspection door and replaced it upside down although he had not seen him do so. Mr McGibbon stated that he would not have considered refitting the inspection door in this way as it was clearly unsafe.

[66] It is clear that the accident was caused by Mr Ironside placing his head and upper body within the drying chamber of the dryer whilst the moving or rotating parts of said dryer were in operation, resulting in his face and neck becoming trapped between a rotating agitator bar and the dryer frame.

[67] In the Post Mortem Report lodged as a production by the Crown it is stated that Mr Ironside had sustained a severe neck injury (page 2) and "The pattern and distribution of injuries may be in keeping with him being struck at the side of the head or neck and then wedged by a component of the grain drying machine" (page 9).

[68] Further evidence supporting my determination in this respect is found in the photographs lodged by the Crown which show the deceased in situ and these photographs were accepted as evidence by the participants in the Joint Minute.

[69] The Crown witness Mr Gostick in his parole evidence explained how the dryer operated. He also explained how the inspection door guard was an interlocking

moveable guard integrated into the main control system of the dryer. The effect of this was that, when used properly, the dryer could not be started without the interlock being closed and would stop if the interlock was reopened by removing the guard. If the guard was removed the machine did not automatically restart when the guard was refitted and it required to be restarted from the main control panel.

[70] It therefore seemed clear that Mr Ironside had been able to place his head inside the grain drying machine in close proximity to the moving/rotating parts of said dryer whilst they were still in operation. He did this removing and replacing the outer inspection door upside down thereby defeating the interlocking mechanism on the outer inspection door on said drying chamber.

[71] I was also able to rely on the instruction book for 'Master Grain Dryer' supplied with the dryer by "F.lli Pedrotti S.r.l." and which was agreed by the participants as being accurate in its terms in the Joint Minute and which states that the machine should be switched off before removing the outer inspection door.

[72] I also relied on the evidence of witnesses Mr McGibbon, Mr Craig Grant, Mr Alan Lindsay and Mr Gostick that the usual safe procedure for using the machine required that the machine should be switched off before removing the outer inspection door.

Section 26(2)(e) – any precautions which (i) could reasonably have been taken, and (ii) had they been taken, might realistically have resulted in the death, or any accident resulting in the death, being avoided.

[73] In reaching my determination that had Mr Ironside used the interlocking mechanism on the outer inspection door in the correct manner, or had he otherwise disconnected the electricity supply, before placing his head and upper body within the drying chamber, his death might have been avoided I was able to rely on the evidence of witnesses Ryan McGibbon, Craig Grant, Alan Lindsay and David Gostick. I was also able to rely on the terms of the Instruction book as mentioned above which states that the machine should be switched off before removing the outer inspection door. It is clear from these sources of evidence that had these reasonable precautions been taken all moving parts would have been stationary when Mr Ironside entered the drying chamber and his death might realistically have been avoided.

[74] Although neither of the participants invited me to make any further determination under this subsection of the Act I did consider carefully whether it would be appropriate for me to do so in respect of the design of the outer inspection door.

[75] HSE Inspectors David Gostick and Roger Upfold were critical of the design of the outer inspection door of the dryer in the context of the statutory requirements to ensure such machines meet the various health and safety tests before being made available for purchase on the open market. David Gostick described the outer inspection door that was supplied with the machine at the time of the incident as being

"crudely finished" with many sharp edged and that he felt the door was "flimsy" when it was removed from the grain drying machine.

[76] Reference was made to Paragraph 1.4 of the Essential Health and Safety Requirements (EHSRs) of the New Approach Directive Machinery 89/392/EEC and adopted in the Supply of Machinery (Safety) Regulations 1992. Paragraph 1.4.1 states that:

> "Guards and protective devices must - be of robust construction, -not give rise to any additional hazard, -not be easy to by-pass or render non-operational, -be located at an adequate distance from the danger zone, -cause minimum obstruction to the view of the production process, and enable essential work to be carried out on installation and/or replacement of tools and for maintenance by restricting access only to the area where the work has to be done, if possible without the guard or protective device having to be disabled…"

Witnesses David Gostick and Roger Upfold gave evidence that it was their opinion that the machine, as it was on the date of the incident, did not meet these standards. The chief concern expressed by both witnesses was that the design of the outer inspection door and interlocking guard, as it was then, was capable of being by-passed while the machine was in operation and thus could expose a user to dangerous moving parts.

[77] HSE Inspectors David Gostick and Roger Upfold both spoke to 3 modifications which were made to the grain dryer following the accident. These were (1) a wire rope lanyard was secured to the right-hand edge of the interlocked guard to the structural framework of the grain dryer, (2) a sheet metal cover was fitted over the interlock, and (3) the positions where the interlocked guard fitted over the studs of the dryer framework had been slotted with penny washer and nuts used to hold the dryer in place.

[78] It was therefore necessary for me to consider whether better compliance with the aforementioned regulations by making these modifications prior to the accident might have prevented Mr Ironside's death or the accident resulting in his death. There was however no evidence at the Inquiry which would allow me to conclude that the death or the accident might have been avoided had these modifications been made to the grain dryer prior to the accident.

[79] HSE Inspectors David Gostick and Roger Upfold both spoke of the deceased's deliberate intent to misuse the guard. Witness Alan Lindsay described the deceased's attitude to health and safety as cavalier at best. Witness Alan Lindsay also gave evidence that with an appropriate tool the modifications carried out to the grain dryer following the accident could also have been bypassed by the deceased if he was intent on doing so. I therefore decided that it would not be appropriate for me to make any further determination under this heading.

Section 26(2)(f) – any defects in any system of working which contributed to the death or any accident resulting in the death

[80] There were a number of sources of evidence which supported my determination that a defective system of working operated by Mr Ironside contributed to his death or the accident resulting in his death. In this connection I took into account the evidence of Mr Ryan McGibbon which I have summarised above.

[81] I also took into account the evidence of Alan Lindsay who was the farm manager at Auchlinn from 1995 till 2016. He stated that he had significant relevant experience,

having been a farmer for 45 years. He had previously overseen the machinery at Auchlinn Farm, including maintenance and service. The Pedrotti 250L grain dryer had been bought by the farm in August 2009. Mr Lindsay spoke of having had responsibility for looking after the grain dryer, including its ongoing maintenance. The dryer was bought from a local supplier he referred to as 'Ravenhill', in 2009. He spoke of his general experience of operating grain drying machines for more than 20 years and that he considered this machine was generally safe to use. Mr Lindsay stated that he showed Mr Ironside how to use the grain dryer in 2016. He had raised concerns about other health and safety issues on the farm with Mr Ironside previously, while still employed at Auchlinn Farm. He could offer no reason why Mr Ironside, or indeed anyone, would operate the machine in the way that was described to him.

[82] It was the evidence of Mr Lindsay who was not present at the time of the accident, that he had considered that one might be able to overcome the safety feature of the interlocking guard by inserting 'something' into it, such as a tool or similar or alternatively by possibly overcoming the electrical wiring system attached to the mechanism. Although these actions were theoretically possible, when questioned, he could offer no explanation as to why one would need or choose to do this.

[83] I also considered the evidence of Mr Craig Grant. He had a background in engineering, had undertaken formal training in farming, and had been farming since 2008. He spoke of how he had known Mr Ironside and had approached him about undertaking a new business venture in pig farming in 2016. He talked of how Mr Ironside managed the farm, and allocated work to witness Ryan McGibbon. He

stated that he would speak with Mr Ironside on a daily basis about their pig farming operations.

[84] Mr Grant was familiar with grain drying machines and spoke to having used them in his own farming work and to operating a similar, but smaller, model of grain drying machine on his own farm. He gave an opinion that the grain drying machines were generally safe to use, but that the operator had to be aware of dangerous parts inside the machines. This would be particularly relevant when cleaning out the grain dryer at the end of the harvest or before changing to a different crop during harvest. Mr Grant spoke of the clear warning signs affixed to the machine and the guidance to shut off power to the machine if one needed to access the inside parts during cleaning. Mr Grant could offer no explanation as to why a person would try to operate the machine in the manner that Mr Ironside had done on 10 November 2018. He agreed with the suggestion from Mr Edward that this could be considered reckless and stated that by acting in this way Mr Ironside was exposing himself to real and obvious danger.

[85] I also accepted the evidence of HSE Inspector David Gostick in reaching this determination. He gave evidence that the system of work operated by the deceased was unsafe. He did not understand why the deceased felt the need to do what he did. He said there was no benefit to doing what the deceased did. As mentioned above he spoke to the fact that the inspection door guard was an interlocking moveable guard integrated correctly into the main control system of the grain dryer. His evidence was that the guarding system could only be bypassed deliberately and intentionally. It could not happen accidentally or by chance. There was clear intent on the deceased's part to

misuse the inspection door guard and interlocking system. He spoke of there being a number of processes which required to be carried out by the deceased in order to bypass the guarding system. The outer and inner guards would both have to be removed. The door guard would then have to be turned 180 degrees to refit upside down. His evidence was that it required a certain amount of force to refit the door upside down, as the deceased had done otherwise it would fall off. It was, however, Mr Gostick's opinion that the interlocking guarding system was too easy to bypass.

[86] I also accepted the evidence of HSE Inspector Roger Upfold in this connection. Mr Upfold had been brought into the investigation of this accident to provide information and assistance to his colleagues particularly in relation to the regulatory and guidance framework relating to the design and use of the dryer and to what extent there had been compliance with that framework. Mr Upfold gave very detailed evidence in this connection. He clearly had a great deal of expert knowledge in this niche area and he was the author of guidance published by HSE on their website in relation to the Supply of Machinery (Safety) Regulations 1992 referred to above.

[87] Mr Upfold also provided his opinion on the design of the dryer and the circumstances of this accident. He expressed the opinion that the interlocking guard on the dryer was an appropriate safety measure given the level of risk. He considered that Mr Ironside's actions in rotating the outer door guard and replacing it upside down amounted to deliberate misuse. He stated that in terms of the Supply of Machinery (Safety) Regulations 1992. Paragraph 1.4.1 referred to above, manufacturers such as the manufacturer of the dryer in this case are required to consider the possibility of

deliberate misuse and take steps so that it was not easy to do the wrong thing He spoke to the post-accident modifications carried out to the dryer. He considered these resulted in it being much harder for a user to deliberately bypass the guarding system and he was satisfied with the modifications. He gave evidence that Fratelli Pedrotti had supplied 3,500 grain dryers in the UK over the last 10 years. He was not personally aware of any other incidents involving Fratelli Pedrotti manufactured grain dryers.

Section 26(2)(g) – any other facts which are relevant to the circumstances of the death.

[88] There was no evidence to support any finding that there are other facts which are relevant to the circumstances of the death.

Section 26(1)(b) – Such recommendations (if any) as to any matters mentioned in subsection (4) as the sheriff considers appropriate

[89] As indicated in my determination I did not consider it appropriate to make any recommendation in this case. According to Section 26(5) a recommendation under Section 26(1)(b) may (but need not) be addressed to (a) a participant in the inquiry (b) a body or office-holder appearing to the sheriff to have an interest in the prevention of deaths in similar circumstance. Fratelli Pedrotti s.r.l., were the only other participants in this inquiry. I heard evidence that following the accident they had carried out modifications to this type of dryer and both Mr Gostick and Mr Upfold were satisfied with those modifications. I did not consider that there was anything to suggest that any further steps required to be taken.

Conclusion

[90] The formal findings I am required to make in terms of the Act are set out at the beginning of this determination. None of the witnesses were able to explain why Mr Ironside might have decided to remove and refit the outer guard door of the dryer in the way that he did but the consequences of his doing so proved to be tragic.

[91] I am grateful to Ms Eadie and Mr Edward for their helpful and respectful presentation of evidence and submissions and to all of the participants for the assistance which their involvement gave to the Inquiry.

[92] Due to the coronavirus pandemic it was not possible to allow members of the public including members of Mr Ironside's family, to be physically present at the Inquiry and this was most unfortunate. I would however wish to express my sincere condolences to the family of the late Mr Ironside for their sad loss as a result of this tragic accident.