

SHERIFFDOM OF LoTHIAN AND BORDERS AT EDINBURGH

[2017] FAI 9

B1390/16

DETERMINATION

BY

SHERIFF FIONA TAIT

UNDER THE FATAL ACCIDENTS AND SUDDEN DEATHS INQUIRIES (SCOTLAND)
ACT 1976

into the death of

ALLAN LESLIE DUNCAN
(born 5 May 1945)

Edinburgh, April 2017

The Sheriff, having considered the cause, determines:

1. In terms of section 6(1)(a), Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976 that Allan Leslie Duncan, born 5 May 1945, died at Old Waughton Farm, East Linton, East Lothian and was pronounced dead at 1631 hours on 26 February 2016.

Mr Duncan died as a result of an accident which occurred at Old Waughton Farm on that date at 1525 hours approximately. Mr Duncan was in the course of his occasional, paid employment with Ian Wilson. Mr Duncan and Mr Wilson were within a drainage trench which they had excavated.

2. In terms of section 6(1)(b) of the said 1976 Act that the causes of death were 1(a) chest and pelvic trauma, 1(b) entrapment within a collapsed agricultural drainage trench and 2. ischaemic, hypertensive and valvular heart disease. The accident occurred when

Mr Duncan and Mr Wilson were within the drainage trench and a small section of the side wall collapsed. As they moved from the initial area of collapse to exit the trench, a further section of the side wall collapsed, striking Mr Duncan and pinning him against the opposing side wall. The precise cause of the collapse of sections of the side wall is not known. It is not uncommon for soil to collapse into an unsupported excavation.

3. In terms of section 6(1)(c) of the said 1976 Act that a reasonable precaution whereby Mr Duncan's death and the accident resulting in his death might have been avoided would have been for the guidance published by the Health and Safety Executive on Excavation to have been adopted and, in particular, either to excavate the sides of the trench at an angle of not more than 45 degrees or to step the sides of the trench in 1 metre steps.

Note

The Evidence

[1] Evidence in the inquiry was led on 29 March 2017. Ms. Emma Stewart, Procurator Fiscal Depute represented the Crown. Mr Gavin Anderson, advocate represented Mrs. Alexandra Duncan, who is Mr Duncan's widow. Mr David Cairns, solicitor represented Ian Wilson.

[2] The Crown led evidence from Ian Wilson for whom Mr Duncan was undertaking casual, paid employment at Old Waughton Farm, East Linton and from Hazel Dobb, HM Inspector with the Health and Safety Executive.

[3] The parties had entered into an extensive Joint Minute of Agreement.

[4] No evidence was led on behalf of Mrs. Duncan or Mr Wilson.

The Submissions

[5] In submissions, all parties were agreed on the findings in terms of section 6(1)(a) and (b) of the 1976 Act. Those mirrored the terms of the Joint Minute in respect that shortly before

[6] 1525 hours on 26 February 2016, Mr Duncan and Mr Wilson were within a drainage trench (recently excavated by them) to lay a drainage pipe. While within the drainage trench, a small section of the side wall collapsed. As they moved from the initial area of collapse to exit the trench, a further section of the side wall collapsed, striking Mr Duncan and pinning him against the opposing side wall. Mr Duncan was pronounced life extinct at 1631 hours on 26 February 2016 at Old Waughton Farm.

[7] The Crown's submission in respect of section 6(1)(b) of the 1976 Act was based on the findings in the Post Mortem Examination Report, Crown Production number 1, the details of which are agreed in the Joint Minute at paragraph 15. In respect of the cause of the accident, it was submitted that the exact cause of the collapse of the trench wall remains unknown. However, it is not uncommon for soil to collapse into an unsupported excavation.

[8] In respect of section 6(1)(c) of the 1976 Act, the Crown submitted that Mr Wilson and Mr Duncan might have considered the guidance available in respect of excavations on the Health and Safety Executive's website. They should not have entered the trench without measures being properly in place to support the sides of the trench and to

prevent the sides falling in. The Crown accepted that Mr Wilson believed that he was doing the best and right thing based on his experience and knowledge of agricultural work.

[9] In respect of the guidance on excavations published by the Health and Safety Executive, its focus was submitted to be towards the construction sector although there was an overlap of risks between the construction and agricultural sectors. The risks for the agricultural sector of excavations were not focused by the Health and Safety Executive.

[10] In respect of section 6(1)(c) of the 1976 Act, Mr Anderson on behalf of Mrs. Duncan submitted that identification of the relevant Health and Safety Executive guidance and its adoption might have avoided the accident which occurred. The Crown was correct to identify that such guidance as was available from the Health and Safety Executive focused on the construction industry. There may be an element of confusion for those not involved in the construction industry but who are seeking guidance on excavations which may be relevant to other industries or sectors. The subtext of Hazel Dobb's evidence may be taken to be that there was scope for the guidance on excavations to be more focused on the agricultural sector.

[11] Further, Mr Anderson submitted that Hazel Dobb's uncontradicted evidence was that a range of measures should be taken in excavation processes. She gave four examples, namely:

1. the angles of the sides of a trench ought to be not more than 45 degrees,
2. the sides of a trench could be stepped in steps of 1 metre,

3. the use of a shoring system and
4. the use of trench boxes.

Each of the four measures may be taken to stabilise a trench dug within soil. However, in the present circumstances the first two measures would be acceptable and appropriate for the particular task. The adoption of either of those two measures would represent a precaution whereby the death of Mr Duncan might have been avoided.

[12] In respect of section 6(1)(c) of the 1976 Act, Mr Cairns on behalf of Ian Wilson submitted that the purpose of the inquiry was not to apportion blame but to explain the circumstances of Mr Duncan's death.

[13] I was invited to find Ian Wilson to be credible and reliable and to have given his evidence in a straightforward manner. I would be entitled to find that not only had Mr Duncan and Mr Wilson been close friends over a long time but they were both risk averse. Ian Wilson would not have placed himself or Mr Duncan in any danger knowingly. They had an equal role in planning the drainage work and in carrying it out. They had discussed where to place markers, the direction of the drain and how the work would be carried out. Neither appeared to be aware of any available guidance on excavations. An inference could be drawn that Mr Duncan was content to work alongside Ian Wilson in the manner which they were. Ian Wilson was confident that Mr Duncan would have voiced any concern about their mode of working or would have left the site if any concern were not addressed. Mr Duncan was as experienced as Ian Wilson if not more experienced in farming matters.

[14] The practice adopted by Ian Wilson in excavation of the drainage trench was widespread within the agricultural community. Such practice was informed by inherited wisdom. Mr Wilson was not operating under any financial or time pressure. Mr Wilson had had no previous difficulties with the Health and Safety Executive. Hazel Dobb had not been made aware of any other concerns about Mr Wilson's practice and was satisfied that Mr Wilson was risk aware.

[15] Mr Cairns acknowledged the guidance available from the Health and Safety Executive. Its application to the agricultural sector might not be immediately obvious. There was a widely held misconception that certain types of soil could be trusted not to collapse when excavating a trench. The practice undertaken at Old Waughton Farm was not unique.

[16] Since the accident, Ian Wilson has taken guidance from the Health and Safety Executive support services.

[17] No party proposed any findings in terms of section 6(1)(d) or (e). I am content that there should be no finding in terms of section 6(1)(d) or (e) of the 1976 Act.

Determination

[18] The evidence in the present inquiry gave rise to no dispute. Witnesses were subject to very limited or no cross-examination. I found both witnesses to be credible and reliable.

[19] The majority of the evidence was agreed in terms of the Joint Minute to the following effect:

1. Prior to his retirement in 2011, Mr Duncan worked as a farm manager on a local farm in Aberlady. Immediately prior to his retirement, he undertook tractor work. On various occasions between 2011 and February 2016, he undertook casual, paid employment helping Ian Wilson at Old Waughton Farm. (Joint Minute paragraph 2)
2. On 26 February 2016, Mr Duncan was working at Old Waughton Farm. He was assisting Ian Wilson with the installation of a field drain. He had assisted with a similar project at the farm some years earlier. (Joint Minute paragraph 3)
3. 26 February 2016 was the third day on which Messrs. Duncan and Wilson had been installing the drainage trench. They started work at approximately 1000 hours, with the intention of working until 1600 hours with a break for lunch. (Joint Minute paragraph 4)
4. The only plant or equipment being used in the installation was a digger, an aluminium ladder, a spade, a measuring stick and a laser. (Joint Minute paragraph 5)
5. Shortly before 1525 hours, Messrs. Duncan and Wilson had entered the drainage trench using the aluminium ladder and were working together to lay a drainage pipe. (Joint Minute paragraph 6)
6. Whilst within the drainage trench, a small section of the side wall collapsed. As Messrs. Duncan and Wilson moved away from the initial collapse to exit the trench, a further section of the side wall collapsed and struck Mr Duncan,

pinning him against the opposing side wall. Ian Wilson was also struck but was able to free himself. (Joint Minute paragraph 7)

7. Ian Wilson made a 999 call at approximately 1530 hours. (Joint Minute paragraph 8)
8. The Scottish Fire and Rescue Service was the first of the emergency services to arrive at Old Waughton Farm at approximately 1535 hours. (Joint Minute paragraph 9)
9. There was no shoring within the drainage ditch; the side walls had not been shored. The Scottish Fire and Rescue Service used the aluminium ladder and lengths of worktop (found in the farm shed) as makeshift shoring to support the side walls of the trench while attempting to rescue Mr Duncan. (Joint Minute paragraph 10)
10. Medic 1 activation occurred at 1538 hours. Dean Kerslake, consultant in Emergency Medicine at the Royal Infirmary of Edinburgh left the hospital at 1545 hours and arrived at Old Waughton Farm at 1616 hours. (Joint Minute paragraph 11)
11. Mr Duncan was removed from within the collapsed trench after Dr. Kerslake's arrival at Old Waughton Farm by means of a rope and straps placed around his chest by a fire service mechanic which were attached to the digger operated by Ian Wilson. Sam Young of the Scottish Fire and Rescue Service continued to dig the soil away from around Mr Duncan. (Joint Minute paragraph 12)

12. Mr Duncan was intubated at 1620 hours and placed in a pelvic splint.

Cardiopulmonary resuscitation was started at that time. Mr Duncan was pronounced life extinct at 1631 hours at Old Waughton Farm by Dr. Kerslake.

(Joint Minute paragraph 13)

13. A post-mortem examination was carried out by Dr. Ian Wilkinson, consultant forensic pathologist on 4 March 2016. Dr. Wilkinson's report dated 20 April 2016 is Crown Production number 1. (Joint Minute paragraph 14)

14. The medical cause of Mr Duncan's death was recorded in Crown Production number 1 as: 1(a) chest and pelvic trauma 1(b) entrapment within a collapsed agricultural drainage trench and 2. Ischaemic, hypertensive and valvular heart disease. (Joint Minute paragraph 15)

15. Crown Production number 3 is a document entitled "*Structural stability during excavations*". It is basic guidance published by the Health and Safety Executive on its website. It is freely available to download. (Joint Minute paragraph 17)

16. Crown Production number 4 is a guidance document entitled "*Excavation: What you need to know as a busy builder*". It is published by the Health and Safety Executive and is freely available to download from the Executive's website. (Joint Minute paragraph 18)

17. Crown Production number 5 is a document entitled "*Good Practice Guide for the Management of Shoring in Excavations: Part 1-Management Process*". It is published by the Construction Plant-hire Association in partnership with the Health and

Safety Executive and is freely available on the internet. (Joint Minute paragraph 19)

18. Production number 1 for Mrs. Alexandra Duncan is a guidance document entitled "*Health and Safety in Construction, HSG150*". It is freely available to download from the Health and Safety Executive's website. Paragraph 341 and following paragraphs contain guidance in relation to excavations. (Joint Minute paragraph 20)

[20] Ian Wilson is the owner of and farmer at Old Waughton Farm. He described the farm as a mixed farm where he had farmed all of his adult life. He also undertakes contracting work for neighbouring farms. Mr Wilson is assisted on the farm by his wife and casual help. Allan Duncan had been a very good friend of Mr Wilson for over 30 years.

[21] Mr Wilson characterised Mr Duncan as an old school, agricultural person who would not suffer fools. Mr Duncan was knowledgeable, very conscientious and experienced in farming matters. Mr Wilson trusted him, would bounce ideas off him and value his opinion. Mr Duncan had been the farm manager at Aberlady Mains and had carried out a lot of drainage work over the years. Mr Duncan had been very happy to be called upon by Mr Wilson to assist with the drainage project.

[22] Mr Wilson spoke to the drainage project which he had been undertaking over recent years. The original field drains had been installed more than 100 years before and were relatively shallow. As modern farm machinery is heavier, the drainage pipes were broken regularly.

[23] Mr Wilson and Mr Duncan had been working for three days on relaying the field drains. Before they had started they had discussed where the drains would go and had put in a marker post to aim for. Mr Duncan was to work out the levels of ground and the most suitable area through which to go to avoid having to excavate too deeply.

[24] Mr Wilson spoke to the different types of soil. They were working with fairly heavy clay which he considered to be pretty stable soil. There had been some sand at the start of the excavation, earlier in the week, which Mr Wilson understood caused the soil to be less stable.

[25] The trench at the point of the accident was 4 1/2 to 5 feet deep.

[26] In examination in chief, Mr Wilson was asked about the safety measures employed. He described it as common agricultural practice to dig with a two feet wide bucket, with a width of two and a half buckets at the top, tapering down to one bucket width at the bottom where the pipe will be laid. A length of 8 to 10 yards would be excavated, levels would be checked and the pipe then laid. It was much safer to work in freshly dug ground; Mr Wilson would not go into the trench if there were any signs of cracking in the sides of the trench. On the day of the accident, there was no cracking to indicate any issues.

[27] Asked whether he had considered the use of any shoring or other support for the sides of the trench, Mr Wilson responded that it was usually considered adequate to dig a trench "two bucketful wide" and that shoring would only be considered if workers were to be in the trench for a long time. He and Mr Duncan were in and out of the trench within a few minutes. Mr Wilson was not aware of any shoring being available for the

agricultural industry. Similarly asked whether he had looked for any advice or guidance, Mr Wilson responded that both he and Mr Duncan had a lifetime of agricultural experience. He did what was done and had been done in the past.

Mr Wilson had not consulted the Health and Safety Executive website before the accident. He has done since and commented that there was virtually no guidance on agricultural drainage. The guidance relates to building site drainage which he described as entirely different.

[28] Mr Wilson then spoke to the circumstances of the accident, reflecting the terms of the Joint Minute as set out above. He was operating the digger, digging the trench for a length of 8 to 10 yards at a time. Mr Duncan would use the laser device to check the floor of the trench was level. Mr Wilson would then roll the drainage pipe into the trench. Mr Duncan had the spade and would “knock away” any loose bits which had fallen in with the pipe. The pipe would be laid and the process repeated for the next section. They would be in the trench for two to three minutes per section.

[29] Mr Wilson described that both he and Mr Duncan were surprised when the first section of side wall collapsed. The soil was blue clay which normally would not move. Once it moved it was an unknown quantity and their priority was to get out of the trench. They were heading towards the end of the trench to go up the slope and out of the trench. There was still no cracking or any other indication of instability on the side wall. They walked at speed, with Mr Duncan following behind. There was no reason to run.

[30] Mr Wilson then spoke to the second collapse of soil which struck both of them and his unfortunately futile efforts to free Mr Duncan by attempting to dig soil away. He took immediate steps to call emergency services and his wife for assistance. As recorded in the Joint Minute, the emergency services attended.

[31] The procurator fiscal depute examined Mr Wilson on Crown Production number 2. This is a book of photographs taken by Suzanne Dearden, a scene of crime officer, at Old Waughton Farm on 27 February 2016, as agreed in paragraph 16 of the Joint Minute. Photograph 50 is a view of the west end of the trench. Mr Wilson was examined on photograph 50 and what was described as showing an old drain sticking through the wall of the trench. He spoke to being unaware of the presence of the drain when digging but offered that it may have been what caused the soil structure to be damaged. He offered that view from his experience. There were no plans or surveys to map the old drainage system. He would have expected to have been alerted to the presence of an old drain by it being burst in the excavation process. There had been no water to alert him and he had not noticed the drain before the accident.

[32] Mr Wilson described his attitude to health and safety as being very careful. He would not take any risks. He would never knowingly put anyone else or himself in danger.

[33] Under cross-examination by Mr Anderson on behalf of Mrs. Duncan, Mr Wilson accepted that he had learnt since the accident that the trench should have been wider. Any knowledge which he had of how to dig a trench or of how soil might behave had

been garnered through his own lifetime experience in farming and from working with others.

[34] Mr Wilson expanded, under cross-examination from his solicitor, that he was now aware of guidance on excavation by the Health and Safety Executive and further was aware that soil cannot be trusted. Through the National Farmers' Union, Mr Wilson has had a full farm inspection and the view was expressed that there were no concerns about his health and safety procedures.

[35] I heard evidence from Hazel Dobb who is an HM Inspector with the Health and Safety Executive. Ms. Dobb's role covers the agricultural sector amongst others. She is the inspector who was responsible for the investigation at Old Waughton Farm after Mr Duncan's death. A dual investigation was undertaken with Police Scotland.

[36] Ms. Dobb attended at Old Waughton Farm and understood that excavation work had been carried out to lay a new field drain. Asked whether she would have had any observations on the manner in which the work was executed, she responded that she had seen excavations carried out on other sites in a similar manner. Had she been on site, she would have instructed anyone within the excavated area to leave it and she would have served a prohibition notice as the risk of the trench collapsing would be very high.

[37] Ms. Dobb spoke to the appropriate measures to take to ensure that an excavation is undertaken safely as follows:

1. the angles of the sides of a trench ought to be not more than 45 degrees,
2. the sides of a trench could be stepped in steps of 1 metre,

3. the use of a shoring system and
4. the use of trench boxes.

[38] She expanded that in the particular circumstances at Old Waughton Farm that either of the first two measures would have been acceptable and appropriate for the task. By the time she had attended at the locus, the trench did not have an obvious angle and there had been further collapse.

[39] Ms. Dobb explained that the Health and Safety Executive had stopped agricultural inspections for a period of time but these had been reinstated over the last three years, with particular focus on safety around animal handling and slurry. Educational work by the Executive about excavations was generic and not specific to agriculture. Awareness Days for the agricultural community do not currently cover excavations as they focus upon those areas resulting in the highest number of fatalities. An individual seeking specific guidance would have to approach the Executive which would then assist. Ms. Dobb agreed that the method employed for excavation at Old Waughton Farm was widely done by those carrying out excavations across various industry sectors.

[40] The Crown then explored the availability of Health and Safety Executive guidance on excavations. Ms. Dobb spoke to Crown Production numbers 3, 4 and 5 which were agreed to be guidance published by the Executive and available to download from its website. While unaware whether these documents were accessible from the agricultural section of the website via a link, Ms. Dobb was confident that a search of the website would produce them. The risks of excavation across industry

sectors are the same. Although Crown Production number 4 refers to “a busy builder”, the guidance applies equally to agricultural practices.

[41] Examined on the significance of particular soil types, Ms. Dobb’s evidence was that it was a widely held misconception that certain types of soil could be trusted not to collapse when excavating a trench.

[42] Cross-examined on behalf of Ian Wilson, Ms. Dobb spoke to Mr Wilson’s approach to risk assessment and that he had been able to demonstrate that he considered risk in undertaking day to day activities.

[43] She concluded by highlighting the Health and Safety Executive’s commitment to reduce the high incidence of accidents within the farming community. She had encountered no resistance from Mr Wilson to that goal.

[44] From the evidence of these witnesses, I conclude that Mr Duncan was fatally injured when a small section of the side wall of the drainage trench collapsed. As Mr Duncan and Mr Wilson moved from the initial area of collapse to exit the trench, a further section of the side wall collapsed, striking Mr Duncan and pinning him against the opposing side wall. While the precise cause of the collapse of sections of the side wall is not known I accept Ms. Dobb’s evidence that it is not uncommon for soil to collapse into an unsupported excavation.

[45] I find that a reasonable precaution whereby Mr Duncan’s death and the accident resulting in his death might have been avoided would have been for the guidance published by the Health and Safety Executive on Excavation to have been adopted and,

in particular, either to excavate the sides of the trench at an angle of not more than 45 degrees or to step the sides of the trench in 1 metre steps.

[46] I note that since the accident, Ian Wilson has taken guidance from the Health and Safety Executive support services.

[47] I have noted that there was considerable agreement between the Crown and on behalf of Mr Duncan's family and Ian Wilson. I am grateful to parties' representatives for their careful preparation and presentation at the inquiry.

[48] Finally, I should like to extend my sympathy to Mr Duncan's family who attended the inquiry and showed great dignity throughout. Condolences were extended to Mr Duncan's family by the Crown and on behalf of Ian Wilson. It was apparent from the evidence that Mr Duncan was well liked and well respected both within his local community and the farming community.