2015FAI7

SHERIFFDOM OF LOTHIAN AND BORDERS AT EDINBURGH

DETERMINATION

by Sheriff N.A.Ross

In an Inquiry held under the Fatal Accidents and Sudden Deaths (Scotland) Act 1976

into the death of

ALAN DAVID BUSSELL

Edinburgh February 2015: The Sheriff, having resumed consideration of the cause, finds and determines as follows:

1. **In terms of section 6(1)(a) of the Fatal Accidents and Sudden Deaths (Scotland) Act 1976 (the "Act"):**

Alan David Bussell, whose date of birth was 9 June 1956 and who resided in Dunbar, died on 1 May 2013 at Musselburgh Race Course, Musselburgh at an undetermined time between 08.55 and 09.20 hours.

2. **In terms of section 6(1)(b) of the Act:**

The cause of death was compression and crush injuries of the chest consistent with the pressure applied by the downwards movement of a brick clamp attached to the boom of a lorry crane, causing the deceased to be crushed between an arm of the brick clamp and a load of materials.

3. **In terms of section 6(1)(c) of the Act:**

The death and any accident would have been avoided by the temporary deactivation of the remote control console whereby the crane's movement was remotely controlled by Mr Bussell. Such a precaution was reasonable, and was necessary to avoid the risk of fatal injury.

4. **In terms of section 6(1)(d) of the Act:**

The system of working was defective and unsafe in that it did not involve the deactivation of the remote control handset on every occasion prior to the operator approaching the crane.

5. **In terms of section 6(1)(d) of the Act:**

There are no other facts relevant to the circumstances of Mr Bussell's death.

Note:-

This Fatal Accident Inquiry was held on 19 January and 20 January 2015 at Edinburgh. The Crown was represented by Mr O'Reilly. The only other representation was Mr Conway, solicitor, on behalf of the deceased's family.

Evidence was heard from three witnesses: Norman Buchanan and Peter Dodds (both Health and Safety Executive officers) and the deceased's wife, Mrs Margaret Bussell. While the HSE officers' evidence was tested by questioning, the factual background was not in dispute, and I was able to accept all the witnesses as credible and reliable.

Having considered this evidence, together with the documentary evidence referred to, I found the following facts to be proved, namely that:

1. Alan David Bussell (date of birth 9 June 1956) died on 1 May 2013 at Musselburgh Race Course, Musselburgh. The cause of his death was compression and crush injuries of the chest.

2. Mr Bussell was a director and employee of Strawberry Corner Garden Centre Limited (the "company"), a family-owned company which specialised in the supply of horticultural goods such as paving slabs, plants and other products. He took an active role in company operations, and was an experienced and licensed HGV driver. The company owned a single flat-bed lorry. The lorry was only ever operated by the deceased and his brother, William, also an experienced HGV driver. The deceased would, as part of his duties, make deliveries of supplies to customers using the flat-bed lorry, of varying amounts of materials. There is no record of any enforcement action being taken against the company by either the Health and Safety Executive or the local authority, East Lothian Council.

3. The said lorry was a 6-wheel Volvo FM330 flatbed lorry fitted with a PalfingerPK16001-K lifting crane. The Palfinger crane was mounted at the rear of the flat bed and has a reach of 7.7 metres with a safe working load of 2000kg at that radius. The Palfinger crane was operated by means of a Palfinger mobile remote control transmitter unit (the "RC console"), which is supplied with an operating manual. The RC console is designed to be worn

on a strap which, according to preference, is placed either around the operator's neck or the operator's waist, and allows the operator to move about while operating the crane remotely.

4. The crane comprised a vertical column fitted with two articulated booms. The second boom included a hydraulic boom extension to which a brick clamp attachment was fitted. The brick clamp was a large attachment which operated in a scissor movement to compress and then lift solid loads. It comprised two arms, each with parallel longitudinal beams, and was suitable for lifting loads capable of being lifted by lateral compression. Each arm also had, above the beam, an eye suitable for hooking straps or chains, to allow the lifting of bagged loads. The brick clamp itself weighed between 300 and 350 kg. The crane has a pressure relief valve, which will stop the crane in the event of excessive force being applied to the crane.

5. On the date of his death, Mr Bussell was engaged in delivering a load of materials to Musselburgh Race Course. He drove the lorry and materials to a storage yard there, and parked it. Mr Bussell was experienced in the operation of lorries equipped with cranes. He had at least 8 years' experience of using such equipment, including use of an RC console. The company purchased the crane in 2011 from Outreach Limited, which supplied and fitted the Palfinger crane to the flat bed lorry. Outreach Limited supplied Mr Bussell with four hours' familiarisation training prior to taking delivery of the crane, but this was primarily focused on the use of the stabilisation rams

fitted to the lorry. There is no record of his having undertaken formal training in the use of crane equipment. He had operated similar crane equipment for approximately 8 years without any reported incident. He had used the Palfinger crane and RC console for approximately 18 months, without reported incident. He worked 5 days per week, and carried out deliveries most days from 8am to 5.30pm. During the company's busy period, from April to September each year, he would make up to 20 deliveries per day. He was therefore familiar with the operation of the said crane and RC console, and experienced in their use.

6. The RC console operated by Mr Bussell was a Palfinger battery-operated remote control which operated by a radio transmitter. The RC console was operated by a number of control levers and switches which relate to the different functions of the crane. Six of these levers, including the controls to raise and lower the brick grab, were arranged in a row from side to side, operating respectively (from left to right) column slew, first boom raise and lower, second boom raise and lower, boom extension, brick clamp rotate and brick clamp open and close. Each of these six levers were bidirectional centre-sprung levers, which would spring back into the upright central position when released, thereby ceasing the relevant crane movement. The RC unit operated by Mr Bussell was a "small" Palfinger RC console, and has a guard rail which does not extend full around the switch area. There is a guard rail which extends around, and above the height, of these switches, and serves to protect these switches, to a degree, from inadvertent operation by lateral, but

not vertical, forces. The guard rail does not extend around the entire unit, but leaves a gap on the side adjacent to the operator's abdomen. On that side, only the corner areas are protected. Between the said row of switches and the operator's abdomen, there is a bright red emergency stop button next to the operator's abdomen. The emergency stop button is easily seen and identified as such, and is the largest button on the handset. To the immediate right of the emergency stop button is a smaller isolator button which controls power to the RC console, thereby turning it on and off and isolating it from operation. The RC console automatically deactivates after five minutes of non-use.

7. Several other types of RC consoles are available on the market, some of which have guard rails which extend around the whole upper circumference of the unit, and completely surround the switch area. These include a "large" model Palfinger handset. The other types of RC consoles vary as to whether a guard rail extends around the whole upper, switch area, or whether the guard rail leaves a gap next to the operator's abdomen. These designs preponderantly have emergency stop and isolation buttons.

8. The RC console was supplied with a manual, which contained instructions on the operation of the crane. Amongst other warnings, it stated: *"Danger! If the crane operator attaches and removes the load without first pressing the emergency cut-off button, this many lead to unintended operation of crane functions. There is acute danger of fatal injury"*. The instructions further state: *"Attaching the load:*

Move crane to the intended position. Press the emergency cut-off button. Attach the load properly at the lifting apparatus. Leave the danger zone. Release the emergency off push-button. Press start crane operation button." And *"Removing the load: Move crane to the intended position. Press the emergency cut-off button. Remove the load properly at the lifting apparatus. Leave the danger zone. Release the emergency off push-button. Press start crane operation button."* The description of the button as an "emergency button" is a misnomer, because as described it is designed for routine, non-emergency use. Nonetheless, the said instructions recognise the potential danger of failing to isolate or remove the RC console before approaching the crane. Were these instructions to be followed, they would amount to a safe system of working with the RC console and the crane.

9. The RC console is supported by a single strap, which can be worn round the neck or round the waist, according to the preference of the operator. It can also be worn to the side of the body, not just the front. When worn around the neck, the RC console rests against the operator's abdomen or body, but can swing freely. At the material time, Mr Bussell was wearing the RC console around his neck. It was therefore free to swing, and if he were adopt a leaning position, would be likely to dangle vertically.

10. British Standard EN 13557 applies to the use of cranes. It is, however, a generic standard which applies to cranes of all types. The said crane and the RC console complied with this standard.

11. At the material time Mr Bussell was engaged in unloading goods from the lorry within the yard. He was operating alone, as was customary. His task required the use of the Palfinger crane, operated by the Palfinger RC console, to pick up goods from the flat bed lorry and deposit them within the yard. He wore the RC console around his neck. The goods on the lorry were of varying types, and included loads of gravel (which were contained in one-tonne bags), compost (shrink-wrapped, palletised) and chip bark (also palletised). Mr Bussell was unloading goods from the cab-end of the flat bed lorry, using the crane, which he was controlling using the RC console.

12. His death occurred at an undetermined point between 08.55 hours, when he is last recorded as having been observed operating the crane, and 09.20 hours, when his body was discovered by course staff. He was pronounced dead at 09.50 hours. Firefighters attended the scene, and later informed the investigator that Mr Bussell was found on the flat bed lorry, leaning over a one-tonne bag of pebbles, with the innermost arm of the crane brick clamp pressing down upon his neck, shoulder and upper back, with its outermost arm in an elevated position on top of the compost pallet. Mr Bussell was pronounced dead at the scene.

13. Mr Bussell's body was found towards the front of the lorry near the cab, with his head facing the rear of the lorry and his feet facing the cab. Mr Bussell's body was trapped between the arm of the brick clamp and the one-tonne bag

of pebbles. The RC console was trapped between Mr Bussell's abdomen and the bag of pebbles.

14. Mr Bussell's body was trapped over and between two loads on the flat bed, to the front (cab) end of the flat bed. The two loads were bulky and comprised, to his left hand side, a palletised load of shrink-wrapped 20kg bags of compost and, to his right hand side, a one-tonne reinforced canvas bag of pebbles. There was a narrow gap of, at most, 300mm between the two loads. He was facing the rear of the lorry. His feet were angled towards the cab end. It is likely that, when he sustained injury, he was positioned to the front (cab) side of these two loads, and was facing rearwards. The left hand load was found with two strops (slings) underneath the pallet. The two strops lay under the pallet from side to side on the lorry flat bed. The strop nearest to where Mr Bussell was positioned (frontmost on the flat bed) lay fully under the pallet with both ends showing, and required only to be attached to the crane in order to lift the pallet. The strop furthest away from Mr Bussell's position (rearmost on the flatbed) lay only partly passed under the pallet. It is therefore most likely that, immediately prior to sustaining injury, Mr Bussell was intending either to push or to pull the rearmost strop to pass it fully under the pallet, prior to attaching both strops to the brick clamp. It is not clear what stage he reached in this operation.

15. In order to complete the passing of the strop under the pallet, Mr Bussell would require to lean over either or both of the loads, in order to reach down

to the flat-bed level and pull or push the strop through. As Mr Bussell wore the RC console around his neck, it was foreseeable that, as he did so, the RC console would come into contact with either or both of the loads, or his own body, or other projecting objects. Causing inadvertent loading on the switches would, in the absence of isolating the RC console, cause the switches to operate and the crane, or part thereof, to move. The RC console was discovered, subsequent to the accident, not to have been isolated. This failure to isolate the RC console created a risk of inadvertent operation, and consequently fatal injury.

16. The precise mechanism whereby Mr Bussell sustained his fatal injuries is unknown. There were no eye-witnesses to the event. From the discovery of the RC console trapped underneath Mr Bussell's abdomen, the most likely explanation for the event is that the lever switches on the RC console were operated, by being pressed forward, by accidental means. It is most likely that Mr Bussell, while working underneath the brick clamp, caused or permitted the RC console to operate, thereby bringing the crane boom and brick clamp down upon his upper body, and without sufficient opportunity for him to raise the crane boom again.

17. The RC console was reported to be found at Mr Bussell's waist level. It is most likely that the RC console was operated accidentally while Mr Bussell was underneath the crane brick grab and engaged in carrying out the task of passing strops under the palletised load. It is not possible to know precisely

how the RC console came to be operated while Mr Bussell was under the brick grab. The RC console was secured by a single strap round Mr Bussell's neck, leaving it free to dangle from Mr Bussell's neck. The length of the strap was not recorded by investigators. The RC console was found trapped under Mr Bussell's abdomen, but it is not known whether the RC console was at all times in front of Mr Bussell, or whether it only came to rest there. It can be worn to the front or to the side of the body. There are several possible mechanisms for operating the RC console. One possibility is that the RC console was operated by Mr Bussell's abdomen while leaning down over the loads. Another possibility is that the RC console rested against the load and was accidentally operated by another part of his body, such as inadvertently leaning a hand or elbow or knee upon it, for example to maintain or recover his balance. Another possibility is that Mr Bussell tripped and lost balance. Another possibility is that the RC console swung free and came into contact with an object on the flatbed, such as either of the loads, the strops or other object.

18. The causes of death are accurately set out in the post mortem report dated 16 January 2015 by Dr Ralph BouHaider and Dr Clare Bryce. The medical cause of death was compression and crush injuries to the chest. The injuries are consistent with being sustained as a result of being trapped between the brick clamp and the loads of materials.

19. Following the accident, the crane was noted to be operating functionally by means of the RC console. A single pallet of chip bark had already been unloaded from the lorry. The crane was raised and observed for creep over a period of ten minutes, and was found to maintain position. There is accordingly no evidence that any of the equipment was malfunctioning.

20. On the balance of probabilities the accident would not have occurred had it not been for the inadvertent operation of the RC console by means of a load force being applied to the relevant switch or switches. It is not possible to say what precise series of events led to such a load being applied, or whether the force was applied by Mr Bussell's abdomen, or by his placing a hand or knee on it, or by bringing it into contact with part of the load, or by allowing it to swing freely into an obstacle, or other mechanism.

21. The accident would most likely have been avoided had the RC console been rendered incapable of inadvertent use during the period Mr Bussell carried out operations on the load. One way to avoid this would have been for the RC console to be removed from the operator's neck when the crane was not being moved. Another way would be for the RC console to be isolated while the load was being prepared for attachment to the brick clamp. The only effective method of preventing the accident was the isolation of the RC console prior to approaching or working with the load.

22. The accident would also not have occurred had Mr Bussell not placed himself under the crane brick grab while carrying out his various tasks. It would be

possible to place the strops in place prior to lowering the brick grab, and then retire to operate the crane, before returning to attach the strops. However, such a method would be labour intensive and painstaking. The manual recommends the use of that method. The said precaution would be sufficiently laborious to present a temptation to short cut. It would be difficult to attach the strops without the operator placing himself near or under the crane boom. It is therefore not realistically feasible in this manner to avoid proximity to the crane boom at all times, and thereby avoid the risk of injury. In any event, such a method of working would not be rendered safe without isolating the RC console. Accordingly, the only effective method of working with an RC console is to isolate the handset each time the operator approaches the boom.

23. An apparently similar accident has been reported in 2013 in England, where a Stephen Dungate sustained fatal injuries when crushed by a crane in circumstances similar to those of Mr Bussell's case, and where a similar RC console was in use. While superficially similar, it is not possible on the available evidence to draw any conclusion as to the mechanism of Mr Dungate's accident, or as to how it may have been prevented, other than by isolation of the RC console in that case.

24. The risk of inadvertent operation of RC units in general is well understood in the transport industry, and is an obvious hazard. The Palfinger manual for the RC console contained warnings about fatal injury, as set out above.

ALLMI is a trade association for the transport industry, and has issued warnings about the inadvertent operation of RC consoles. Although some ALLMI documents are available to members only, the warnings about RC console operation are publicised to non-members also. In addition, trade magazines and journals carry trade safety information from time to time. Following the accident, this information has been highlighted by ALLMI (Crown production 4) and employers, such as Balfour Beattie Rail (Crown production 5), directing that remote units are deactivated before approaching the boom.

25. In order to operate safely, the RC console would require to be isolated every time the operator approached a load (unless the load was capable of being lifted by the brick grab scissor action). This might involve frequent isolation, depending on the number of loads to be lifted off the lorry, and unattached thereafter. Such isolation, although painstaking is the only effective precaution which would have prevented Mr Bussell's accident. Such a precaution is reasonable having regard to the high risk of fatal injury. It is not unduly onerous, as isolation requires no more than striking the emergency stop button, and reconnection requires the same button to be twisted. There are no identified further design features which would have reduced or removed the likelihood of Mr Bussell's accident occurring.

26. Accordingly, no design faults can be identified, either with the crane or the RC console. The design of the handset has not been proved to be the cause of

Mr Bussell's accident, nor can such cause be inferred on the available evidence. There were no technical faults with any of the equipment used by Mr Bussell. The only precaution which would have avoided the injury was by rendering the RC console inoperable every time Mr Bussell approached the crane, whether by isolation or removal of the RC console. Such precautions are a matter for training, and form part of any safe system of work in such circumstances. Mr Bussell, as director of the company, was directly responsible for establishing a safe system of work in these circumstances. In furtherance of such a safe system, it may be of assistance if written reminders were made, in the form of warning labels on the RC console and the crane boom, to remind operators to isolate the RC console before approaching the crane or load. Mr Bussell's death was caused by his failing to follow a safe system of work.

Discussion

[1] There is no reason to doubt, and neither party sought to dispute, that Mr Bussell's death was caused by the operation of the RC console which he wore round his neck, as he was positioned under the crane brick grab. It is most likely that the RC console was accidentally operated by some means, and lowered the brick clamp onto him.

[2] Two Health and Safety Executive investigators gave detailed evidence. Mr Buchanan spoke to his part of the HSE report dated 6 June 2013. He is a

general investigator, and carried out the initial investigation on the morning of Mr Bussell's death. Mr Dodds and he then conducted a further investigation the same afternoon. Mr Dodds is a specialist investigator, and he examined the workings of the crane and RC console, reporting in the second part of the same HSE report. Their factual evidence was not disputed, and I have set out the detail of this above.

[3] The inferences to be drawn from the factual evidence were the source of some discussion during the inquiry. Mr Conway, for Mr Bussell's widow, proposed that a finding be made that the accident was caused or materially contributed to by the lack of a complete guard rail between the RC console switches and the operator's body. It was also submitted that warnings might be more specific as to how switches might be inadvertently operated (such as by bits of clothing), or some sort of "push to operate" bar might be possible. The submission expressly stopped short of suggesting that a finding be made, under section 6(1)(c) or (d), as to the unsuitability of work equipment, on the basis that there was insufficient evidence to make an informed finding as to any shortcomings. I agree that the evidence was not sufficient to allow me to make such a finding, but I emphasise that there was no reason to anticipate that any such evidence existed or was likely to exist.

[4] Parties placed no emphasis on British Standard 13557, which applies to cranes. Adherence to this standard, so far as it relates to portable consoles (paragraph 5.2.3.1.4) would not have avoided this accident. The standard

does state (in relation to all consoles; paragraph 5.2.3.1.2) that "*Controls shall be designed or protected so that the desired effect can only occur by an intentional operation.*" However, it was recognised in submission that this requirement was impossible to meet in practice, and is an overstatement of what can be achieved. Finding a design which rendered unintentional operation impossible would involve such guards and protections that the controls could not be operated at all, even intentionally. No party urged any reliance on this standard, which appears to be overstated to the point of impracticability. I likewise place no reliance upon it.

[5] Mr Buchanan was prepared to accept the possibility that a full-circumference guard rail might have made inadvertent operation less likely, but was not prepared to go further than that, because the mechanism for working the switch was not known, and because he was not an expert in such machines. Mr Dodds similarly recognised a possibility, but went no further, because the switches would move if a "point load" (which he described as anything similar to a finger movement) were applied, and such a load could have been applied by a variety of mechanisms (such as leaning with a hand or elbow or knee on the console, or the console swinging against something, or hitting a fixed object). He could not confirm if a guard around the whole circumference of the RC console would have made any difference. Clearly, if a point load was applied from above the level of a guard rail, then the guard rail would make no difference. The positioning of the guard rail in relation to the point load would depend on a variety of factors, such as whether the RC

console was horizontal to ground level or was at an angle, whether the load was imposed from above or from the side, what actually administered the load, and so forth. This in turn would be influenced by whether the RC console pointed up or at an angle (in any of three dimensions), whether it swung free or was secured closely to the operator's body, and so forth. In order for a handset to be completely isolated, it would be necessary to shroud it in such a manner that it would prove an obstacle to the use for which it was intended.

[6] It was clear that I could make no finding about causation beyond stating that the accident was caused by the inadvertent operation of a switch or switches on the RC console.

[7] The RC console was found trapped between Mr Bussell's abdomen and the load below – in short, he was found lying on it. That might lead to an inference that it must have been his leaning on it that triggered the switch. However, it is necessary to recognise that that was the end point for Mr Bussell's movement, but not necessarily the starting point. It is not possible to exclude that Mr Bussell was semi-upright or upright when the RC console was operated, and that it was the weight of the brick clamp which pushed him down before he had a chance to operate the switch, or release it. It is possible that the RC console was resting on the load, and that Mr Bussell inadvertently leant on it, using a hand or elbow. The RC console may have been positioned in any position from completely tight against Mr Bussell's

abdomen to dangling freely into the gap between the two loads. We do not know if Mr Bussell was trapped immediately, or whether he had time to move upwards or sideways partially out of the way before the brick clamp descended. While it is possible to reach a preliminary conclusion from where his body was found, it is necessary to recognise a degree of caution in doing so, for those reasons. Accordingly, while the most obvious theory is that he leant over the load of pebbles, across the RC console, while reaching down to grasp the strop under the palletised load, I have not been able to treat this as proven fact. It follows that I cannot responsibly recommend safety improvements which follow from that scenario, but would not necessarily have avoided alternative explanations for the brick grab descending. Even if there had been a 360 degree guard rail, covering the area adjacent Mr Bussell's abdomen, there is insufficient evidence to conclude that the guard rail would have prevented the switch being operated by the clothing, or abdomen, of Mr Bussell. A guard rail will only protect against a flat load, not a variable, soft, or pointed load.

[8] One potential safety mechanism which was discussed in evidence was a fail-safe switch, akin to the squeeze handle common on lawnmowers. This might isolate the RC console automatically when not in use. However, as Mr Dodds pointed out, the RC console already has such a function, in that the lever switches are centre-weighted, and return to the middle, off position when released. As the RC console is designed for use with both hands operating lever switches at once, it is difficult to see how a further isolation switch

could be incorporated into the design, while rendering it workable for its purpose. I have considered this, but have nothing to add.

[9] What is undisputed is that the brick clamp descended as a result of the RC console being operated, by some load being applied to the switches which controlled the descent of the boom. It follows that, had the RC console been rendered safe, or removed from Mr Bussell's immediate operations, he would not have been in a position to operate it, and would not have suffered injury.

[10] I am satisfied that the only safe method of carrying out this operation was to isolate the RC console. Removal of the handset would just leave the handset out of reach, but would not prevent inadvertent operation by external means, such as falling, or being operated by a third party. Isolation, rendering the RC console inoperable, appears to be the only reliable method.

[11] There is no doubt that this method was intended by the manufacturer of the RC console, and was facilitated by the design of the RC console itself. The Palfinger manual points out the danger of fatal accident. It requires isolation of the RC console before approaching the load. This would have avoided the accident. The RC console is designed to make this operation straightforward. There is a large, red button which sits proud of the other switches, and is closest to the operator. It is easy to identify and easy to operate. It is operated by a single press, and reset by twisting so it pops up again. It is an easy and practical system.

[12] It is odd that the red button is described as an "emergency button", when it is not primarily designed for emergency. It is designed for frequent, routine, operation as part of a safe system of work. In my view, however, nothing turns on this nomenclature, as the function of the button is almost self-evident. It may be that Palfinger can consider a change of designation, to avoid any suggestion it is only rarely to be used, but it is not sufficiently central to the case for me to make a formal recommendation.

[13] It follows, therefore, that the failure was not one of equipment, but of system of work. Mr Bussell, unfortunately, caused the machinery to operate due to his inadvertence. This would have been avoided had a safe system of work been in place. That system would have involved operation of the "emergency" button each and every time he approached the crane boom. As director of the company, it was his duty to recognise this requirement, and to enforce the same, and to practice it himself. In my view, the danger of the crane operating without warning was self-evident, and should have been well within the contemplation of an experienced crane-operator and driver as Mr Bussell.

[14] I have no difficulty in agreeing with the submissions on behalf of Mr Bussell's widow that, because this is an issue of safe practice, it is appropriate that reminders be made to those who operate RC consoles, that they should be routinely isolated every time a load is approached. I have stopped short of making this a formal recommendation, however, because the evidence shows

that this risk is already well-recognised within the transport industry, and is in any event a self-evident risk. I would suggest that any safe system of work is assisted, and encouraged, by the use of visual reminders. It may be of assistance if written warning labels were affixed to the RC console and to the crane boom, to reinforce the practice of isolating the RC console every time the operator approaches the crane. The safe system itself is, however, a matter of training, practice and enforcement.

[15] In these circumstances, I will make findings that there was an unsafe system of work, and that the deactivation of the RC console was a reasonable precaution that, repeated on every occasion, would have made the system of work safe. In my view, while various other issues are raised, none of them are sufficiently central to this case for me to make further recommendations.

[16] It just remains for me to convey my sympathies to Mr Bussell's family, and in particular to Mrs Margaret Bussell, Mr Bussell's widow, and to pay tribute to the dignity with which she conducted herself throughout the present proceedings.