

**SHERIFFDOM OF SOUTH STRATHCLYDE,
DUMFRIES AND GALLOWAY**

DETERMINATION by JOHANNA JOHNSTON,
Queen's Counsel, Sheriff of South Strathclyde,
Dumfries and Galloway following an Inquiry held at
Dumfries into the death of PAUL LAMAR
CAMPBELL, aged 24 years, who normally resided at
17 Victoria Gardens, Eastriggs by Annan

DUMFRIES, 28th October 2009

The Sheriff under and in terms of Section 6(1) of the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976 makes the following determination:-

- (a) The death of Paul Lamar Campbell occurred at the B721 Annan to Gretna road on 29th of July 2008 at or about 1752 hours.
- (b)
 - (i) The cause of the death of Paul Lamar Campbell was a road traffic accident, which resulted in haemorrhagic shock and chest injury.
 - (ii) The cause of the accident which resulted in his death was the failure of the front suspension unit of the quad bike, which he was driving.
 - (iii) The failure of the suspension unit affected the steering and the handling of the quad bike. The front of the vehicle became unbalanced and caused the vehicle to pull to the offside. Mr Campbell was unable to control the vehicle and the quad bike swerved onto the opposing carriageway where it collided with a motor car travelling in the opposite direction.
 - (iv) In the collision Mr Campbell was thrown from the quad bike into the path of the motor car. Mr Campbell was struck by the car and then fell to the roadway and became trapped under the motor car. He was then dragged along the carriageway by the motor car for about seven metres. The motor car then came to a halt.

- (v) As a result of the collision and having been trapped underneath the moving vehicle, Mr Campbell sustained injuries to his chest and suffered a loss of blood. Mr Campbell died as a result of these injuries.
- (c) There were no reasonable precautions whereby the death of Paul Lamar Campbell might have been avoided.
- (d) That no defects of any system of working contributed to the death of Paul Lamar Campbell.
- (e) That the following facts are relevant to the death of Paul Lamar Campbell
 - (i) The front suspension unit of the quad bike which he was driving became separated at the lower mounting.
 - (ii) The front suspension unit separated because it had not been adequately secured when the vehicle had been manufactured.
 - (iii) The separation of the joint caused the front offside suspension of the quad bike to fail.
 - (iv) The failure of the front offside suspension of the quad bike affected the steering and handling of the vehicle and caused it to pull towards the offside.
 - (v) Mr Campbell was unable to control the quad bike and the quad bike swerved onto the opposing carriageway and collided with an oncoming motor car.

NOTE

Background

[1] Paul Campbell had an interest in motor bikes and quad bikes. He decided to buy a quad bike and looked on the internet for suppliers. He had held a driving licence for around six years and drove regularly.

[2] Around 30th May 2008 Paul Campbell purchased a Mikilon Quad Bike, model MA7-250, hereafter referred to as “the quad bike”, from Simpson Leisure UK Limited. He conducted this transaction on the internet. The vehicle was paid for and delivery was arranged.

The manufacture and importation of the quad bike

[3] The quad bike was manufactured by The Zhejiang Chaozhong Industrial Company Limited based in Wuyi Zhejiang, China. On 28th March 2008 the manufacturers issued an EC Certificate of Conformity in respect of the vehicle. The certificate indicated that the quad bike conformed to EC type-approval number e4*2002/24*1889*00.

[4] The European Union has in place a system to regulate the environmental and safety standards of vehicles in service in the community. For vehicles manufactured outwith the EU there operates a system referred to as “type approval”. This scheme permits vehicles from outside the EU to enter into service in the community if a certificate of conformity has been issued for that type of vehicle.

[5] Council Directive 2002/24/EC, sets out a type approval scheme, which covers quadricycles or quad bikes. A type approval certificate can be issued by any member state of the EU. Once granted, the certificate permits that type of vehicle to enter service throughout the EU without any further testing.

[6] The type approval number e4*2002/24*1889*00 for the Mikilon MA7-250 was granted by the relevant approval authority in the Netherlands, the RDW. The RDW exercises the same powers in respect of type approval as the Department of Transport in the United Kingdom. The RDW issued the certificate having ensured that the quad bike complied with the minimum safety and environmental standards. There are no specific requirements or tests within the procedure regarding the design and construction of suspension units.

[7] The quad bike was imported by Simpson Leisure UK Limited. It had a certificate of conformity, which indicated that the vehicle conformed to the relevant type approval. Simpson Leisure Ltd was not under any statutory obligation to perform any further safety tests on the vehicle before selling the vehicle to Mr Campbell.

[8] The quad bike was dispatched to Paul Campbell. It was secured within a steel frame and packed in a large cardboard crate.

Receipt of the quad bike by Paul Campbell

[9] In late May or early June 2008. Paul Campbell received the quad bike at his home. It appeared to be in the condition in which it had been dispatched and appeared not to have been damaged in transit. The certificate of conformity was enclosed with the quad bike. A booklet entitled “ATV ASSEMBLY INTRUCTION” and an operational instruction manual were enclosed. Within the list of contents of the operation instruction manual is reference to a section on “*Inspection of Front Suspension*” at page 20. There is no page 20 of the manual and there is no other reference to the issue of the front suspension within the manual.

[10] The quad bike was not fully assembled. The wheels were separate from the frame and the handle bars had to be adjusted. Paul Campbell completed the assembly without encountering any difficulties. The suspension units were in place and did not require any assembly or alteration. Paul Campbell did not alter the front suspension units.

Use of the quad bike by Paul Campbell

[11] Paul Campbell registered the quad bike with the Drivers and Vehicles Licensing Authority. He insured the vehicle. His driver’s licence authorised his use of the quod bike on the public highway.

[12] He then used the quad bike on about ten occasions for short journeys in his neighbourhood. He did not take the quad bike onto busy roads. His fiancée, Melissa Irving, drove behind him in a car on these journeys. She did this because she was concerned for his safety and in order to prevent other road users from driving too close to the quad bike.

Events on 29th July 2008

[13] On the 29th of July 2008 Paul Campbell and Melissa Irving paid a visit to Ms Irving’s family who live nearby. Paul Campbell drove the quad bike that day and Ms Irving was driving a Ford Focus car. That day Paul Campbell was given a crash helmet by Ms Irving’s father for use when driving the quad bike.

[14] Paul Campbell and Ms Irving left to travel to Annan shortly before 5pm. He was driving the quad bike and was wearing the helmet. Ms Irving was driving ahead of him in the car.

[15] The speedometer of the quad bike did not display the speed in miles per hour and Ms Irving and Mr Campbell had devised a system for letting Mr Campbell assess his speed. Ms Irving would check the speedometer in the car and then, at intervals, hold up her fingers to let him know the speed in miles per hour. Ms Irving would hold up three fingers to indicate thirty miles per hour and four fingers to indicate forty miles per hour.

[16] Paul Campbell and Ms Irving were both driving westbound along the B721 Annan to Gretna road. Ms Irving could see Mr Campbell in the rear view mirror. They were travelling at a point in the road where the speed limit increased from thirty to forty miles per hour. Ms Irving had indicated to Mr Campbell by holding up four fingers that her car was travelling at forty miles per hour. Mr Campbell was keeping pace with the motor car and the quad bike was travelling at about forty miles per hour.

[17] At a point on that road near to Beechwood Cottage, Ms Irving saw that Paul Campbell appeared to have a problem with the right hand side of the front of the quad bike. He looked down at the area of the quad bike close to his right foot.

[18] Ms Irving then saw Mr Campbell look back up and as he did so, the handlebars of the quad bike turned to the right. Mr Campbell tried to pull the handlebars back round. The quad bike then travelled to the right. Ms Irving noticed that the front of the quad bike looked as if it was further forward than the rest of the bike.

[19] Mr James Irving was driving eastbound on the B721 and saw the quad bike being driven by Paul Campbell. Mr Irving was travelling behind a Peugeot car. Mr Irving saw the quad bike lift partially off the roadway, turn over and strike the bonnet of the Peugeot car. Paul Campbell was still sitting on the quad bike as this collision occurred. Mr Irving did not see where Mr Campbell went to after the collision. Mr Irving saw the quad bike come to rest on the grass verge.

[20] Paul Campbell was thrown from the quad bike in the collision with the motor car. He was thrown into the path of the car and he became trapped under the moving vehicle. Mr Campbell was dragged by the car along the road way for a distance of around seven metres until the car stopped. Mr Campbell was then trapped underneath the front valance of the car. The car stopped on the eastbound carriageway.

[21] The quad bike came to rest on the grass verge at the side of the eastbound carriageway.

[22] The emergency services were alerted and paramedics attended with an ambulance. The paramedics found that Mr Campbell was trapped under the front of the Peugeot car. It was noted that his face was turning blue, a condition known as cyanosis. The paramedics and others then moved the car to free Mr Campbell.

[23] After Mr Campbell was freed from underneath the car he was further examined. It was noted that he was not breathing and he did not have a pulse. His pupils were fixed and did not react to light. The paramedics concluded that Mr Campbell was dead.

[24] On 30th July 2008 a post mortem examination was conducted. Mr Campbell was found to have suffered a number of injuries as a result of the accident. He had injuries to his chest including a number of rib fractures. There had been bleeding into the left pleural cavity and the peritoneal cavity.

Examination of the scene

[25] Police officers attended and an examination of the area was conducted. It was noted that the damage to the Peugeot car and the quad bike were consistent with the description given by the witnesses of the quad bike having veered onto the opposite carriageway, flipped over and collided with the car.

[26] The area was searched. Parts of the quad bike, which had become detached, were recovered. The coil spring from the front offside suspension unit was found about four metres from where the quad bike had come to rest. The lower collar from the damper rod of the front suspension unit was missing. It was searched for but was not found.

Examination of the quad bike

[27] The quad bike was examined by the police and by the Vehicle & Operators Services Agency (VOSA). There was damage to the quad bike, which was consistent with it having been in the collision with the car. The only fault found in the quad bike was an apparent failure of the front offside suspension unit.

[28] The remaining components of the suspension unit were examined by police officers, by Mr Robert Carson of VOSA and by forensic scientists. Nothing was found to suggest the unit was damaged in the collision. The lack of damage to the unit, the fact that it was a loose fit in the socket and the absence of any visible locking mechanism led the examiners to conclude that the damper rod had worked loose from the socket because it had not been adequately secured.

The failure of the front offside suspension unit

(i) Design of the front suspension units

[29] The quad bike was fitted with front suspension units on both front axles. The suspension units are of a type referred to as a “coil over damper” unit. These suspension units connect the wheels via the axles to the main structure of the vehicle. The units are designed to move and absorb some of the energy that passes from the wheels to the rest of the vehicle. Without such suspension units, the wheels would transmit force directly to the vehicle and the vehicle would be uncomfortable to ride and more difficult to control. The operation of the suspension units has an affect upon the way in which the vehicle handles.

[30] The front offside suspension unit was made up of a number of parts including a cylinder, a damper rod and a coil. The damper rod is a moving part and comes out from the lower part of the cylinder and can travel in and out of the cylinder. The coil is a moving part and takes the force that is transmitted from the movement of the wheels. The coil surrounds the damper rod and the cylinder. The movement of the damper rod and the coil is connected. The cylinder contains compresses air, which offers resistance to the damper rod and slows it down. As the damper rod slows down on entering the cylinder, so does the coil. The effect of the damper rod is to prevent the coil from oscillating and causing the vehicle to bounce up and down. This type of unit has come to be known as a “coil over damper” unit.

[31] In the normal course, the damper rod is attached to the axle through a joint known as a rose or bush joint, which secures the whole suspension unit to the axle. The damper rod has a threaded end. The joint has a socket into which the threaded end of the damper rod is inserted and then the parts can be screwed together. The damper rod has collars at the top and bottom to keep it securely in place.

[32] The damper rod and the bush joint require to be locked together after the rod is screwed into the socket. If a locking mechanism is not used there is a risk that any movement of the parts could cause them to work loose and separate.

[33] There are a number of methods to lock the damper rod and socket together. The parts can be glued together; heat can be applied to the socket and when the metal cools and contracts, the damper rod is secured; a hole can be drilled through the joint and a dowel inserted; and the damper rod and socket can have cross-threading to lock the threads in place.

[34] It cannot be ascertained how the damper rod and socket were intended to lock together in this unit. The vehicle was manufactured in China by the Zhejiang Chaozhong Industrial Company Limited. The company have not supplied any details of the design of the unit.

[35] The front nearside suspension unit has been examined and appears to be the same type of unit as the one which failed. Attempts have been made to separate the damper rod from the socket in the intact near side unit however these have not succeeded. The components appear to be locked together. As they cannot be separated, it has not been possible to find out how they are locked together. This type of unit is not designed to be serviced or repaired. Specialist tools are required to separate the unit from the lower socket where it attaches to the frame of the vehicle. The damper unit and socket can now only be separated by breaking them apart and damaging both parts.

(ii) Examination of the front offside suspension unit.

[36] The front suspension unit of the quad bike was examined. The damper rod and the cylinder were still attached to the vehicle at the top section. The damper rod was not connected to the socket in the bush joint at the lower section. The coil was found on the grass verge at the scene having become detached from the vehicle. The lower collar of the damper rod was not in place. The police searched for this collar but it has not been found.

[37] The quad bike was examined by Robert Carson of VOSA. He found that the front suspension unit had failed. A component of that unit, the damper, had detached from the lower mounting point. There was no damage to the unit to indicate that it had failed as a result of any force. He considered that the most probable cause of the failure was that the component parts had worked loose from each other. He did not

see any locking mechanism for the joint. He noted that the joint was loose and concluded that heat had not been applied to lock the parts together. Had heat been used, the joint would have been tighter.

[38] The front suspension unit was also examined by Richard Vallance and Louise Sonstebos, Forensic Scientists. They concluded that the component parts of the front suspension unit had separated. There was no evidence of force having caused the separation and they concluded that the most probable cause was that the parts had worked loose.

[39] Police Constable David Coull also examined the front suspension unit. He was a tool-maker to trade before he became a police officer. He had threaded the damper rod into the socket and was of the view that the parts did not form a tight fit. He expressed the view that without a locking mechanism there would be a risk that the damper rod could become unthreaded by the movement of the parts. He looked for and did not detect any residue of glue to suggest that might have been the locking mechanism. He also found the threads on the damper rod to be intact from which he concluded that the parts had not been subject to cross- threading.

[40] PC Coull found damage to the rim of the socket in the bush joint, which was consistent with the damper rod falling down and striking that area when it became unthreaded. He considered that the lower collar must have been in position when the quad bike was being driven as without it the coil would not stay in place and the bike would have been difficult to drive. He had looked for the collar at the scene but it has not been found. There are fields close to the road and it was difficult to make an exhaustive search of the area.

(iii) The effect of the failure of the front offside suspension unit

[41] The front suspension units serve to keep the vehicle on an even plane. When the damper rod became detached from its lower mounting with the bush joint, the coil broke free and fell from the vehicle and the remaining section of the unit dropped down. This caused the vehicle to tip over to the offside. The weight of the driver, Mr Campbell, was then thrown to the offside and front of the bike. The bike was then very difficult to control and steer and was likely to pull to the offside.

[42] The description of the witnesses to the accident is consistent with the failure of the suspension unit having caused the loss of control of the quad bike. Mr Campbell was seen to look down to the front offside of the quad bike, which is where the unit is

situated. The quad bike was seen to dip down to the right hand side and then veer off to the right. Mr Campbell was noticed to be struggling to keep control of the vehicle and was trying to correct the steering.

[43] The examination of the quad bike and the locus are also consistent with the failure of the front suspension unit having caused the loss of control of the quad bike. The unit was found to have become detached from its lower mounting and the coil and the lower collar had fallen off. The quad bike could not have been driven in a normal fashion with the suspension unit in that condition.

Investigations and action taken by the Vehicle Safety Branch of VOSA

[44] VOSA is an executive agency of the Department of Transport in the United Kingdom. The Vehicle Safety Branch deals with product safety issues in the automotive sector and operates a system of recall of vehicles in the event of any safety defect. In the VOSA code of practice *“Guide to Recalls in the UK Automotive Sector”* a safety defect is described as a *“feature of design or construction which is liable to cause significant risk of personal injury or death”*.

[45] The Vehicle Safety Branch was advised by Dumfries and Galloway Constabulary and by Mr Carson of VOSA of the investigations into the circumstances of the death of Mr Campbell. Having considered the view that the failure of the front suspension unit may have caused the accident, the Vehicle Safety Branch started an investigation into whether such a failure would be a safety defect in terms of their codes of practice.

[46] The Vehicle Safety Branch wrote to Simpson Leisure Limited asking if they could give a reason for the damper rod becoming detached from the socket. Lawyers acting on behalf of Simpson Leisure Ltd replied stating that the company were unaware of any faults in the front suspension units of this type of quad bike and that the failure of the component was due to the collision.

[47] The Vehicle Safety Branch also contacted the manufacturers in China at the address shown on the Certificate of Conformity supplied with the vehicle. The manufacturers did not respond at first and VOSA contacted their equivalent authority in China, the AQSIQ, for assistance. That authority subsequently advised that they had asked the company to contact VOSA directly. On 4th September 2009, VOSA received an e-mail from the manufacturers, known to VOSA under the name of Mikilon.

[48] Mikilon has advised that they have supplied thirteen thousand of this model of quad bike. The company are unaware of any issues with the suspension. They have advised that the front suspension unit of the quad bike is manufactured by another company and is thereafter assembled at the Mikilon factory. They have not yet supplied any detail on the design or construction of the unit. They have undertaken to cooperate in the enquiry.

[49] The Vehicle Safety Branch is not aware of any reports of a similar problem in other vehicles of the same model.

[50] VOSA has advised the Department of Transport of their enquiries. If any safety defect comes to light, the Department will be advised. The Department have the authority under Council Directive 2002/24/EC, to advise the RDW in the Netherlands of issues involving safety in vehicles granted type approval. The Directive also gives authority for member states to prohibit the entry into the EU of vehicles, which have been adjudged to constitute a road safety hazard.

Conclusions

[51] The quad bike was of a model, which had type approval under the scheme set up within the European Union to regulate the safety of vehicles. Mr Campbell took receipt of it along with a certificate of conformity. Mr Campbell was entitled to rely on that certificate as providing some assurances as to the safety of the design and manufacture of the bike.

[52] The fault in the front offside suspension unit would not have been apparent to Mr Campbell when he got the quad bike. The final assembling of the quad bike by Mr Campbell did not affect the front suspension units, which were sealed units and were attached to the frame of the vehicle. The fault in the unit only arose once the vehicle was moving and motion caused the joint to separate.

[53] From the evidence led, I am satisfied that the failure of the front offside suspension unit arose from a specific, and possibly unique, defect in the construction of this quad bike. Although the method of manufacture and the design of this unit have not yet been made available by the manufacturer, I had before me the evidence of the examination of the unit by a number of experienced and expert witnesses.

[54] There was no evidence from the Crown witnesses of a fault in the design of the joint between the damper unit and the bush joint. In the front offside unit the parts did

fit together and no obvious faults were found in the components. The front nearside suspension unit appears to be of the same type and it has a secure joint.

[55] Until the nearside unit is further examined, the exact mechanism used to secure these types of joint cannot be ascertained. The examination of the front offside unit strongly suggests that the locking mechanism for the joints is of a type which forms part of the process of the assembly of the unit such as the use of glue or the shrinking of metal by heat.

[56] Given the strong likelihood that the locking mechanism was one which would have been applied as part of the manufacture of the quad bike, the fact that the near side unit has a secure joint and that there are no other reports of similar units having failed, I have concluded that there has been a defect in the construction of this particular vehicle at the Zhejiang Chaozhong Industrial Company Limited at their factory in China. The lower mounting of the offside unit should have been secured by a locking mechanism in the course of manufacture or assembly and it was not.

[57] VOSA intends to examine the intact nearside unit and get such information as they can about the design and construction. The manufacturers have indicated that they intend to cooperate and supply further information. In the event that any safety defect comes to light, VOSA have the power to recall all the vehicles of this model and the power to publicise a fault, where it is in the public interest to do so. I am satisfied that these powers are sufficient to address any concerns about the safety of this model of vehicle.

[58] In the event that any safety defect is found by VOSA, the Department of Transport have the authority to advise the RDW, who issued the type approval certificate, of any such issue. There is also authority under the EU Directive for the prohibition of the sale or entry into service of types of vehicles found to constitute a road safety hazard.

[59] Given the involvement of the VOSA and the Department of Transport, I do not consider that it is appropriate for me to make any recommendations regarding the use of quad bikes of this model. I am satisfied that the involvement of the government agencies and departments and the statutory powers available to them, provide sufficient assurance on the issue of the safety of the use of this type of vehicle. If it emerges that there is any fault in the design of this part or in the systems employed in the manufacture of the quad bike, there are in place statutory powers to recall the

vehicles, contact all registered keepers and advertise such faults. All of these steps can be used to protect safety of the public.

[60] The family of Mr Campbell were not represented in the proceedings. I noted, however, that they attended throughout and that they listened with care and attention to all of the evidence. I hope it was of some comfort to them that, in the course of his evidence, Mr Tudor of VOSA made an undertaking to keep them advised of the progress and results of the continuing investigation. The family have suffered the tragic loss of Paul Campbell and it may be some small consolation that every effort is being made to ensure that the defect, which had such terrible consequences, is unlikely to occur in other quad bikes of this type.

Dumfries, 28th October 2009

Sheriff Johanna Johnston, Q.C.