



THE SUPREME COURT OF APPEAL OF SOUTH AFRICA  
JUDGMENT

Case No: 241/10

In the matter between:

RUBEN ANTHONY FRY

Appellant

and

HULETT'S ALUMINIUM (PTY) LTD

Respondent

**Neutral citation:** *Ruben Fry v Hulett's Aluminium* (241/10) [2011] ZASCA  
(18 March 2011)

**Coram:** NAVSA, CLOETE, SNYDERS, BOSIELO AND MAJIEDT  
JJA

**Heard:** 14 February 2011

**Delivered:** 18 March 2011

**Summary:** Factual causation - probabilities

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ORDER

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On appeal from: KwaZulu-Natal High Court (Pietermaritzburg) (Tshabalala JP sitting as court of first instance).

- 1 The appeal is upheld with costs, including the costs of two counsel.
- 2 The order of the court below is replaced with the following:
  - ‘a The defendant is liable for the damages suffered by the plaintiff due to the injury sustained in the fire at the defendant’s mill on 13 February 2002.
  - b The defendant is ordered to pay the plaintiff’s costs of suit including the costs of two counsel.
  - c The preparation fees of the expert witness Mr Carr shall be allowed on taxation.’

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JUDGMENT

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SNYDERS JA (NAVSA, CLOETE, BOSIELO and MAJIEDT JJA concurring)

[1] The appellant instituted action against the respondent in the KwaZulu-Natal High Court, Pietermaritzburg, (Tshabalala JP presiding) for damages suffered as a result of personal injuries he sustained whilst performing work at the respondent’s S6 aluminium rolling mill in Pietermaritzburg. The appellant, at the relevant time, was in the employ of Rallin Engineering CC which was

contracted to perform work for the respondent. Pursuant to an agreement between the parties and an order by the court below the determination of the quantum of damages was separated from all other issues in terms of Uniform rule 33(4) and postponed for later determination. The remaining issues between the parties were decided against the appellant and his action was dismissed with costs. The appellant appeals against that order with the leave of the court below.

[2] The respondent contracted with Rallin Engineering CC to fit a draining valve in two pipelines that carried oil to its S6 rolling mill. On the morning of 13 February 2002 the appellant and three colleagues were despatched to perform the installation. The appellant, a welder by trade, was accompanied by a pipe fitter, Mr Houston, and a semi-skilled boilermaker and a labourer. Their work involved cutting a segment out of each of the two pipelines and fitting a valve into the space left by each of the segments. This description of the work does, however, not convey the danger involved in performing the task. Whilst they were busy with the execution of the work an explosion occurred which started a fire in which Houston lost his life and the appellant was injured.

[3] The environment in which the work was executed, the substances involved and the equipment used posed a high risk of injury or damage. The work was carried out in a basement underneath the rolling mill. The rolling mill had been shut down for maintenance work. Access to the basement is only allowed when the rolling mill is not in operation. The basement is a large area of about

500 square meters that consists of various rooms and passages which accommodate the support services of the rolling mill itself. This includes hydraulics, a cooling system, electrical installation and a carbon dioxide pumping system required to extinguish the fires that regularly occur in the rolling process. Due to the risk of oxygen deficiency posed by a carbon dioxide installation access to the basement is restricted and tightly controlled. A ventilation system consisting of fans on the one end of the basement and an extractor on the other ensure the flow of air through the basement. When the mill was shut down for maintenance, the ventilation system was also shut down.

[4] Large storage tanks for the rolling oil used as lubricant and coolant in the process of rolling aluminium are kept in a so-called clean oil tank in the basement and conveyed to the mill through a network of pipes that run along the ceiling of the basement up to the mill where it is sprayed onto the rollers. The same oil, after use in the mill, is caught in a large pan and conveyed through a network of pipes down into the basement to another large oil tank, the so-called dirty oil tank from where it proceeds through a filter back to the clean oil tank that again feeds the rollers.

[5] The product that was used in the rolling process by the respondent at the time is called Shellsol D100. The manufacturer's safety data sheet for this product describes it as a solvent that may form a 'flammable/explosive vapour-air mixture' and warns users to avoid heat, flames and sparks, not to breathe the vapours and advises use only in well-ventilated areas. The

manufacturer explicitly warns that 'residues may cause an explosion if heated above 100 °C'.

[6] The work that had to be performed required the appellant and his colleagues to use an oxy-acetylene cutting torch and a welding machine. The former consists of two cylinders, one of which contains oxygen and the other acetylene. Both cylinders are connected to a torch by separate hoses. The cylinders are fitted with valves, regulators and flame arrestors through which, once opened, the gas passes along the flexible hoses to the torch. The torch is fitted with a further valve that regulates the flow of gas. Acetylene is a highly flammable gas. When the acetylene and the oxygen are released in a controlled fashion and lit, it produces an oxy-acetylene flame that is used to cut very hard substances. The oxy-acetylene flame burns at temperatures as high as 3300 degrees Celsius.

[7] Due to the risks posed by performing welding and oxy-acetylene cutting in the basement the respondent was statutorily obliged to and took precautions for the performance of this work, which was referred to as hot work. The precautions included that the welding machine and oxy-acetylene cutting equipment were visually inspected by Van der Mescht, who was designated on behalf of the respondent to supervise the work. The purpose of the inspection was to ascertain whether the equipment was in good order, free from apparent safety issues. The welding machine, oxygen and acetylene cylinders were not taken down into the basement, but left at ground floor level, whilst only the cables of the welding machine and hoses and torch of the oxy-

acetylene cutting equipment were passed through a grid in the floor from the ground floor to the basement.

[8] As part of the statutory safety precautions a so-called Hazard Clearance Permit was issued by Van der Mescht to the appellant in terms of the General Safety Regulations.<sup>1</sup> The permit records that the work that had to be performed was 'HEAT PRODUCING WORK' and involved a 'FLAMMABLE, TOXIC OR CORROSIVE SUBSTANCE HAZARD'. The appellant signed the permit and by doing so he acknowledged that all the safety procedures had been explained and understood and he undertook to ensure that all work be completed in a safe and satisfactory manner. The safety precautions taken by the respondent included the shutting down and locking of the pumps that pump the oil to and from the mill and the storage tanks, closing of all valves, draining the pipes of oil and washing down the entire area where the work was to be performed with water. When the oil residue could not be cleanly washed off the grids on the floor it was covered with sheets of wet cardboard. The permit records the safety precautions undertaken and only after it was issued were the appellant and his colleagues allowed access to the basement to perform the work.

[9] The permit was issued shortly after 9 o'clock on 13 February 2002 and the work commenced in the basement soon after that. The two pipelines that had to be cut ran along the ceiling of the basement, within a meter from each

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<sup>1</sup> GN R1031, GG10252, 30 May 1986, as amended, particularly regulation 9 that deals with welding, flame cutting, soldering and similar operations. These regulations were promulgated in terms of the repealed Machinery and Occupational Safety Act 6 of 1983 and are deemed to have been made under the Occupational Health and Safety Act 85 of 1993 in terms of s 43(5) of the latter Act.

other. Segments were safely cut out by Houston, using the oxy-acetylene torch. The appellant's entire team then went back to the ground level to modify the valves that had to be fitted in the openings that were cut. The modifications detained them until the afternoon when they went back into the basement.

[10] Upon their return it was evident that there was oil leaking from one of the pipelines which had been cut in the morning. The appellant put his hand into the pipe and felt that the oil was warm. Van der Mescht opened a valve and drained the oil from that pipe. The pipe was not washed out. Houston, to Van der Mescht's knowledge, had to further trim the pipes with the oxy-acetylene torch before the valves could be welded into place. For this purpose he positioned himself near the ceiling of the basement. The appellant felt that it was unsafe to continue with the work because of the presence of the oil in the pipe and expressed that view to Van der Mescht. The latter instructed them to continue with their work on the adjacent pipe that was not leaking oil whilst he went to check the status of the valves in the pipeline on a computerised control system. The oxy-acetylene torch was passed down from the ground floor and handed to Houston. Upon striking the flint an explosion occurred near the ceiling of the basement that caused a rolling fire.

[11] During the trial the respondent disputed that it owed the appellant a legal duty to act without negligence and the court below found for the respondent on this issue. The respondent required employees of its contractor to enter its premises to perform dangerous work in a dangerous environment under its

exclusive control. It could hardly be said, as was found, that because the appellant was not in the employ of the respondent that the latter owed him no duty to act without negligence. Reliance was placed by the respondent on the *obiter dictum* in *Du Pisanie v Rent-A-Sign (Pty) Ltd & another* 2001 (2) SA 894 (SCA) para 15 for the submission that the appellant, as an employee of an independent contractor, did not have the benefit of a duty of care arising from the regulations. Insofar as that judgment is to be understood to be authority for such a submission I, regrettably, do not agree. In this court the respondent rightly conceded that it owed the appellant a common law duty not to act negligently and there is therefore no need to dwell on that topic further.<sup>2</sup> The General Safety Regulations create a situation specific statutory duty that essentially mirrors the content of such a common law duty, hence my constant references to the procedure adopted in terms of the said regulations.

[12] The only issue on appeal is the factual cause of the explosion and fire.<sup>3</sup> Should that be answered in favour of the appellant, it is to be accepted that the failure to have provided a safe working environment is sufficiently closely linked to the appellant's loss for legal liability to ensue. Two potential causes for the explosion were postulated. First, a leak in the oxy-acetylene cutting equipment and second, vapours from the Shellsol D100. The expert witness Mr Carr, a natural scientist specialising in chemistry, who testified for the appellant, excluded the oxy-acetylene leak as a possible cause of the explosion. Mr Froneman, a doctor in chemistry, who testified for the

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<sup>2</sup> *Sea Harvest Corporation (Pty) Ltd v Duncan Dock Storage (Pty) Ltd* 2000 (1) SA 827 (SCA) para 19; *Brooks v Minister of Safety and Security* 2009 (2) SA 94 (SCA) para 5.

<sup>3</sup> *International Shipping Co (Pty) Ltd v Bentley* 1990 (1) SA 680 (A) at 700E-H; *mCubed International (Pty) Ltd v Singer & others NNO* 2009 (4) SA 471 (SCA) paras 22 and 23.



respondent, excluded the presence of sufficient Shellsol D100 vapours to have caused the explosion. The trial court found that the two versions were 'of equal probability' and therefore that it was 'unable to determine which version is the most probable'.

[13] The common cause facts provide the key with which to unlock the deadlock that the trial court found to have existed. Upon their arrival the appellant's welding machine and Houston's oxy-acetylene cutting equipment were visually inspected by Van der Mescht for the specific purpose of establishing whether it was safe to be taken into the basement and to perform the hot work that was required. He found that all the equipment was in order and indicated this on the Hazard Clearance Permit that he issued. Van der Mescht was not wrong, as Houston subsequently cut two pipelines and the oxy-acetylene cutting equipment performed without failure.

[14] Although witnesses described the smell of acetylene differently, they were agreed that it has a very distinctive, unpleasant smell. The appellant's evidence that there was no smell of acetylene in the afternoon when Houston struck his flint to light the oxy-acetylene torch, was never challenged. Both Houston and the appellant were qualified and very experienced artisans in their respective fields. They both handled the oxy-acetylene torch in the afternoon when it was lowered through the grid in the floor from the ground floor. The appellant handed the torch to Houston. It is highly improbable, if acetylene was leaking in the basement, that Houston and the appellant would not have smelled it and even more improbable that Houston would have

struck the flint or that the appellant would have let him strike the flint if they smelled it.

[15] The suggestion that the explosion was caused by leaking acetylene is purely speculative. The only objective fact which supporters of that theory relied on was that the explosion occurred near the ceiling of the basement and caused a rolling fire. This fact, they said, supported the theory because acetylene is lighter than air and if it escaped would have gathered against the ceiling, whereas the vapours from the rolling oil are heavier than air and would have drifted to the bottom of the basement. Therefore, the argument was, the fact that the explosion occurred at ceiling height favours the theory that the acetylene leaked, accumulated against the ceiling and exploded when the flint was struck.

[16] The location of the explosion should not be viewed in isolation. The inspection of the equipment earlier in the morning, the successful use of the torch and the absence of any acetylene smell give rise to probabilities that outweigh the one that may arise on the location of the explosion. Reliance on the location of the explosion alone loses sight of the following logic. First, the lighter acetylene, assuming it was leaking from the hoses or torch that were lowered into the basement, would also have escaped upwards through the grid in the floor to the ground floor and an explosion would have extended to that floor and caused a fire there as well, which it did not. Second, vapours heavier than air would have drifted down from a source at ceiling height and if ignited on its way down to the floor area would have caused an explosion at a

level higher than floor level.

[17] Counsel for the respondent rightly argued that the leaking acetylene theory does not have to be established as the respondent had no onus of proof. He further argued that the appellant failed to acquit the onus on him because it was a physical impossibility for a sufficient amount of the rolling oil vapours that are heavier than air to have travelled upwards from its source, the clean oil tank, through the network of pipes and escape through the pipes that were cut in the morning to have caused an explosion in the afternoon.

[18] The fallacy of this argument is illustrated by the presence of drilling oil that leaked out of the cut pipe in the afternoon. It could also not have travelled upwards. That vapours were present was common cause. Vapours came not only from the oil that was leaking but from whatever source it leaked from. To say there could not have been a sufficient body of vapours to have caused the explosion that occurred is therefore pure sophistry. The only change in the conditions under which the appellant and his team worked safely during the morning was the presence of leaking rolling oil on their return in the afternoon. This happened despite the pumps that pumped oil from the clean oil tank to the rollers through the line that was cut, having been shut off and despite the valves in those lines having been closed off.

[19] Mr Lancaster, a mechanical engineer in the employ of the respondent with much experience of the respondent's rolling plant, saw the orange glow of the flames from the fire that followed the explosion and to him it looked

similar to the many rolling oil vapour fires that he had previously seen in that plant, albeit never in the basement.

[20] Carr's evidence supports the probabilities on the abovementioned facts. He stressed that Shellsol D100 is not an oil but a solvent and under the conditions that the respondent was using it, it degenerated, heat was transferred to it, it was exposed to air, it formed a flammable mixture with air, its instability increased and its flashpoint decreased.

[21] All these facts give rise to probabilities that convincingly tip the scale in favour of a finding that the explosion and fire were caused by vapours from the respondent's Shellsol D100 rolling oil that ignited when Houston struck the flint to light the oxy-acetylene torch.

[22] When the appellant and his team, under the supervision of Van der Mescht returned to the basement in the afternoon, the conditions had changed. The Hazard Clearance Permit that was issued in the morning for working with heat producing equipment in the vicinity of and on the pipelines that convey the rolling oil no longer correctly or validly recorded the safety conditions achieved in the morning. In at least two respects the safety precautions taken in the morning and recorded on the permit no longer obtained. All flammable, combustible, toxic or corrosive material had not been removed, suitably protected, neutralized or purged and valves and pipelines leading to the work area had not been closed and locked out.

[23] Once there was such a significant change in the working environment in the afternoon, the respondent was obliged to re-employ safety precautions to ensure that the environment was safe to work in, as was done in the morning. That is what the statutory obligation involved and what a reasonable person would have done in the circumstances. Lancaster acknowledged that would have been the reasonable and necessary thing to do. Having failed to do so, the respondent was, unarguably, negligent.

[24] There was a considerable amount of debate during the trial whether the basement where the work was performed by the appellant and his team constituted a confined space in terms of reg 5 of the General Safety Regulations. The trial court found that it was not. The significance of the debate is that in a confined space the respondent had a statutory obligation to test the air and have it pronounced safe by a competent person prior to any work taking place. This was not done. Such a failure would be an indication of negligence. In view of the conclusion reached the issue is not material, but it remains relevant to inform future precautions. A 'confined space' in the General Safety Regulations are defined as:

'an enclosed, restricted or limited space in which, because of its construction, location or contents, or any work activity carried on therein, a hazardous substance may accumulate or any oxygen-deficient atmosphere may occur, and includes any chamber, tunnel, pipe, pit, sewer, container, valve, pump, sump or similar construction, equipment, machinery or object in which a dangerous liquid or a dangerous concentration of gas, vapour, dust or fumes may be present.' (My underlining.)

[25] The basement where the work was performed falls within the definition because of the undisputed facts for a variety of reasons. It is an enclosed space. It contained the storage tanks and network of pipes for the rolling oil. The rolling oil, and the vapour that escapes from it, are present in the pipes and are hazardous substances that may accumulate. The oxy-acetylene torch functioned with a hazardous substance and if it leaked the acetylene may have accumulated. It was common cause between the parties at the trial that the explosion occurred due to an accumulation of gaseous matter. Furthermore, the plant was fitted with a carbon-dioxide fire extinguishing system that was housed in the basement. Activation or leakage of that system could create an 'oxygen-deficient atmosphere'. As the air was not tested before the appellant and his team continued their work in the afternoon, a test that in all probability would have prevented the explosion, the respondent was negligent in this regard as well.

[27] In the notice of appeal the appellant seeks a curious costs order that would expressly allow costs on the high court scale for reasonable consultation, preparation, travelling, attending of an inspection and witness fees. In the same vein costs are sought for the preparation, report, qualifying fees and attendance of the expert witness, Carr. Such an order is a matter for the taxing master and therefore not competent except insofar as the preparation fees of the expert witness are concerned.<sup>4</sup>

[28] For these reasons the appellant should have succeeded in the court

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<sup>4</sup> *Transnet Ltd v Witter* 2008 (6) SA 549 (SCA); [2009] 1 All SA 164 (SCA); *Legal Aid Board v S* [2011] 1 All SA 164 (SCA).

below. Consequently I make the following order:

28.1 The appeal is upheld with costs, including the costs of two counsel.

28.2 The order of the court below is replaced with the following:

‘a The defendant is liable for the damages suffered by the plaintiff due to the injury sustained in the fire at the defendant’s mill on 13 February 2002.

b The defendant is ordered to pay the plaintiff’s costs of suit including the costs of two counsel.

c The preparation fees of the expert witness Mr Carr shall be allowed on taxation.’

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S SNYDERS  
JUDGE OF APPEAL

**APPEARANCES:**

For appellant: J A Booyens SC (with him J M Singh)

Instructed by Volsum, Chetty & Lax, Pietermaritzburg,  
Symington & De Kok, Bloemfontein.

For respondent: A J Troskie SC

Instructed by Cox Yeats, Durban,  
McIntyre & Van Der Post, Bloemfontein.