



DEPARTMENT: MINERALS AND ENERGY  
REPUBLIC OF SOUTH AFRICA  
**MPUMALANGA REGION**  
TEL: 013 – 656 1448  
FAX: 013 – 6903288

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## NEWSLETTER MPUMALANGA REGION OCTOBER 2006

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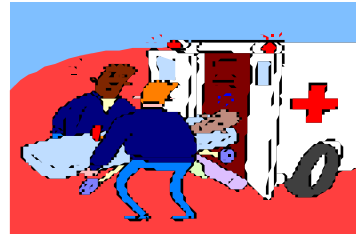
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### MINERALS AND ENERGY FOR PROSPERITY AND DEVELOPMENT

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### 1. ACCIDENTS



During October 2006 the mines reported 49 accidents of which four were fatal accidents and two were non-casualty accidents. The main accident categories are:

	October
General accidents	17
Fall of ground	7
Transport and mining	16
Machinery	6

## **2. FATAL ACCIDENTS**

### ***Four fatal accidents occurred in October 2006.***

#### **1. Bank Colliery: 2006-10-05**

##### **Description of Accident:**

Approximately 04H40 a continuous miner operator was struck by a fall of ground when he entered underneath unsupported roof where a slip was present. He was found under the fall approximately two metres from the last line of permanent roof-bolt support.

##### **The in-loco inspection revealed the following:**

The permanent support was according to mine standard. Oslo straps were used in areas where the slip opened up. Tell tale roof sagging monitors were installed on either side of the slips at pre-determined distances.

##### **Probable/suspected cause/s:**

Working or travelling under unsupported roof.

##### **Remedial action:**

Continuously discourage employees from working or travelling under unsupported roof.

#### **2. South Witbank Colliery: 2006-10-10**

##### **Description of Accident**

A strip of conveyor belt, approximately seventy-five millimetres wide, tore from the left hand side of the shaft conveyor belt. The strip of conveyor belt turned around the take-up return pulley in the belt drive. The shaft belt conveyor was stopped at the closest pull-stop switch and locked out. Two guards were removed on the left hand side of the belt conveyor and the shiftboss proceeded cutting the strip of conveyor belt out with a knife. As access was limited the now deceased, a beltsman, took the guard on the right hand side of the belt conveyor off as well. He climbed in between the top and bottom conveyor belt, right in front of the return pulley, and also started cutting the strip of conveyor belt. When enough of the strip of conveyor belt was removed, the pulley was released from the force holding it and suddenly turned as a result of the stored energy in the conveyor belt which was under tension for practically its whole length. The now-deceased was pulled in between the pulley and the conveyor belt.

**Probable cause :**

The now deceased and the two other persons present did not identify the potential energy stored in the conveyor belt.

**Remedial action :**

The mine must ensure that this type of stored energy is addressed in their Lock Out Code of Practice and communicated to all relevant persons. All nip points between any pulley and the conveyor belt must be protected with nip guards.

**3. Kleinkopje Colliery: 2006-10-11****Description of Accident**

At about 13:20 a Hitachi Euclid 85 tonne hauler ran over a double cab light delivery vehicle on a haul road. Of the four occupants inside the light delivery vehicle, three were killed and the fourth seriously injured. Both vehicles were apparently travelling in the same direction when the accident occurred.

**The in-loco inspection revealed the following:**

1. The double-cab light delivery vehicle had been struck from the rear and run over by the hauler.
2. The hauler had come to a stop 70,4 metres after running over the light delivery vehicle.
3. It was unclear whether or not the light delivery vehicle had been in motion at the time of the collision.
4. The road was 33,3 metres wide, in good condition and reasonably straight, with a slight downhill in the direction of travel.
5. Visibility was good, being a clear day, but the possibility of dusty conditions at the time of the accident could not be ascertained.
6. Both drivers involved in this accident had been duly authorised and had completed the necessary pre-use checklists.
7. The hauler is reasonably new and appeared to be safe to operate.

**Probable/suspected cause/s:**

At present any probable causes are unclear.

**Remedial action:**

1. The hauler was taken out of service pending a thorough examination of all safety aspects of the hauler.
2. At the request of the Inspector, the employer commissioned an independent consultant to test the hauler on every aspect concerning roadworthiness. He will submit a report following his findings. The auditor's report will indicate the maximum speed this hauler is capable of travelling. If necessary, the allowable speed may be amended.

#### **4. Kleinkopje Colliery: 2006-10-28**

##### **Description of the accident:**

At about 15:20 a contractor's employee positioned at the top of an overhead line pole was seriously injured when the pole broke at ground level and he fell to the ground. According to information obtained during the in-loco inspection, the then-injured succumbed to his injuries twenty to thirty minutes after the accident had occurred.

The contractors were in the process of installing a new section of overhead power line. The wooden poles had been firmly planted and the two end poles were secured by means of stay wires, anchored to the ground about ten metres from each pole. The three power conductors and the earth conductor were tensioned by means of rope-blocks at the pole that snapped.

As is standard procedure to prevent stay wires from becoming "live", a porcelain insulator, designed for that purpose, was connected in the centre of the stay wire, between the pole and the anchor in the ground. The now-deceased was on top of the pole, secured to the pole by means of a safety harness. He was making off the tensioned ends of the conductors. The insulator at the centre of the stay wire failed, resulting in the pole breaking at ground level. The pole, together with the now-deceased fell to the ground. The pole was reportedly 11m long. When measured, the length of the exposed pole was 9,1m.

##### **The in-loco inspection revealed the following:**

1. The wooden pole, about 230mm in diameter at the bottom broke at ground level.
2. The safety harness was found lying on the ground, adjacent to the top section of the pole.
3. The insulator which had been secured to the stay-wire had a clean fracture.

##### **Probable/suspected cause/s:**

1. The insulator on the stay-wire failed because it was used in the wrong way under tensile stress in stead of under compressive stress.
2. Although the contractors were in possession of a table stating maximum sag and maximum tension of conductors per size, there was no evidence that any physical means was applied to measure either the sag or the tension of the conductors.

##### **Remedial action:**

It is recommended that a hazard identification and risk assessment be done and procedures and training amended accordingly.

### 3. ACCIDENTS PER MINING GROUP

The accidents per mining group are listed in the table below:  
**number reflected is persons injured or fatally injured**

	October		Year Prog.		Rate/1000	
	Inj.	Fatal	Inj.	Fatal	Inj.	Fatal
<b>COAL MINES</b>						
Eyesizwe	2	0	21	0	5.94	0
Sasol Coal	23	0	49	1	6.1	0.12
Ingwe Coal	0	0	49	2	5.78	0.24
Anglo Coal	5	5	33	5	4.06	0.6
Xstrata Coal	1	1	18	1	3.47	0.19
Metorex Coal	0	0	5	2	5	2
Total SA	0	0	9	0	11.23	0
Anker	0	0	1	0	1.85	0
Kangra	0	0	3	1	4.39	1.46
Private coal mines	2	0	11	2	7.6	1.38
<b>GOLD &amp; PLATINUM</b>						
Harmony Gold	9	0	46	3	9.45	0.69
Metorex Gold	1	0	15	0	6.18	0
Simmer & Jack	0	0	1	0	2.65	0
Aquarius Platinum	1	0	6	1	5.88	0.98
African Rainbow Min.	1	0	5	0	7.87	0
Private gold & platinum	0	0	5	0	1.84	0
<b>OTHER MINES</b>						
Xstrata Alloys	0	0	5	0	3.93	0
Samancor	0	0	5	0	3.47	0
Other private mines	3	0	17	0	9.81	0
<b>TOTAL</b>	48	6	304	18	5.78	0.34

### 4. ACCIDENTS FROM OTHER REGIONS

#### Introduction:

The driver of an articulated tip truck started unloading his truck when the support channel to the turntable broke loose from its welding. The kingpin on the turntable also had a clearance which allowed the truck to lean over excessively which caused it to overturn. The driver jumped out of the driver's cabin but was crushed on the ground by the cabin, which caused his death.

#### Circumstances and events preceding the accident:

It appears as if the turntable support channel welding failed and the raised load caused the truck to overturn on its side.

#### Findings:

The welding on the truck body was not to standard. The clearance on the turntable was excessive since the kingpin bolt was not correctly tightened.

**Basic causes:**

Poor maintenance on the tipper truck.

**Personal factors:**

If the driver remained in its cabin, he would only have sustained minor injuries.

**Recommendations:**

The truck belongs to a subcontractor. Maintenance was not effectively done on this vehicle and was the reasons for failure of the support channel which caused the accident.

The king pin on the turntable should be tightened to the correct torque to maintain a small clearance. The truck must be maintained to standard.

**Remedial action:**

Mine must arrange effective monitoring of contractors and sub-contractors equipment, training, and maintenance.

## 5. **HAVING EYES IN THE BACK OF YOUR HEAD.**

Visibility around large off highway vehicles in many cases is very limited. Original equipment manufacturers are trying to address this by improving mirrors and providing closed circuit television to enable the operator to see in places where he can not normally see.

Closed circuit television has the following disadvantages:

- The operator must be looking at the screen that is normally very small.
- He must be able to interpret what he sees.
- Darkness affects visibility and the effectiveness of the closed circuit television.

Ultrasonic detectors can be used to detect objects close to off highway vehicles and can sound an alarm. Ultrasonic waves are not inhibited by dust or smoke to the same degree as cameras, infra red sensors or laser sensors might be.

An interesting commercial example of such a system is the Groeneveld Greensight. The Dutch company markets different versions of this system for various applications including an on- and off-road variant.

The system uses two sets of transmitters and receivers placed on the right and left-hand side on the rear of the machine. Each set transmits in three directions with accompanying directional receivers. There are two strengths of the Groeneveld system, the user interface and the information it provides. It informs the operator exactly how much space is available behind the vehicle., using both an audible and a visible input. The system recognises objects that are larger than seventy-five millimetres in diameter.

The Groeneveld system has three levels of warning based on distance from the obstacle.

- Any obstacles further than five metres are ignored.
- Between 3 metres and 1,7 metres is the first level where the system flashes a yellow light emitting diode (LED) and beeps at a rate of 2 Hz.
- Between 1,7 metres and 0,7 metre the system flashes red and beeps at 4 Hz
- At less than 0,7 metre the system gives a constant red LED and warning tone.

Using both audio and visual methods makes it almost impossible for the operator to miss the warnings.

## 6. DRIVING IN REDUCED VISIBILITY.

Safe driving depends on the capability and attitude of the driver. Frequently the reaction of the driver depends on his prediction of what may happen or what another driver may do.

The National Road Safety Council adopted an acronym SIPDE to assist drivers to drive safely. The acronym stands for the following:

S	=	Search
I	=	Identify
P	=	Predict
D	=	Decide
E	=	Execute

**Search:** Searching means the systematic looking for potential threats, scanning from left to right from a distance at least ten seconds ahead to a distance close to the vehicle, thereafter repeating the cycle.

**Identify:** After searching threats or hazards need to be identified. Threats may be a taxi parked next to the road or the car approaching from the side of a crossing.

**Predict:** The next step for the driver or operator would be to predict what may happen. The taxi next to the road may make a U-turn or passengers may walk past the front of the vehicle. The car approaching the crossing may not stop at the stop sign.

**Decide:** The next step for the driver or operator would be to decide what action needs to be taken. In most cases such decision would be to reduce speed and to keep the largest safe clearance possible from the identified threats, like the taxi or the approaching car.

**Execute:** The last step would be to execute the decision made.

The consistent application of this system should improve road safety significantly.

### Discussion of effective searching:

Effective searching depends on the speed the vehicle is moving at and the prevailing conditions. It must be remembered that the stopping distance of a vehicle is proportional to the square of the speed. As the speed increases the distance at which

the search for threats or potential hazards must be conducted has to increase. An example is set out below:

Speed in Kilometers per hour.	Calculated stopping distance in metres.		Distance traveled in one-second reaction time in metres.		Total stopping distance in metres.		Number of seconds at which an hazard must be identified	
	Tar	Dirt	Tar	Dirt	Tar	Dirt	Tar	Dirt
30	5.7	11.56	8.3	8.3	14	19.86	3	4
60	23.2	46.4	16.7	16.7	40	63.1	4	7
120	92.4	184.8	33.3	33.3	125	218.1	7	12
180	200	400	50	50	250	450	9	18

The calculations were made using a friction coefficient of 0.6 for tar and 0.3 for dirt roads. The gravitational acceleration was taken as 10 m/s/s.

The effect of speed on the stopping distance can therefore clearly be seen from the figures above. These figures may vary with the type of vehicle and the performance specifications. The road surface incline and other factor may also affect the calculation. The figures however give one an indication of at least how far one should be able to see at the various speeds travelled. The stopping distances above would allow enough time in good conditions to avoid a stationary hazard. If two-way traffic is considered the distances should be doubled if it is assumed that the approaching vehicle travels at the same speed than you are.

A company by the name of Core System Integration (CSI, Telephone number 011 792 3083) has developed a radio frequency vehicle or personnel detection system that can detect vehicles or persons up to 150 metres from the vehicle and can assist with the effective searching for hazards that have been provided with a radio frequency tag.

**7. A SILENT CRIME IN THE MINES  
(article by Frans Baleni, published in Mail & Guardian -  
week 11-16 November 2006)**

See annexure

**8. STAFFING**

Congratulations to Xolile Mbonambi who has been promoted to Principal Inspector - NorthWest Region. Good luck in his new post

Also we say a sad farewell to Thabo Ngwenya who has been transferred to North West Region, and we wish him everything of the best.

**9. SAFETY ACHIEVEMENTS**

Congratulations to Barberton Mines - Fairview Section - for attaining 1 million fatality free shifts. Well done to all.

Yours in health and safety

**D M MSIZA  
PRINCIPAL INSPECTOR  
MPUMALANGA REGION**

13 November 2006 01:59

**A SILENT CRIME IN THE MINES : comment by Frans Baleni : published in Mail & Guardian**

Workers' skeletons litter the mines of this land. Many of those killed underground were never retrieved; their families never had the opportunity to bury them decently, according to African rituals and tradition.

In the worst disasters the recovered mineworkers are often unidentifiable and those families that insist on remains for ritual burials risk interring the wrong body. I am reminded of the 1996 Rovic disaster, in which 20 miners were killed, but only four bodies retrieved. In the Vaal Reefs disaster (1995), 104 men died underground. Some of the bodies were so horribly disfigured that women struggled to identify their own husbands.

But, every day, mineworkers continue to risk life and limb, descending into the dangerous mazes of gold. In the hard life of remote villages, where unemployment and hunger are the norm, working in the mines is an obligation.



It has become part of the conventional wisdom for both the boardroom men and the underground workers that pillar mining is the most dangerous enterprise. Nevertheless, the bosses continue to pursue this without adequate safety measures, in spite of the obvious and inherent danger to human life.

The disparity between those who occupy the offices of the mining houses and those who rub rocks with their shoulders is glaring. The former are guaranteed a comfortable life and respect for their personal wealth. For the latter, life is a mere possibility and the only guarantee is that one will be destitute where early death is avoided. Many die for a pittance, their dreams unfulfilled. Their sons often follow in their footsteps. In the mines, death looms large; life takes refuge in a tiny corner during those eight hours.

Earlier this week, we buried five mineworkers killed underground last month at AngloGold Ashanti's TauTona mine. This was just the latest grim reminder of the silent crime taking place in South Africa's mines.

Between 1984 and 2005, more than 11 100 miners died underground in South Africa. While the overall number of deaths has been on a generally declining trend over the past two decades, the number of miners killed below ground has exceeded 200 each year since 2000.

If this is not a crime, then what is? How different is it than other subjects that dominate the national discourse such as murder, robbery and cash-in-transit heists?

The TauTona disaster brings back other grim memories -- of the dead at Kinross in 1986, when 177 died; of Middelbult Colliery in 1993 (53 dead); of St Helena in 1987 (62 dead); and others too numerous to name. Mentioning these is not a rattle of some historically heroic struggle of national resistance such as Maji Maji, or the Bambatha rebellion. The numbers of workers fallen under the rocks approximates that of victims on a large battlefield. When are we going to declare an armistice?

In the wake of the Hlobane Colliery disaster in 1983, in which 68 mineworkers died, the National Union of Mineworkers took the bosses to court, arguing that they were negligent. The court agreed and, in a major victory for health and safety, found the mine guilty. The deaths at TauTona remind us that the Hlobane Colliery victory was just one important step forward, and that we require a permanent campaign for health and safety.

In 1983, realising that conditions in the West Driefontein gold mine were dangerous, 17 miners refused to work underground. In response, the mine bosses fired them. The union took the matter to industrial court and won the workers' reinstatement.

These examples serve to demonstrate that mining companies never accept responsibility for accidents underground. Why would they, when these torn pieces of dark flesh are from the most marginalised parts of our society? In this regard, we expect no change of heart from the mine barons.

Many mineworkers drew a measure of hope from the Leon commission's March 1995 report, particularly when the government decided that its recommendations should be acted upon. But it took the Vaal Reefs disaster for the mine owners to implement the recommendations.

The Mine Health and Safety Act, among other important rights, entrenches the right to refuse dangerous work. The Act also formalises the election of health and safety representatives by workers to participate in health and safety committees. But these representatives are unable to exercise these rights: their opinions are overlooked and they have no influence in exercising discretion on the danger of mining terrains.

The time has come for a campaign that seeks to ensure that the monumental precedent achieved by the 17 workers at West Driefontein is consolidated. One death underground is one death too many. It is time for an indaba on mining health and safety, and to examine technological innovations capable of warning people of seismic danger. Perhaps we also need a national monument for mineworkers, in recognition that our country's wealth is built upon their blood and bones.

The words of TauTona survivor Lebone Kwathini are still echoing in my mind. When I visited him a day after the disaster, he said, "*Ka hare ka mona ke taboile le tswalo*", the literal translation of which is, "What I have seen has obliterated my senses to measure danger or fear" He was talking about the colleague he had been working with, who has now disappeared into permanent silence. That memory haunts him as he sobs in his hospital bed.

And it will be no comfort for the families of the miners just buried that the bosses who instructed them to go underground will be receiving millions of rands in bonuses. (*Frans Baleni is general secretary of the National Union of Mineworkers*)