

Explosives Control – A Forgotten Management Function ?

Bushveld Safety Forum
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Explosives Countermeasure Solutions International



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Introduction

- ◆ Explosives Control in the Mining Sector – A neglected management function?
- ◆ What will the response be to this from mining management?
- ◆ The immediate reaction is most likely to be:
 - ◇ We are doing what we can.....
- ◆ My response to this is:
Reality

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Reality

Naweek Beeld 5 April 2008, Bladsy 6

6 kitsbanke die afgelope 24 uur opgeblaas

Gloria Edwards

Niks minder nie as 127 kitsbanke is reeds sedert Januarie landwyd opgeblaas, waarvan die meeste in Gauteng was.

Die syfer is gister deur die Suid-Afrikaanse bankrisiko-en-inligtingsentrum (Sabric) bekend gemaak nadat ses kitsbanke die afgelope 24 uur in veral Gauteng opgeblaas is.

"Ons het 'n sterk vermoede dat misdadigers wat kitsbanke opblaas, hul plofstof op 'n manier deur die myne verkry,"

Me. Kalyani Pillay, hoofbeampte van Sabric

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Reality

Between 1 January 2007 and 31 July 2007, 280 ATM machines were blown up. The damage caused totaled R84 million, excluding the stolen money. The South African Banking Risk Information Centre (Sabric) said that by last weekend the number of blasted ATMs had reached 127 this year. - Sowetan 8 April 2008

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Reality

- ◆ More than 140 ATM bombings occurred between January and March this year, compared to 368 bombings reported for the whole of last year. - Pretoria News 7 May 2008
- ◆ According to the South African Banking Risk Intelligence Centre, there were 54 ATM bombings in 2006, 387 in 2007 and 177 so far this year. -Cape Argus 24 April 2008, Page 12
- ◆ "One person has died in the blasts and thousands of rands have been stolen as ATM blasts increased from 54 in 2006, to 186 by the end of March 2008, according to official figures from the South African Banking Risk Information Centre". - Mail & Guardian 7 April 2008
- ◆ Niks minder nie as 178 kitsbanke is sedert Januarie opgeblaas. In 2006 is 54 kitsbanke opgeblaas en verlede jaar sowat 387. Vandeemaand alleen was daar reeds 52 sulke voorvalle landwyd.- Die Beeld 24 April 2008

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Blasts are linked to mines

- ◆ Explosives used in ATM bombings in the Mpumalanga Lowveld have been directly linked to thefts at local mines. Despite following strict orders by the Department of Minerals and Energy, the mines are plagued by thieves taking their explosives.
- ◆ Casper Strydom, manager of Barberton Mines, was not surprised to hear the explosives might be from one of the mines, and said they needed only a matchbox of explosives to blow up an ATM. Despite all the security measures, explosives were still being taken from the mine. "We will be conducting an internal investigation into the matter," Strydom said.- The Citizen 6 May 2008

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DME regulates Explosives Control

- ◆ The Mine Health and Safety Act provides guidelines and safeguards for selling and using explosives. There are also logging processes to keep track of all explosives.
- ◆ Dick Kruger, assistant adviser of techno-economics at the Chamber of Mines said :

"There is a magazine master who issues explosives to the mining operators. Even old and damaged explosives have to be destroyed in a prescribed process,"
- ◆ Kruger says he has not received any reports about explosives being stolen from any mine. "We depend on people to do their jobs," he says, but adds: "It's difficult for me to judge from my office in Johannesburg. I can't say what could go wrong."-, Cape Times 29 Aug 2007

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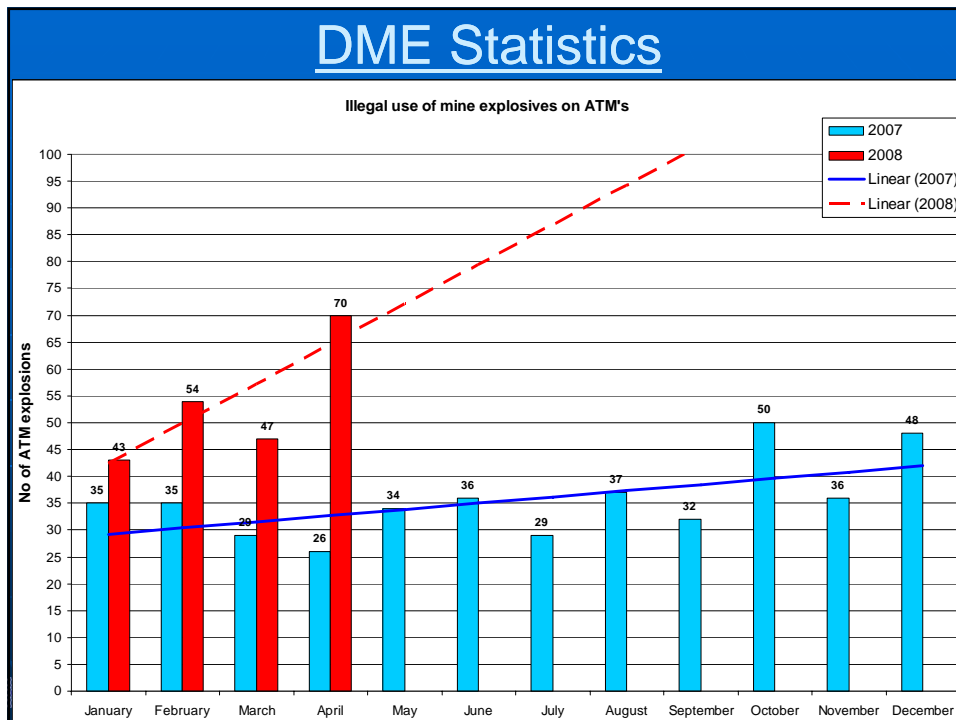
ECSI Research Results

- ◆ 56 incidents in 2006 escalated to 426 ATMs destroyed or damaged during 2007
- ◆ 240 explosions at ATMs since January 2008
- ◆ Commercial explosives used in majority of cases
- ◆ Origin of explosives in most cases traced back to mines
- ◆ Could lead to closure of mines by DME or SAPS



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DME Statistics



Explosives Control at Mines

- ◆ Is an Operational Management function
- ◆ Legal Appointment
- ◆ Applied through
 - ◇ Legislation,
 - ◇ Safety and Qualifications standards,
 - ◇ Safe work procedures,
 - ◇ Supervision,
 - ◇ Security regulations
- ◆ All looks very impressive on paper but it is not applied across the board.

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National Explosive Audits

- ◆ Mines are putting in an effort to enforce explosives control but stats indicate increase in incidents
- ◆ DME OH&SP Committee Circular No. 43/08
- ◆ High level audit by DME
- ◆ Combined Task Force of DME & SAPS – audits to commence within two weeks
- ◆ Capacity?

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ECSI Explosives Control Audits

- ◆ ECSI Explosives Risk Audit Tool™ in conjunction with
 - ◇ The Explosives Act, Act no 15 of 2003 as amended;
 - ◇ The Mine Health and Safety Act, Act no 29 of 1996, Chapter 4 Explosives
 - ◇ ISO 9001 Explosives Auditing Guidelines;
 - ◇ Inspector of Explosives inspection forms

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ECSI Explosives Control Audits


- ◆ Main objective
 - ◇ To identify areas where the potential exists for non-compliance
 - ◇ Identify possible areas where theft of explosives can occur
 - ◇ Prepare the management for DME audits
- ◆ Results of audits to date indicate 82% compliance
but
- ◆ **Focus appears to be on Safety and not Explosives Control**

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Areas of Concern

- ◆ Explosives and accessories administration
- ◆ Delivery and receiving of explosives to shaft loading bays
- ◆ Transportation of explosives and accessories from loading bay to underground workplaces
- ◆ Underground storage of explosives
- ◆ Explosives containers not present at work places, and if present not being used correctly
- ◆ Security staff not conducting effective searches
- ◆ Trade Unions do not participate in taking ownership of the problem

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Summary of Findings

Item Audited	Total % Compliance
Explosives and Accessories Administration	87
Delivery of Explosives on Surface	85
Transportation of Explosives from Surface to Underground Stations	86
Shaft ordering of Explosives	79
Explosives and Accessories Store	74
Underground explosives containers	82
Explosive and Accessories Issuing	82
Old Explosives, Containers, Plastics and Igniter cord	84
Destruction of Old Explosive General Regulations	88
Destruction of Old Explosive Underground	81
Destruction of Old Explosive Containers on Surface	89
Security Measures	68
Total Compliance	82

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Link between Audit results and Management


Principles of Management

- ◆ Planning
- ◆ Organizing
- ◆ Leading
- ◆ Control


- ◆ When considering audit findings vs. management functions – becomes clear that management is lacking

Audit findings	Principles of Management			
	Planning	Organization	Leading	Control
Explosives and Accessories Issuing Administration				
Lack of focus on the recordkeeping and retrieval aspects				
Training records was not always available				
Appointment letters for relieving staff lacking.				
Several different recording and filing systems exist in different work areas in the same business unit.				
Ordering and Accounting data capturing done without supervision				
Explosives issued and received at the work place is not always recorded				
Unused explosive recordkeeping inaccurate				


Audit findings	Principles of Management			
	Planning	Organization	Leading	Control
<u>Delivery of Explosives on Surface</u>				
The suppliers of the explosives does not adhere to legislation and the delivery schedule				
Personnel are not legally appointed for this specialized task.				
The loading of Explosives cars was not always well executed				
Miners used improvised devices to unlock the explosives car				
Delivered Explosives accessories boxes were not properly sealed				


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Audit findings	Principles of Management			
	Planning	Organization	Leading	Control
<u>Transport of explosives from loading bay to Work place</u>				
Time frame between receiving the explosives and eventual delivery to the miner too long.				
Recording of dispatched explosives cars is not sufficient.				
Turnaround time for Explosives cars, after delivery is too long.				
Procedures lacking for the transfer of explosives from the explosive cars to the miner's storage boxes				


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Audit findings	Principles of Management			
	Planning	Organization	Leading	Control
<u>Underground storage of explosives</u>				
Explosives accessory stores can be a major advantage but are not correctly managed.				
The Miner does not sign for receipt of explosives accessories in the explosives control book.				
No verification of orders placed, by using the "product Order Quantities Per Blast Sheet".				

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Audit findings	Principles of Management			
	Planning	Organization	Leading	Control
<u>Explosives containers</u>				
Explosive accessories boxes are not clearly marked.				
Positioning of Explosive storage boxes or drums does not comply to legislation.				
General shortage of Old Explosive Boxes				
Old Explosive boxes in a poor condition, lacking sufficient procedures and records.				

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Audit findings	Principles of Management			
	Planning	Organization	Leading	Control
Security				
Search procedures for explosives on the surface is major shortcoming.				
Proof of searches could only be found of a small quantity of operations.				
Security contractors are not kept to contract wrt explosives searches.				

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- ## Way Forward
- ◆ BSF appropriate forum to promote high standards within mining
 - ◆ Mining houses will have to identify risk areas
 - ◆ Use, storage, security and transport of explosives on mine sites are high risk areas
 - ◆ Explosive management audit systems to be put in place
 - ◆ Will ensure conformance with legislative requirements
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“ The most valuable fringe benefit of considering safety an operational strategy, has been the general improvement in line management’s ability to manage all aspects of their total job”

Lester A. Hudson, President/CEO, Dan River Inc

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Questions ?

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