CHAPTER 6

PILOT STUDY

6.1. INTRODUCTION

Once the questionnaire study confirmed that the ten identified fundamental contributing factors should indeed be included in accident investigations, an analytical accident investigation model was developed based on the research. A draft accident investigation guideline was drawn up. This guideline is fully described in Chapter 4 of this thesis.

To confirm that the theoretical benefits of utilising the newly developed methodology could be realized in practice it was decided that conducting an actual field trail pilot study should test the investigation process. The pilot study was also utilised to establish the practical limitations of implementing the model on a scale that may include other industries and types of accidents.

The chapter will commence by giving the background to the pilot study, some of the consequences of the study as well as the advantages of the proposed accident methodology as identified by the field staff conducting the trails. The chapter will then continue with a summary of recommendations and a concise description the process that was followed to effect changes to the legislative framework to accommodate the results of this research.

THE PILOT STUDY

The purpose of the pilot study was to ensure that all the practical problems that may be encountered with the implementation of the system in all the mining regions in South Africa could be identified and rectified. In addition to this it was necessary to verify the impact of the new system on the accident statistics.

It is a requirement of Section 60(2) of the Mine Health and Safety Act that inspector's of mines may investigate any accident or occurrence at a mine that resulted in the serious injury or serious illness of any person. As these inspectors have a legal right to investigate accidents, the Chief Inspector of Mines was approached and gave

permission for the draft investigation protocol to be tested in one of the regions of the Republic of South Africa.

In terms of Section 47(2) of the Mine Health and Safety Act, the Minister established nine mining regions for the administering of the Act. One of these regions cover the Gold mines in the Klerksdorp area as well as the Platinum Mines in the Rustenburg area. This mining region was selected, as it is the only such region that contains gold as well platinum mines. From the accident statistics discussed in Chapter 2 of this thesis it was clear that the highest accident rates persist on these types of mines.

In order to ensure that the inspectors utilising the new system were fully aware of the implications, they were trained in the use of the system prior to implementation. In addition, the researcher also formed a task team to evaluate and amend, where necessary, the draft accident investigation guidelines.

A Department of Minerals and Energy task group was formed, consisting of 4 experienced officers of the Department of Minerals and Energy.

This team comprised of the following members:

Mr C Marx, Project leader (Researcher)

Mr RS McLoughlin, Principal Inspector of Mines

Mr L Naude, Principal Inspector of Mines

Mr W Prinsloo, Senior Inspector of Mines

This task team evaluated the proposed accident investigation system, based on the accident model described in Chapter 4. The brief of this task team was to confirm that the use of this model will in fact enhance the effectiveness of accident investigations. Some minor adjustments were made and the team recommended to the Chief Inspector of Mines to proceed with the pilot study.

As a result of the statutory requirements as contained in Section 65 of the Mine Health and Safety Act pertaining to the conducting of inquiries into the death of any person, the Chief Inspector of Mines gave permission to allow the pilot study to continue with

the requirement that only non-fatal accidents be investigated utilising the proposed accident investigation system.

Traditional inquiries (taking down statements under oath), were still conducted in the event of all fatal accidents to comply with current statutory requirements.

The pilot study was conducted between 01 January 1999 and the end of May 2000. A total of 1143 accidents have been investigated by means of the procedure prescribed in Chapter 5, by the inspectors in the selected region.

During the period of the pilot study, a number of changes have been recommended and affected to the original draft proposal, to ensure that the system is user friendly and effective. For the duration of the pilot study, the task team conducted regular interactive sessions with the field staff to establish whether any changes were necessary. Once a potential change was identified, the task team considered the practical and legal consequences before accepting any such changes to the investigation protocol.

The participating inspectors were requested to identify the advantages and disadvantages of the system. This was requested to enable the researcher to ensure that the advantages are not lost in future implementations while attention can be paid to reduce the impact of any disadvantages identified. At the conclusion of the pilot study, and based on their collective experience accident investigations the following list of advantages was drafted by these inspectors.

6.2.1. ADVANTAGES OF THE PROPOSED INVESTIGATION METHOD

The inspectors involved in conducting the pilot study identified the following advantages of the newly developed accident investigation method:

- The fundamental contributing factors of accidents are effectively identified if the investigation focus on the failure modes as was the case during the pilot study.

- Accident investigations were less time consuming than formal inquiries, more cost effective and there were no need for expensive legal representation, as union representatives with little or no legal background could sufficiently represent their members.

- Employers and employees both recognised the investigation methodology as a tool that could assist them in determining the fundamental contributing factors of accidents and not as a punitive measure of apportioning blame.

- It was established that persons involved in the accident investigations took active part in the investigation and expressed their opinions freely. This resulted in more information becoming available that could be utilised during the establishment of the fundamental contributing factors of the accident to prevent future similar accidents.

- Inspectors were not required to take down useless verbatim statements, allowing the inspector to concentrate on establishing the fundamental contributing factors of the accidents investigated. Only information that positively contributed needed to be recorded.

- All parties were participating in decisions regarding the development of remedial actions, resulting in an improved ownership of the solutions and therefore resulting in more effective implementation.

- Remedial action implemented had a distinct positive affect on the accident statistics as the reportable injury frequency rate declined from 13.51 in January 1999 (the start of the trail) to 12.08 in December 1999. The downward trend is indicated on figure 6.1. The persons participating in the pilot study unanimously agreed that this significant downward trend in reportable accidents could primarily be attributable to the accident investigation methodology utilised and the associated remedial actions developed during the study.

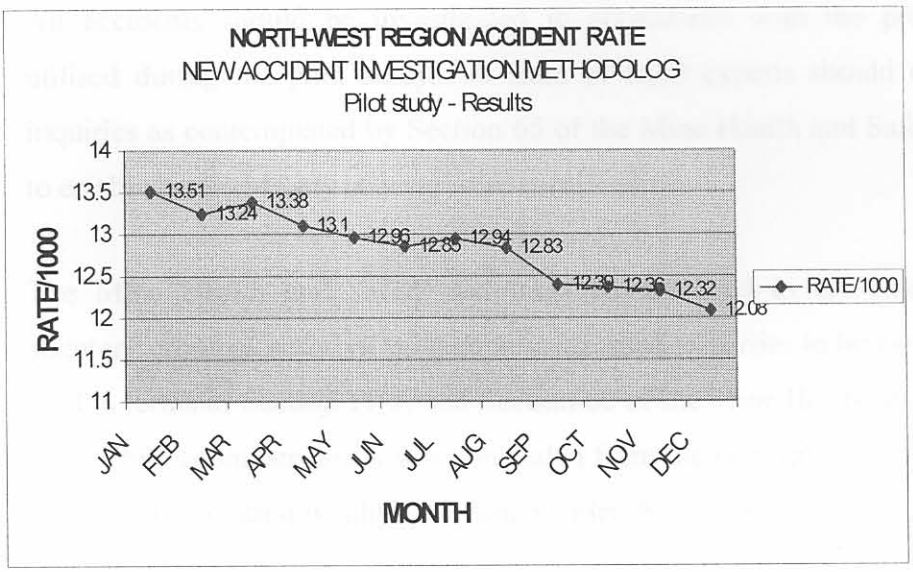

Figure 6.1: Significant downward trend of the accident rate resulting from the implementation of the newly developed accident investigation methodology

From figure 6.1 it is clear that the impact of this methodology was slow in the initial stages of the study but increased as more and more accidents were investigated. According to the field staff, this trend can primarily be attributed to two factors. Firstly, the impact of the corrective actions agreed to during the first few accident investigations were insignificant as the number of major failure modes identified still unattended to, were overwhelming. Secondly, and more significantly, the inspectors reported a great deal of mistrust from the stakeholders, in the initial stages of the study, as the Inspectorate is not known for this type of preventative approach during accident investigations. This mistrust was replaced by increasing openness as the participants in accident investigations realized that the investigators did not collect the information to use it in future prosecutions.

6.2.2. PILOT STUDY RECOMMENDATIONS

As a result of the positive results obtained during the pilot project, the following recommendations were made to the Mine Health and Safety Council:

- All accidents should be investigated in accordance with the procedure utilised during the pilot study. A team of legal experts should conduct inquiries as contemplated by Section 65 of the Mine Health and Safety Act, to establish whether any statutes were contravened.

- The Mine Health and Safety Act must be amended to the extent that statutory criminal and civil protection is afforded to parties in investigations held in terms of Section 11(5) and Section 60 of the Mine Health and Safety Act. This recommendation was concluded from the principle that more and accurate information would be obtained under these conditions.

6.3. CHANGING THE LEGISLATIVE FRAMEWORK

The Mine Health and Safety Act was fully developed and promulgated on a tripartite basis. The Act introduced a number of novel concepts in a South African context. The Act envisaged that conditions might exist where prosecution may not be the focus of investigations, by allowing for a process whereby the Chief Inspector of Mines, in consultation with the appropriate Attorney-General, may issue a certificate of no prosecution in respect of any contravention of, or failure to comply with, a provision of the Act, related to the event being investigated.

It is clear from the inclusion of Section 63(1) in the Mine Health and Safety Act, that the spirit of the Act was aimed at establishing the reasons for accidents in order to prevent future accidents, rather than wanting to establish statutory accountability.

It is obvious that, despite good intentions the provisions of this section of the Act is not effective, as no such certificate has been issued since the promulgation of the Act.

After having been presented with the facts, the Mine Health and Safety Council agreed that a tripartite task group be established that consists of a tripartite legal drafting team, who will be supported by one technical expert from each of the three stakeholders. This researcher was appointed as the State technical expert

to convene the task group.

The task group consisted of the following members:

Mr C Marx, State technical expert (Researcher)

Me S Meso, State legal advisor

Mr JR McEndoo, Employer technical expert

Mr A van Achterbergh, Employer legal advisor

Me M Llala, Employee legal advisor

It was agreed that the mandate of the task group be as follows:

- To clearly define the objectives of investigation and inquiries respectively, as envisaged by sections 60, 11(5) and 65 of the Mine Health and Safety Act and consider methods of incorporating it into the Act.
- To establish a statutory framework whereby the objectives as defined, can best be achieved.
- To recommend amendments to the Mine Health and Safety Act that will enhance the effectiveness of accident investigations, as anticipated by Section 63(1) in the Mine Health and Safety Act, that will give meaningful effect to the notion of enhancing the effectiveness of accident investigations.
- To develop a proposal on possible ways to determine the impact of de-linking of accident investigations from the legislative process on the social responsibility of the stakeholders, to uphold law and order in an industrial environment and develop contingency plans to ensure that no negative impact is caused.

The task group confirmed that there should be a clear distinction between investigations and inquiries, particularly regarding their objectives.

The objectives of investigations were defined as follows:

- Establish all the direct and indirect contributing factors to an accident/occurrence (without establishing statutory responsibilities or breaches) – in order to ensure, as far as possible, that similar accidents/occurrences, are prevented.

- Investigate (proactively or otherwise) any occurrence, practice or condition concerning health or safety of persons at one or more mines.

The objectives of inquiries were defined as follows:

- Establish whether there has been a breach of any health or safety provision associated with an accident/occurrence, in order to:

(a) Recommend prosecution of person/s alleged to be guilty of an offence; and

(b) Identify what needs to be done to prevent similar breaches in future.

Having regard to various factors, the task group concluded that there is probably no need for inquiries in the Mine Health and Safety Act, for the following reasons:

- There are numerous ways of obtaining evidence in order to substantiate criminal prosecutions (or administrative fines) where they are warranted;
- There are certain state organs that are specifically geared to institute criminal proceedings and these should be used to initiate criminal proceedings – with the assistance of the Inspectorate where necessary;
- Inquiries tend to be long, drawn out legal proceedings that achieve little positive outcomes;
- Inquiries into deaths can be dealt with in terms of the Inquests Act. Amendments can be suggested to the Inquests Act to ensure the involvement of inspectors.

The objectives of section 11(5) investigations should remain unchanged.

6.4. CONCLUSION

The results obtained during the pilot study confirmed that it is possible to prevent occupational accidents and reduce resultant suffering by implementing appropriate recommendations resulting from the use of the new model during accident investigation into workable solutions.

The use of the new accident investigation model also allowed a documented, verifiable and repeatable accident prevention programme to be implemented without any superfluous record keeping.

In the next chapter a summary of the research will be given and some final conclusions drawn.