

MINES RESCUE SERVICES SOUTH AFRICA

BUSINESS MODEL AND MANAGEMENT SYSTEM FOR EMERGENCY PREPAREDNESS

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Synopsis

Thousands of miners have lost their lives in mining operations, underground fires and explosions internationally. These deaths are generally the result of failure to maintain the working environment in a safe condition. Due to the high number of fatalities the legislature in South Africa has made it compulsory for mines rescue organisations to be established to provide rescue capabilities.

Mines Rescue Services in South Africa has gradually developed over the past 93 years into a fully integrated national rescue service for all underground mines in South Africa.

This paper will give an overview of Mines Rescue Services in South Africa and explain some of the specialized rescue systems and equipment available to deal with emergencies.

Introduction

Mines Rescue Services (MRS) is a private sector organization that trains persons for rescue work and administers a rescue scheme, to provide rescue and recovery services, resources and expertise for an effective emergency service primarily for the South African underground mining industry.

Vision

The Mines Rescue Services, through its available resources, will provide a complete structured emergency rescue system primarily to the mining industry with the objectives of minimising the loss of life and assets.

Mission statement

Our mission is through the training of voluntary Rescue Team Members to provide an efficient fire-fighting, rescue and recovery service, on a cost-efficient basis, with the objective of minimising the loss of life and assets.

We do this by: -

- Training Rescue Personnel to a competency of the required skills;
- Providing expert advice and consultancy;
- Remaining proactive to changes in technology and the environment;
- Providing and maintaining specialised equipment.

We advance, promote and protect the mutual interests of our stakeholders.

Who are: -

- Owners and management of member mines and works;
- Employees of our members, their organisations and Associations;
- Rescue Team Members and MRS employees;
- Department of Mineral Resources;
- Manufacturers and suppliers of equipment.

Quality Policy Statement

It is the policy of this company to continually strive for high standards of quality and the assurance to all stakeholders for a structured development, implementation and maintenance of a Quality Management System.

In achieving the above, management and all employees are committed to:

- Manage Mines Rescue Services on sound business principles;
- Ensure customer satisfaction;
- Ensure service agreements with customers are upheld to the highest standard;
- Provide the best possible training, consultancy and provision of emergency service;
- Co-operate and liaise between all stakeholders;
- Maintain relationships and uphold high ethical principles with suppliers;
- Apply all resources to ensure high standard of quality;
- Measure and review the success of quality on a continual basis.

Responsibility and Authority

The authorities and interrelation of staff within Mines Rescue Services are defined by the organograms as shown in this section of the report.

Responsibilities and Authorities are defined in the business process of MRS.

In the case of special projects, responsibility and authority will be defined as per the individual for the project.

Top Management

The Chief Executive Officer, governed by the Board of Directors, is ultimately responsible for the quality of all services provided by MRS. He is responsible in conjunction with the Manager: Finance & Administration for MRS' strategic planning and quality implementation process planning, the development of our Quality Policy, Vision and Mission Statements and provision of the necessary resources for accomplishing our goals and objectives.

Core Purpose of the Chief Executive Officer:

To lead and manage MRS, which provides its member mines (customers) with an effective underground fire-fighting rescue and recovery service on a cost-efficient basis.

Core Purpose of the Manager Finance and Administration:

Manages and controls the company's financial and administrative functions and assists the Chief Executive Officer in directing the company as an efficiently run business.

Core Purpose of the Superintendent Training

Manages and controls the company's training functions and assists the management in directing the company as an efficiently run business.

Core Purpose of the Superintendent(s):

To manage all functions needed to provide an efficient rescue and recovery service within their allocated geographic areas.

Core Purpose of the Assistant Superintendent(s):

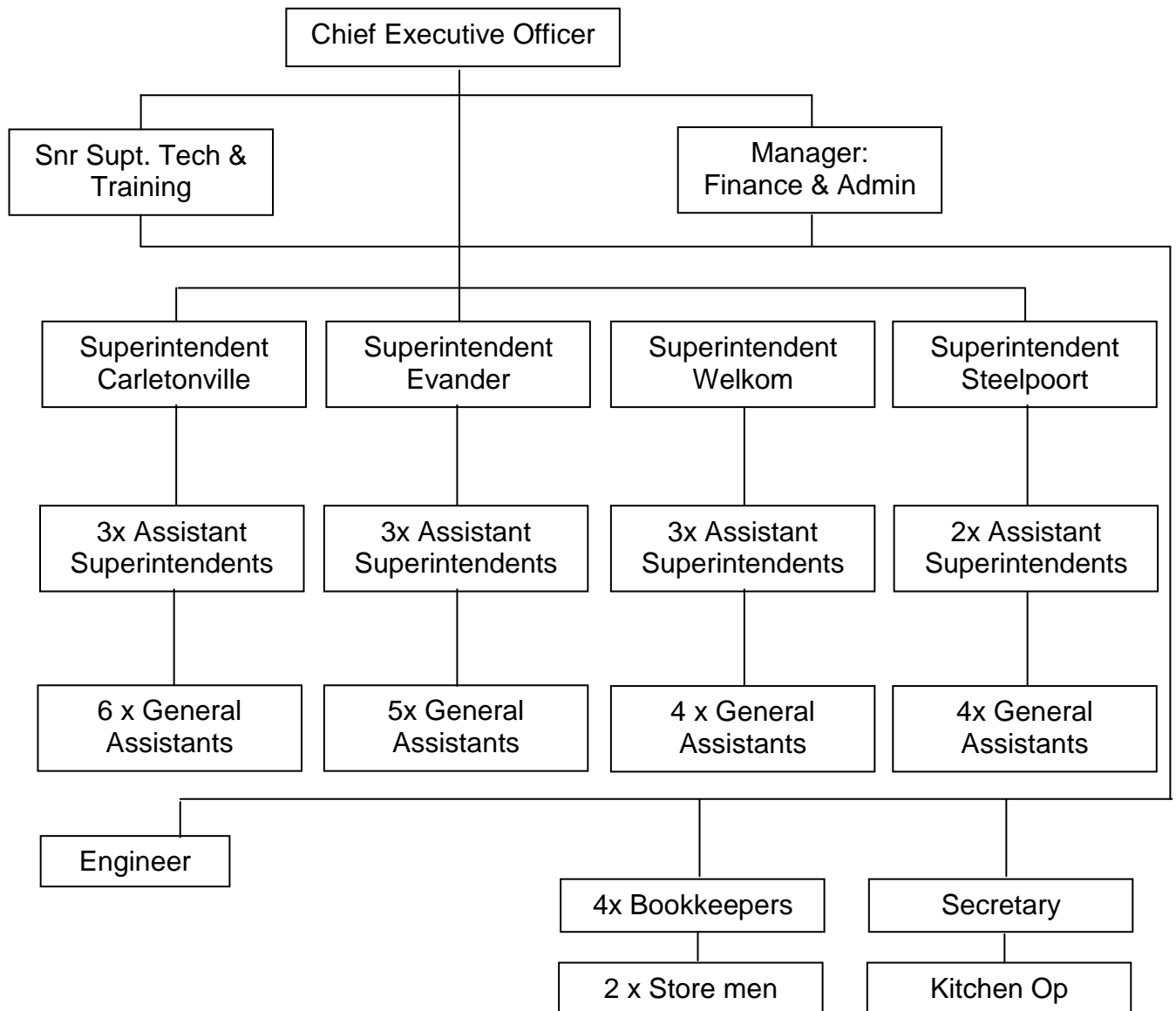
To provide a consultancy and emergency service and to adequately train Rescue Team Members to meet the requirements of active mines rescue work. Assist with all aspects of functions of the rescue stations.

In addition, the Superintendents and Assistant Superintendents are responsible for the execution of the Strategic Plan and implementation of the Procedures and Policies at the Rescue Stations. This explicitly includes responsibility for implementations of our Quality Policy and ensuring adherence to our Vision and Mission Statements throughout the rescue stations.

MINES RESCUE SERVICES ORGANISATIONAL STRUCTURE



MINES RESCUE SERVICES – STRUCTURE (TOTAL 46)



Rescue Services Scheme

All underground mines participate in the Rescue Services Scheme and become members of the MRS as either "A" Class or "B" Class members. This membership will entitle the mine to all the services rendered by the company and the only difference between the class of membership is that the "A" class member maintains its own rescue team/s as stipulated by law and the "B" Class member not.

Each "A" Class member mine will have fulltime employees of that mine who volunteer to become members of their rescue team. These rescue teams can be utilised on any other member mine during an emergency on a co-operative basis

The current membership of Mines Rescue Services is:

MRS membership and rescue brigade strength as at December 2016

| COMMODITY | MEMBER MINES | RESCUE TEAM MEMBERS |
|--------------|--------------|---------------------|
| GOLD | 26 | 314 |
| COAL | 40 | 220 |
| OTHER | 49 | 369 |
| TOTAL | 115 | 903 |

Four Rescue Stations are maintained at Carletonville, Evander, Steelpoort and Welkom, which are situated in the major geographical mining areas. All member mines throughout the entire country are serviced from these stations.

Financing and Shareholding

Mines Rescue Services is a private company registered in terms of the Company's Act.

- Memorandum of Incorporation
- 1000 Ordinary Shares
- Appointed Auditor
- Company Secretary & Public Officer
- Appointment of Directors
- Does not hold any fixed assets

Shareholders

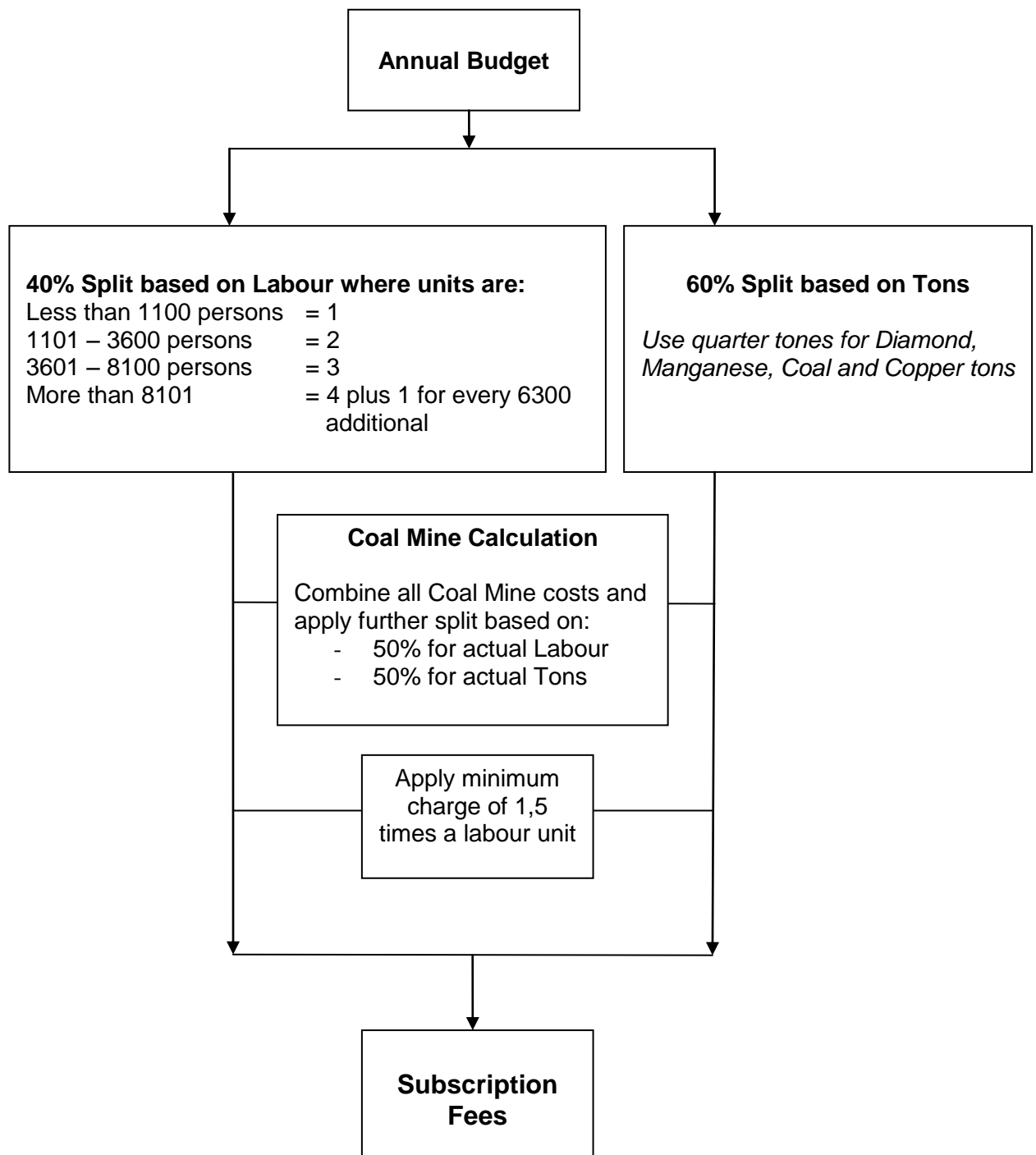
The only Shareholder of the company is the Mines Rescue Services Trust. The Trust holds all non-current assets of the company and provided the initial "start-up capital" of the company. The Beneficiaries of the Trust are the large mining groups who are members of the company. There is a Shareholders agreement for the appointment of Directors.

Financing

The company budgets on a non-profit basis and provides funds for the operational cost and Capital Requirements of the company

These costs are recovered from the members as a subscription fee and are determined on a proportionate levy based on 40 percentile of underground labour and 60 percentile of tons mined. These fees are invoiced quarterly in advance

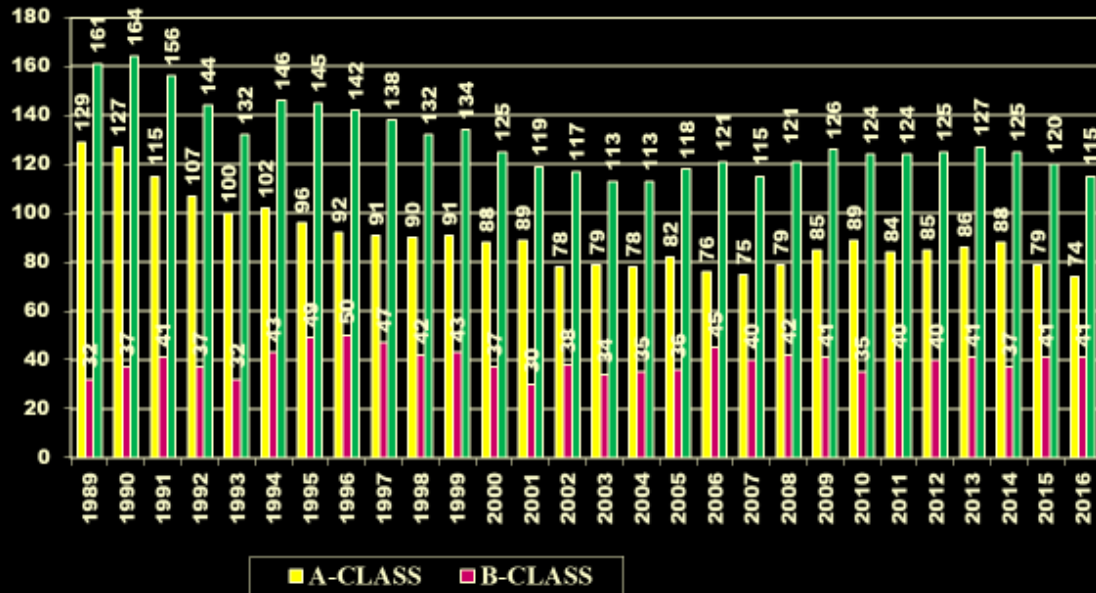
Calculation of Subscription Fees schematic





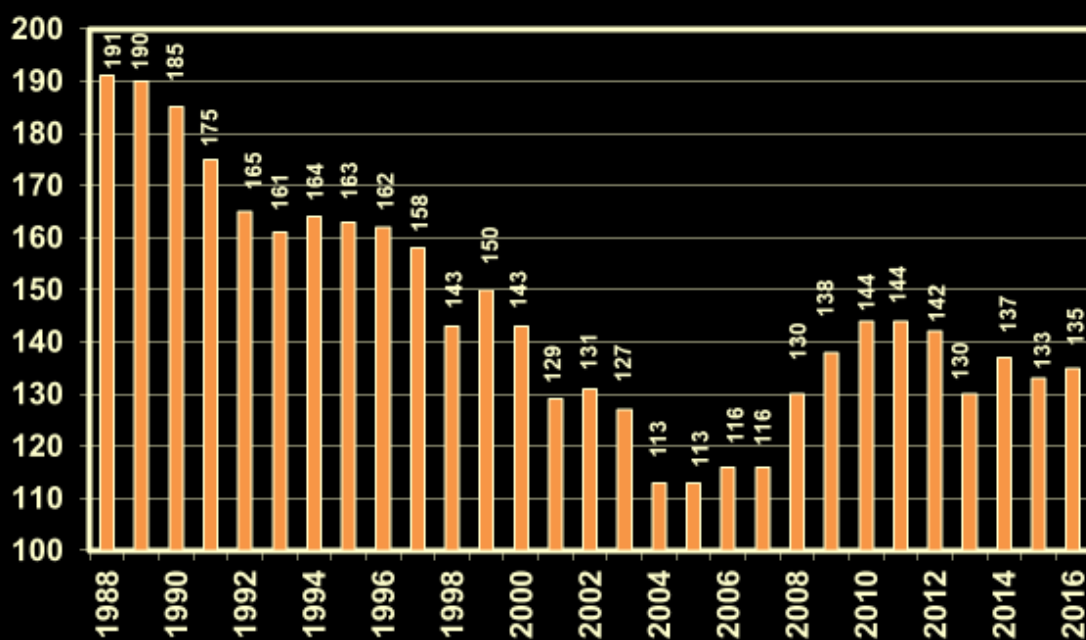
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M.R.S. MEMBER MINES



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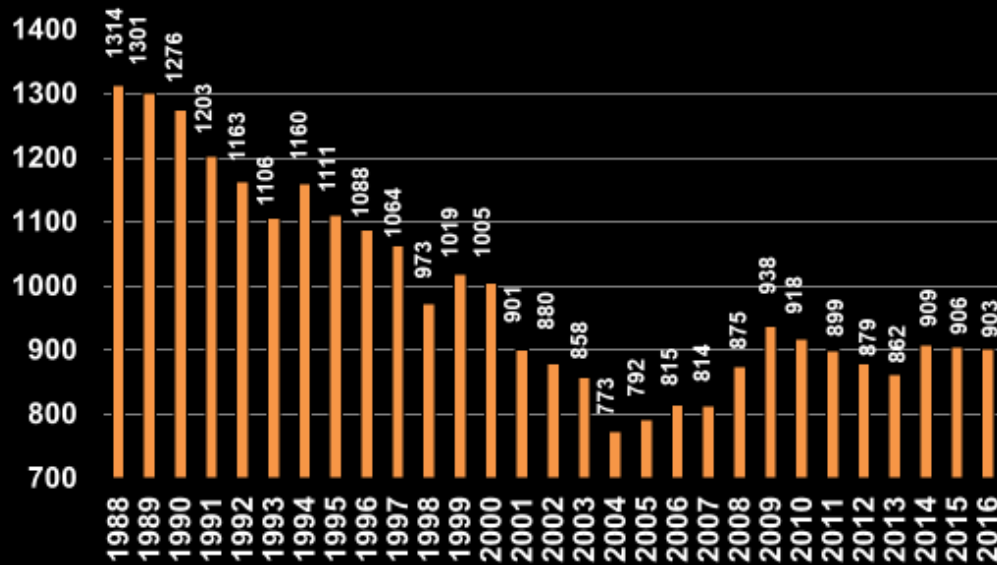
MRS - RESCUE TEAMS





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MRS BRIGADE STRENGTH



Causes of Metalliferous fires 1981 to 2016

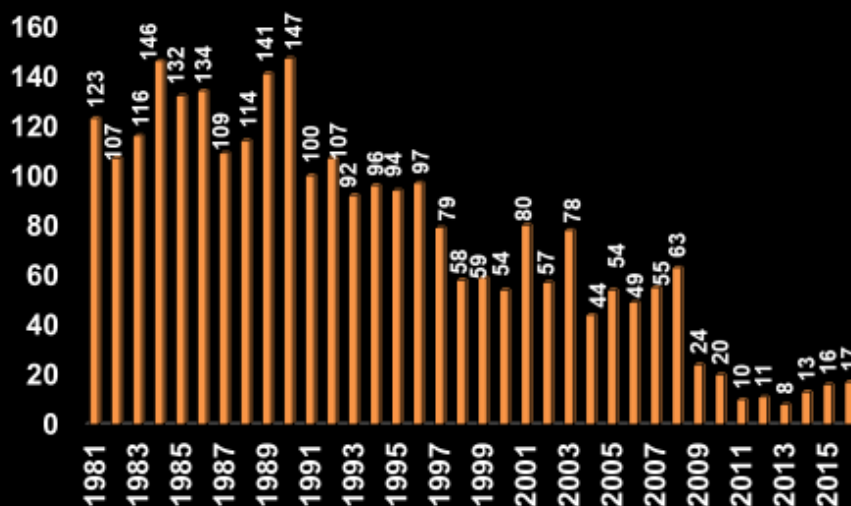
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| | |
|---------------------|-----|
| UNKNOWN | 966 |
| OTHER | 45 |
| CUTTING AND WELDING | 218 |
| ELECTRIC | 649 |
| FRICTION | 83 |
| SPON. COM. | 20 |
| SMOKING | 78 |
| EXPLOSIVES | 301 |
| SUSPECTED ARSON | 214 |
| VEHICLES/DIESEL | 58 |
| FLAMMABLE GAS | 52 |



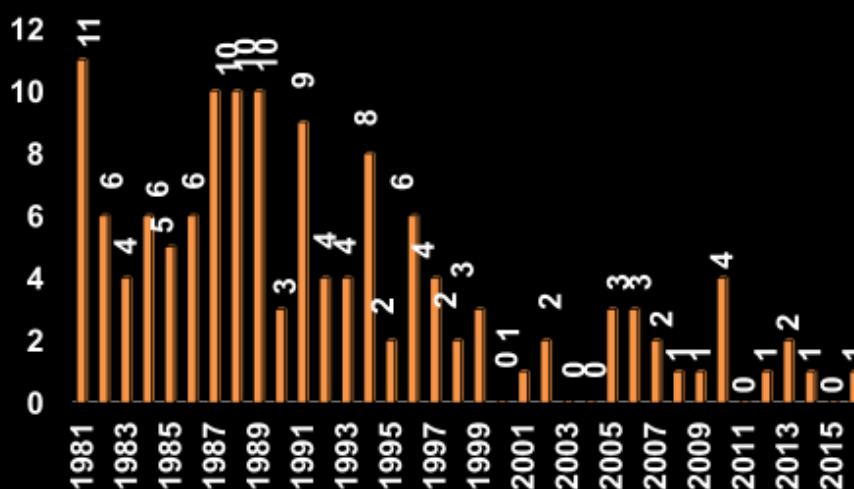
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METALLIFEROUS FIRES 1981 – 2016



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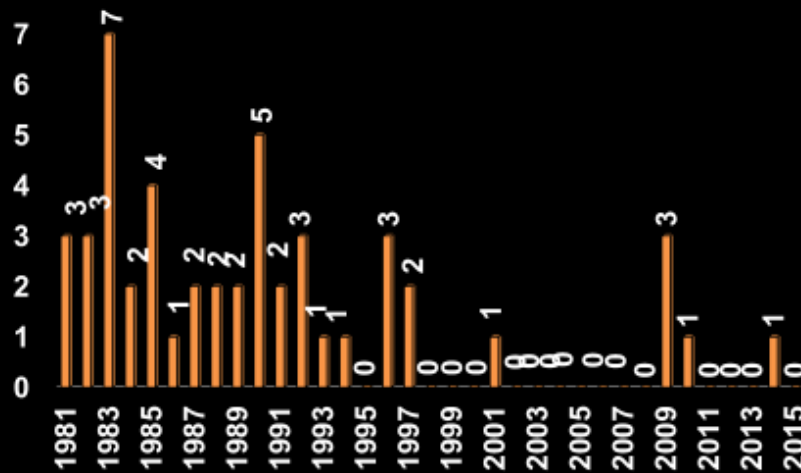
COLLIERY FIRES 1981-2016





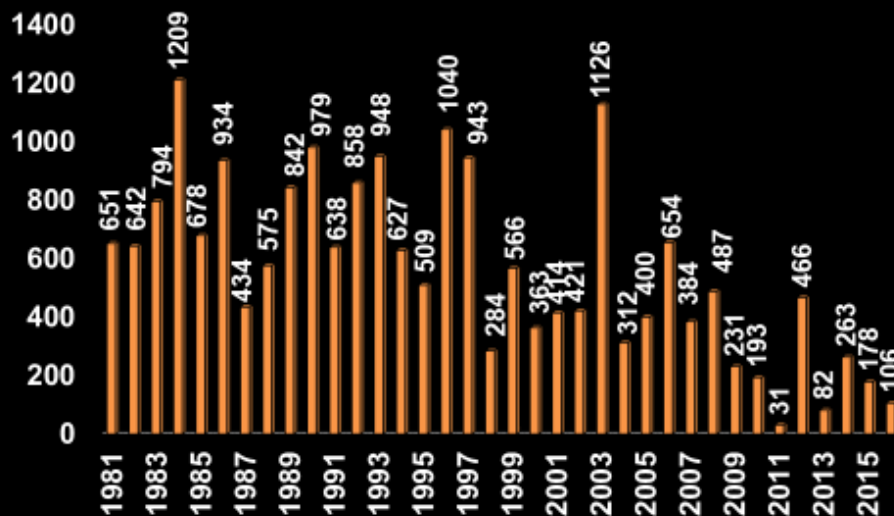
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COLLIERY EXPLOSIONS 1981 - 2016



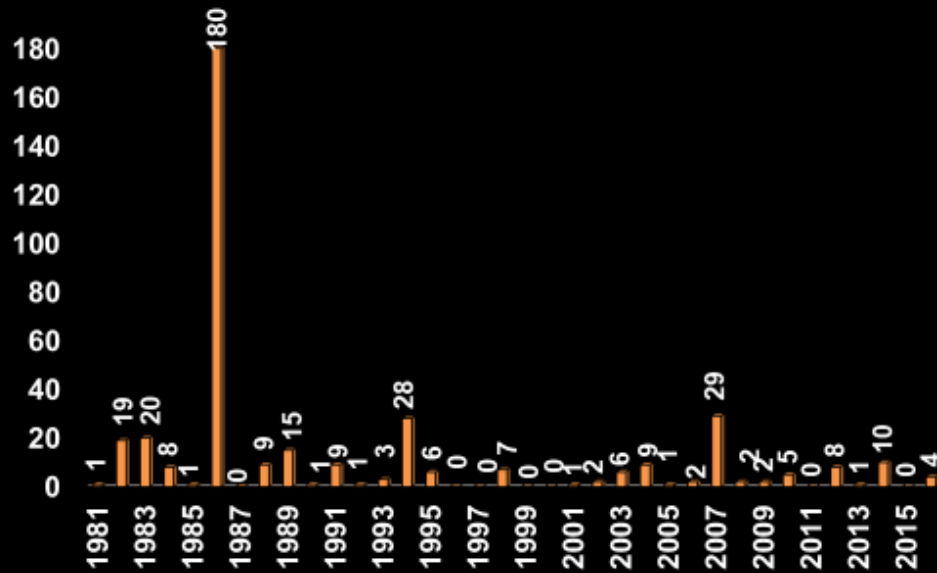
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RESCUE TEAM USAGE 1981 - 2016





Metalliferous fatalities due to fires & explosions 1981 -2016



COLLIERY FATALITIES DUE TO FIRES & EXPLOSIONS 1981-2016

