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KEY OBJECTIVE OF THE INSTITUTE

The key objective of the SAIMM is as follows:

To identify the needs of its members and to initiate and give effect to the means whereby the requirement for technology and scientific knowledge of the minerals and metals section of the South African economy are satisfied; and to represent and promote the interest of its members.

ARRANGEMENT OF THIS REPORT

As has become traditional and in accordance with the current management policy, this report on the activities of the Institute is presented under seven main headings:

1. The Interests of Individual Members
2. Technical Meetings
3. Publications
4. Regional Development

5. Contribution to the General Advancement of Science and Technology and Engineering in South Africa
6. International Liaison
7. Co-ordination, Management, and Administration.

1. THE INTERESTS OF INDIVIDUAL MEMBERS

Portfolio Holder: Dr O.K.H. Steffen

Key Performance Areas

To achieve its objectives regarding the interests of individual members, the SAIMM

- *undertakes to assess the qualifications, experience, and level of responsibility of applicants for membership, and allocates a membership certificate in an appropriate grade as a means of granting appropriate professional and technical status to individuals who practise in the minerals and metals sector;*
- *undertakes to prepare and publish career-guidance brochures, bursary handbooks, audio-visual and video programmes, optional school-curricula material, etc., and participates in the activities of the Phoenix National Committee to stimulate scholars and students to select careers in the minerals and metals sector of the South African economy;*
- *guards the professional interests of engineers, scientists, technologists, and technicians by providing a corporate voice and by representing their interests on bodies such as the South African Council for Professional Engineers (SACPE), the Federation of Societies of Professional Engineers (FSPE), the South African Council of Natural Scientists (SACNAS), and the Joint Council of Scientific Societies (JCSS);*
- *through representation on bodies such as SACPE, assists with the evaluation of curricula at universities and technikons with a view to improving the level of education of graduates and diplomates and to ensuring that the courses are relevant to the needs of the minerals and metals sector;*
- *makes awards, in the form of medals, prizes, and certificates, in order to recognize technical excellence, to stimulate a sense of pride in high standards of performance, and to encourage individuals involved in the minerals and metals sector to share the results of their work through publication; the following are eligible for SAIMM awards: individuals for the very highest achievements in the South African mining and metallurgical industry, SAIMM members and non-members for papers of the highest standard published in the Journal or other SAIMM publications, and students from universities and technikons for exceptional academic performance;*
- *arranges technical excursions, banquets, and other social events to create opportunities for professional association and fellowship for its members.*

1.1 Membership

Dr O.K.H. Steffen, Chairman	
B.C. Alberts	V.J. Moore
J.D. Austin	H.G. Mosenthal
R.D. Beck	G.Y. Nisbet
Prof A.N. Brown	Prof R.P. Plewman
J.A. Cruise	Dr R.E. Robinson
J.S. Freer	R.A. Snodgrass
J.P. Hoffman	P.C. van Aswegen
H.E. James	P.W.J. van Rensburg
Dr P.R. Jochens	P.A. von Wielligh
Prof R.P. King	Dr H. Wagner
Dr J. Lurie	

Table I, which gives a summary of the membership statistics, reflects a reasonable growth in numbers. Of particular interest during the past year was the change in the rule adopted by Council for the grade of Retired Member. The previous qualification of 75 years for the sum of age and membership was increased to 80 years, and is applicable to the grade of Fellow only. Regrettably, the rate of cost escalations has made it impossible to maintain the previous percentage of sponsored members. A membership of the Institute of 50 years is to be rewarded with a distinguished lapel badge of the crest in gold. Currently, 62 members qualify for this distinction, and Council thought it appropriate to express appreciation for this long period of support by the award of a special memento.

1.2 Career Guidance and Education

J.L. Nel, Chairman	
Prof A.N. Brown	Dr J. Lurie
A. Coetzee (co-opted)	M. McCarogher (co-opted)
M.G. Demmer (co-opted)	Prof H. Phillips (co-opted)
Prof R.J. Dippenaar	N. Stoffberg (co-opted)
Prof R.P. King	

During the past year, the Committee's mission and objectives were defined and accepted. These are contained in a working document that formed the basis of the Com-

mittee's actions.

Because of the wide variety of projects in which the Committee could become involved, a work procedure including priorities was drawn up. It was decided to directly involve the Committee in only a few critical programmes and to give limited support to the efforts of other committees with similar aims. One of the tasks of this Committee was to monitor the actions of other societies and organizations.

The following projects were undertaken.

A course on materials science was provided for the extra-curricular school for gifted children at the Normaal College of Pretoria, and has been in operation since February 1989. A ten-day winter school was held in July. Plans are afoot to set up the course at the Johannesburg College of Education, with Professor King taking the initiative.

Project Seed, the programme that encourages scholars to do research work at the University of the Witwatersrand, is continuing. The December 1988 session was extremely successful.

The Manpower and Education Department at the Chamber of Mines, in conjunction with staff in the Chemistry Department of the University of the Witwatersrand, produced two science-teaching resource packages on the mining, processing, applications, and uses of copper and manganese. These science packages are mainly aimed at the physical science scholars in standard nine, but contain mineral experiments that can be used from standard six to standard ten. Many of the lessons involve 'hands-on' experiments to simulate the metallurgical, geological, and analytical processes that are applied in the mining and extraction of manganese and copper.

Such packages are futile unless teachers are persuaded of their value and are taught how to use them in schools. A number of courses have been arranged throughout South Africa for science and student teachers during the past two years. By the introduction of optional science topics related to the mining and mineral-processing

TABLE I
SUMMARY OF NEW APPLICATIONS AND MEMBERSHIP MOVEMENTS FOR 1988/89 AND COMPARISON OF MEMBERSHIP GRADES AND TOTAL MEMBERSHIP 1987/88 AND 1988/89

Membership grade	1988/89									Net gain/loss	
	Members July 1988	New Members	Transfers in	Transfers out	Reinstatements	Resignations	Deceased	Struck-off	Computer adjustment		Members June '89
Honorary Life Fellow	27		2					2		27	0
Honorary Fellow	8									6	0
Life Fellow	57								1	56	-1
Fellow	411	20	12	14		3	3		3	426	15
Retired Fellow	184		12			4	8		-2	182	-2
Life Member	1									1	0
Member	733	35	17	11	1	11	3	11	-1	749	16
Retired Member	41					2	3	1	4	39	-2
Associate	676	27	108	18	8	16	1	36	-10	738	62
Retired Associate	28					2				26	-2
Student	295	60		108		2	2	18		225	-70
Company Affiliate	128	7				2			-2	131	3
Total	2589	149	151	151	9	42	24	66	-7	2606	19

industry into South African schools, a far larger number of scholars will be exposed to science and technology in the mining industry, and to the scientific and engineering careers that are available to school leavers.

The mining industry in South Africa has taken the initiative to become the leader in the development of such topics for schools in South Africa.

A member of the South African Federation of University Engineering Students (SAFUES) was co-opted onto the Committee since engineering students are making a large contribution in helping the Institute achieve its aims. The budget for the support of the SAFUES programme has been increased.

Iscor's Mining Department is involved in providing a course in ore-dressing at the Technikon RSA.

1.3 Awards and Adjudication Committees

Awards Committee—Mining

J.A. Cruise, Chairman

Dr C.J. Fauconnier (co-opted) R.P. Mohring
R.W.O. Kersten (co-opted) Dr H. Wagner

Awards Committee—Extractive Metallurgy

V.J. Moore, Chairman

R.D. Beck Prof R.P. King
G.A. Brown R.A. Snodgrass
Dr L.A. Cramer P.C. van Aswegen

Awards Committee—Metals Technology

J.P. Hoffman, Chairman

P.J. de Koker (co-opted) J.L. Nel
Dr P.R. Jochens

Adjudication Committee—Mining

Dr O.K.H. Steffen, Chairman

Dr C.J. Fauconnier (co-opted) D.J. van Niekerk
D.A.J. Ross-Watt (co-opted)

Adjudication Committee—Extractive Metallurgy

V.J. Moore, Chairman

R.D. Beck R.A. Snodgrass
G.A. Brown P.C. van Aswegen
Dr L.A. Cramer

Adjudication Committee—Metals Technology

Dr P.R. Jochens, Chairman

P.J. de Koker (co-opted) J.L. Nel
J.P. Hoffman

Brigadier Stokes Memorial Award

The Brigadier Stokes Memorial Award, which takes the form of a platinum metal and a cash award, is awarded to an individual for the very highest achievement in the South African mining and metallurgical industry, and is not necessarily based on technical expertise.

The Award was established in 1980, and the previous recipients were as follows:

1980 Dr H.F. Oppenheimer
1981 Dr W. Bleloch
1982 Dr F.G. Hill
1983 Dr A.W. Whillier (posthumously)

1984 Prof D.G. Krige
1985 Dr R.E. Robinson
1986 Prof M.D.G. Salamon
1987 Dr T.F. Muller
1988 Dr W.J. (Wim) de Villiers.

The Award for 1989 is to be made to Mr Robin A. Plumbridge. Mr Plumbridge was the prime motivator behind the development of the International Gold Corporation in its formative years during the mid and late 1970s. Intergold was the gold promotional and marketing arm of the Chamber of Mines of South Africa, with responsibility for the promotion of gold in jewellery, industrial uses, and investment. It was also the body responsible for the marketing of some 50 million Kruggerand gold coins worldwide.

Mr Plumbridge's efforts in his worldwide travels acting as a Chamber spokesman on the role of gold and the need to promote its attributes earned him an international reputation as an acknowledged world expert on gold.

Gold and Silver Medals

Papers published in the *Journal* from March 1988 to February 1989 by members of the Institute were considered for medals.

Gold Medal

Dr R.M.S. Falcon for her paper published in the May 1988 issue of the *Journal* entitled

'The characteristics of Southern African coals'.

A.J. Ham, a co-author and non-member of the Institute, will receive a certificate.

Silver Medals

D.B. Paterson for his paper published in the October 1988 issue of the *Journal* entitled

'The "lock-up" of gold in run-of-mine mills at Randfontein Estates'

A.B. Phillips, a co-author and non-member of the Institute, will receive a certificate.

Dr H.A.D. Kirsten and Dr T.R. Stacey for their paper published in the May 1988 issue of the *Journal* entitled

'Hangingwall behaviour in tabular stopes subjected to seismic events'.

Student Prizes

Prizes were awarded to the following students for the best student dissertations in part fulfilment of the BSc (Eng) degree:

Mining

R.H. Schmidt, University of Pretoria
'The continuous scraper'

Extractive Metallurgy

A.J. King, University of the Witwatersrand
'CIP plant design and laboratory project'

Technikon Witwatersrand

This prestige prize is awarded to the best student at the completion of the fifth year of the Masters Diploma in

Technology in Extractive Metallurgy: W.J. Coertzen.

This prize is awarded to a final-year student who throughout the course has maintained an aggregate of 80% or more.

T.D. Knight for the Four-year Course for National Higher Diploma in Extractive Metallurgy.

Other prizes, made to students at the Universities of the Witwatersrand and Pretoria, were presented at faculty prize-giving ceremonies held at the respective Universities. The prize winners were as follows:

University of the Witwatersrand

Prestige Prize:

Mining No award
Metallurgy No award

Book Prize:

Mining L.R. Smart
Metallurgy Siu-wah Wai

University of Pretoria

Prestige Prize:

Mining R.H. Schmidt
Metallurgy W.S.T. Morkel

Book Prize:

Mining A.W. Hartman
Metallurgy No award

Delfos & Atlas Copco Travel Grant

The Institute continues to administer this grant. The 5 recipients for 1989 were:

Ian Cockerill	Freestate Saaiplaas
Nicholas Marvin	Venterspost
John Wallington	Arnot Colliery
Marco van der Werff	Grootegeeluk
Jaoc Carrelo	Rustenberg Platinum.

The winners will visit the United Kingdom, Germany, France, and Canada.

The Institute and the mining industry are most grateful to Delfos & Atlas Copco for this very fine gesture towards the mining industry.

1.4 Banquet and Excursions

Dr O.K.H. Steffen, Chairman

R.D. Beck	R.A. Snodgrass
H.G. Mosenthal	D. Wilson
H. Scott-Russell	K.A. van Gessel

In liaison with the Electra Mining Exhibition, a banquet was held in September 1988 at The Carlton Hotel. Approximately 750 people attended, and most generous contributions from the companies who sponsored 45 tables ensured the success of the occasion. The guest speaker on this occasion was Dr Zac de Beer, who addressed the question 'Problems and Prospects for the Mining Industry'. A prize of a trip to Mauritius for two was awarded to a lucky winner.

The traditional banquet was held on 2nd June, 1989. Mr Murray Hofmeyr, Chairman of JCI, addressed the 650 guests on the subject of 'Will we still be the best by the year 2000?' Dancing to Ken Cole's band continued until the early hours. The event can be described as a most

enjoyable occasion with a stimulating message.

An annual banquet of this form is envisaged for March of each year, with an additional event to coincide with the Electra Mining Exhibition every second year.

1.5 Constitution, Rules, and Policy

B.C. Alberts, Chairman

J.D. Austin	H.G. Mosenthal
R.D. Beck	G.Y. Nisbet
Prof A.N. Brown	Prof R.P. Plewman
Prof R.J. Dippenaar	Dr R.E. Robinson
C.E. Fivaz	R.A. Snodgrass
J.P. Hoffman	Dr O.K.H. Steffen
H.E. James	P.W.J. van Rensburg
Dr P.R. Jochens	P.A. von Wielligh
Prof R.P. King	Dr H. Wagner

Council amended some of the By-Laws of the Institute to suit the current needs of its members.

A new edition of the Constitution and By-Laws is being printed. The edition that is in current use was printed in 1986. The new edition will include the constitutional changes made since 1986 and also the updated By-Laws.

An Afrikaans edition will be printed before the end of the year.

1.5.1 Strategic Plan

Following a strategic planning session, which was held at Thabazimbi, inputs from the responsible portfolio holders regarding their specific areas of responsibility were used in the preparation of a key document giving full details of all the Institute's critical performance areas and detailed information regarding the standards that must be attained to ensure acceptable performance. This Business Charter will enable Office Bearers and members to perform in accordance with the strategic plan of the Institute.

The Business Charter of the Institute will serve as standard practice to all Office Bearers and members of committee's to assist them in the performance of their work. The Business Charter will be updated at regular intervals.

1.5.2 Special Projects

A set of documents, known as 'The Family of Documents', has been compiled as a source of information regarding all Institute matters for prospective and current members. Matters covered in the key document are, *inter alia*, membership, technical meetings, regional development (branches), special projects, international liaison, publications, administration, and the Secretariat. The latest Constitution, as well as full details regarding the Institute's Journal and the books printed and distributed by the Institute, are included in this 'Family of Documents'. The set will ultimately be issued in a modern format and will be contained in a handy, eye-catching folder.

2. TECHNICAL MEETINGS

Portfolio Holder: H.G. Mosenthal

Key Performance Areas

To achieve its objectives regarding the dissemination of technical information via technical meetings, the

SAIMM

- organizes congresses, symposia, colloquia, schools, discussion groups, etc., to promote the transfer of current and new technology, and to satisfy the needs of its members for continuing education by the exchange of technical information, the communication of ideas, and the identification of technological problem areas.

The technical meetings during the year were organized by three sections: mining, extractive metallurgy, and metals technology.

Each of these sections has been very active during the past year in organizing schools, symposia, and colloquia (Table II). The details of these efforts are described in each section.

The three technical committees are collaborating actively with the organizers of the Electra Mining Exhibition, viz Specialized Exhibitions, in connection with an international conference that is to be held in September 1990. These exhibitions are held bi-annually. The 1988 exhibition was a national exhibition, whereas the one scheduled for 1990 will be an international exhibition. The colloquium held in September 1988 was confined to the mining section and was entitled 'Equipment Alternatives in Underground Mining'.

A far more ambitious international conference is planned for 1990, to which all three sections will contribute.

2.1 Technical Programme Committee—Mining

D.A.J. Ross-Watt, Chairman

Prof S. Budavari (co-opted)	R.P. Mohring
J.A. Cruise	H.G. Mosenthal
J.P. Deetlefs	H. Scott-Russell
R.B. MacGillivray (co-opted)	K.A. van Gessel
B.A. McKay (co-opted)	

Two events were held during the year.

In September 1988, a colloquium entitled 'Equipment Alternatives in Underground Mining' was held in conjunction with the Electra Mining Exhibition. A total of 135 delegates attended the Colloquium, and the high standard of the papers created considerable interest.

In April 1989, a school entitled 'Rock Engineering—Management Strategy for Safety and Economy' was held at Delta Park. In total, 105 delegates and authors attended. While some improvement to the facilities is necessary, the technical content of the presentations was high. A second school later in 1989 is being considered to widen

the exposure to production managers in the mining industry.

The Shaft-Sinking Colloquium that had been planned for June had to be postponed to 20 September 1989. Planning for the event at Megawatt Park is well advanced.

2.2 Technical Programme Committee—Extractive Metallurgy

P.C. van Aswegen, Chairman

Dr H.E. Bartlett (co-opted)	Dr A.K. Haines (co-opted)
R.D. Beck	V.J. Moore
G.A. Brown	P. Smith (co-opted)
Dr L.A. Cramer	H.C. Voges (co-opted)
J.S. Freer	

A colloquium and a school were organized during the year.

A two-day colloquium on 'Leaching' was held on 8th and 9th November, 1988. The purpose of the Colloquium was to bring the latest developments in leaching to the attention of metallurgists in industry. Seventeen papers were presented, with two plenary addresses by overseas speakers. The Colloquium, which was attended by 176 delegates, was well received, and confirmed that leaching is a very popular subject with metallurgists.

A school on 'Accounting for Gold' was held at Delta Park from 15th to 17th May, 1989. The purpose of the school was to bring the metallurgical, mining, surveying, and other related disciplines together to discuss problem areas associated with gold accounting on operating mines. The presentations were very well received, and the highlight of the School was the panel discussion on the last day. Owing to the interest aroused by the topic, the School was over-subscribed, being attended by 178 delegates. It is planned to repeat the School during November 1989.

2.3 Technical Programme Committee—Metals Technology

Prof R.J. Dippenaar, Chairman

Dr A. Harding (co-opted)	J.L. Nel (co-opted)
J.P. Hoffman	C.A. Scheepers (co-opted)
Dr B. Metcalf (co-opted)	D. Wilson

The Committee set, as one of its medium- to long-term objectives, the integration of the interests of the steel-

TABLE II
SCHEDULE OF TECHNICAL MEETINGS, 1988/89

Description	Title	Venue	Attendance
Mining Colloquium	Equipment Alternatives in Underground Mining	Nasrec	269
Extractive Metallurgy Colloquium	Leaching	Mintek	174
Metals Technology Colloquium	Ferrous Pyrometallurgy: A Challenge for South Africa	Vaal Triangle Technikon	93
Mining School	Rock Engineering—Management Strategy for Safety and Economy	SA Nature Conservation Centre, Delta Park	96
Extractive Metallurgy School	Accounting for Gold	SA Nature Conservation Centre, Delta Park	176
Extractive Metallurgy: Western Cape Branch—International Colloquium	Developments in Froth Flotation	Gordons Bay, Cape Town	150

making community into the activities of the Institute. This effort was pursued in the course of the year. A colloquium entitled 'Ferrous Pyrometallurgy: A Challenge for South Africa' was held at the Vaal Triangle Technikon on 18th April, 1989. The response to the Colloquium was good, and the participation of delegates very satisfying.

A short 'Metallurgical Presentations' competition was arranged in conjunction with the Institute of Metals, South African Region, and was held as part of the National Materials Week on 28th June, 1989, at the World Trade Centre. This activity was the result of an ongoing collaborative effort between the Institute and the Joint Engineering Materials Council. The Committee participated in staging the National Materials Week through its representation on the Joint Engineering Materials Council. A special effort was made to serve the interests of the materials engineering community; the preparations for a colloquium on composite materials and an international congress on the application of metals technology received a great deal of attention.

2.4 Mines and Works

H.G. Mosenthal, Chairman

B.C. Alberts	D.A.J. Ross-Watt
Prof A.N. Brown	P.W.J. van Rensburg
G.Y. Nisbet	

The Mines and Works Committee dealt with only one new Bill during 1988/89. This was the new Minerals Bill which had been drafted to simplify mining legislation. It purports to deregulate and pave the way for private enterprise. One of the most important features of the new Bill is the setting up of a Minerals Advisory Committee on which private enterprise would be represented.

Another important feature of the Bill is that it supercedes seventeen Bills previously on the Statute Book. The most important of these bills are the Mining Rights Act and the Mines and Works Act.

Comments from the Institute centred mainly on those parts of the Minerals Bill that had previously been handled by the Mines and Works Act.

2.5 International Conference

D.A.J. Ross-Watt, Chairman

During the year, work on the planned International Deep Mining Conference advanced well. A committee consisting of the Mining, Extractive Metallurgy, and Metals Technology Committees, the Johannesburg Branch, the Association of Mine Managers, the Association of Mine Resident Engineers, and The South African Institution of Mechanical Engineers has been set up and is operating well. Two notices, one of which is in the form of a full-colour brochure, have been widely distributed, and considerable interest has been generated locally and overseas. Papers for the Conference, which is planned for September 1990, are due at the end of 1989.

3. PUBLICATIONS

Portfolio Holder: R.D. Beck

Key Performance Areas

To achieve its objectives regarding the transfer of technology by means of publications, the SAIMM

- publishes a monthly journal with a balanced content and of high technical standard as a means of promoting technology transfer in all areas of interest to its members, and as a communication medium to keep its members informed on matters relating to their professional interests;
- publishes monographs, the proceedings of international symposia and conferences, and other publications of a high technical standard on topics related to fields such as underground mining, surface mining, extractive metallurgy, metals technology, and materials science as a means of promoting technology transfer within South Africa and as a mechanism for the display of South African skills to an international audience;
- enters into reciprocal international agreements for the advertising and marketing of publications to the financial advantage of its members.

The workload under this portfolio is very heavy. Getting the *Journal* into print every month, with its high standard of papers and some advertising to help pay the costs, is no mean task. Although papers in the pipeline for publication are now encouraging, the dearth of papers has not made it an easy year for the Chairman of this Committee. Mr Ronnie Snodgrass, who steps down as Chairman of the Journal Committee after 3 years, has contributed a lot of hard work, and his efforts are much appreciated.

The highly important task of refereeing papers seems to fall on a few hardworking members of the Institute. It is hoped to cast this net wider in future.

The 'News on the Job Market', which was first published last year, continues to flourish, and reports have been received that more replies to job advertisements through this medium have been received than is experienced through conventional advertising.

As highlighted in the report on book publications, nine potential volumes have been under consideration. To bring these into production is no mean target for amateurs who finally turn out professional books! To assist with this task, members of the Institute have been co-opted onto the Committee to see through the various publications. A system, which it is hoped will speed up the task of publication and give individual members a chance to be associated with this highly exciting and prestigious field of endeavour, has been instituted. Mr John Moore took over the reins of the Committee from Mr John Austin for a year until his retirement. He has achieved a consolidation of the Book Publication activities, and appreciation is expressed to him for his hard work during the year.

3.1 Journal

R.A. Snodgrass, Chairman

J.D. Austin	Prof H. Phillips
R.D. Beck	Dr O.K.H. Steffen
P.J. de Koker (co-opted)	P.C. van Aswegen
V.J. Moore	P.M.T. White

Programme Advisory Board Members

Dr H. Wagner, Chairman
R.A. Snodgrass, Vice Chairman

Mining	H.G. Mosenthal Dr C.J. Fauconnier (co-opted) Prof R.P. Plewman
Extractive Metallurgy Metals Technology	Dr P.R. Jochens, J.S. Freer Dr P.T. Wedepohl (co-opted)

For most of the year, a serious shortage of papers, especially in the fields of mining and metals technology, was experienced. The situation has recently been alleviated by the submission of papers from various colloquia held during the year, and a good balance of papers from the various disciplines is in the pipeline.

In spite of escalating costs, the finances of the *Journal* continued to improve as a result of a concerted effort to recruit advertising via direct contact with industry, as well as the continued success of the 'News on the Job Market'.

During the year, the refereeing procedures were reviewed and streamlined to reduce the lead time of papers to a minimum.

The structure was also set up for the publication of a comprehensive 'Diary of Events' relating to the activities of the Institute and the Branches. This diary will be published on a regular basis to keep members informed and to encourage participation.

Three papers from the Mineral Review series were published during the year:

January 1989	Mica and vermiculite in South Africa
May 1989	Phosphate in South Africa
June 1989	Andalusite in South Africa.

The valuable contribution to the *Journal* by the Programme Advisory Board, the panel of referees, Dr H. Glen (Editor), Mr F. Roberts (Proofreader), and Miss Caroline Jansen (Production Secretary) are gratefully acknowledged.

3.2 Book Publications

V.J. Moore, Chairman

J.D. Austin	R.W.O. Kersten (co-opted)
Dr H.E. Bartlett	Prof H. Phillips
R.D. Beck	R.A. Snodgrass
Dr L.A. Cramer	P.M.T. White
P.J. de Koker (co-opted)	

By both design and necessity, the year has been largely one of consolidation. Nine potential volumes were under consideration at the start of the year, of which two are with the printer and will be available soon. These are 'Metals and Minerals Industry in South Africa—Part I' and 'Treatment and Re-use of Water in the Minerals Industry'. The preparation of chapters for five volumes, two of which relate to schools organized by the Institute, is well advanced. Two volumes are currently under consideration, although more investigation is required before the decision to proceed can be given. After relatively minimal expenditure, work was stopped on one publication.

A stronger liaison with the Mines Professional Associations' Secretariat has been fostered over the year and, as a result, an agreement has been negotiated by which the Institute will market certain of their publications. This will prove beneficial to both parties. A large number of current and back volumes (some dating back to 1931)

have been taken over, and an active marketing campaign is about to be launched.

A major marketing drive into the overseas market was initiated, spearheaded by Mr John Austin during his trip to the United Kingdom as the Institute's representative at the CMMI meeting. Useful discussions are currently under way with possible marketing organizations in North America.

Special mention needs to be made of Mr Austin who, over the past few years, was largely responsible for inculcating in the Institute, particularly among Office Bearers and Councillors, a professional approach to the publication of technical books, ranging from the identification of material suitable for the market's needs through to the vital advertising and marketing functions. Although Mr Austin stepped down as Chairman of the Committee this year, he is still very actively involved in all facets of its activities as a Committee member. Thanks are also due to the hard-working Secretariat, particularly to Miss Caroline Jansen, who has 'run with the ball' all the year.

4. REGIONAL DEVELOPMENT

Portfolio Holder: R.D. Beck

Key Performance Areas

To achieve its objectives with regard to technology transfer and the promotion of the interests of its members based in regional areas, the SAIMM

- *supports the establishment of branches to satisfy the local needs of its members for professional association and the exchange of technical information;*
- *co-operates with other member societies of AS&TS and with associations and interest groups that have close ties with operating mines and metallurgical plants by holding joint technical meetings and collaborating in the field of publication.*

4.1 Regional Development

R.D. Beck, Chairman

K.R.E. Beard	R.P. Mohring
J.P. Deetlefs	J.G. McCallum
N.J. Devine	K.A. van Gessel
G.T.G. Emère	P.W.J. van Rensburg
Dr J-P. Franzidis	D. Wilson
A.M.P. Henderson	

Consolidation of the two new branches, Johannesburg and Pretoria, continued during the year, with high-quality talks being given at each. The non-mining area of the Western Cape continues to show enthusiasm for the industry through the universities, and special mention must be made of their schools days, where matric science pupils were introduced to the opportunities available to them in the mining industry. The enthusiasm of these Branches and the continued efforts of the other Branches, with their regular meetings and visits, supports the Institute's views that members' interests can be well served through Branch activities.

The local section of The Institution of Mining and Metallurgy in Namibia, with whom the Institute has liaison, continues to look after the members in that area.

The Western Transvaal Branch has not functioned this

year. The region feels that its interests are being served by other associations, but there is a certain amount of disagreement. An effort will therefore be made to re-establish the Branch at a suitable opportunity.

Interaction with the bodies active in the mining and metallurgical industries has continued. All the bodies concerned believe that duplication of effort is counter-productive, and ways to assist one another are being approached on a broad front.

Approaches have been made to mining associations in the northern and eastern Transvaal with the aim of establishing branches linked to them.

4.2 SAIMM Branches

4.2.1 Johannesburg Branch

G.T.G. Emère, Chairman	
J.J. Cilliers	D.J. Milella
Dr N. Gay	B. Moore
D.J. Haddock*	Dr C. Seymour
Dr E. Kirby	P. Smith

* Subsequently, Mr D.J. Haddock (Vice Chairman) resigned and Mr B. Moore assumed the responsibility of Vice Chairman.

The Johannesburg Branch of the Institute was officially inaugurated at a general meeting held in Kelvin House on Monday, 18th January, 1988. A committee was nominated and, at an ensuing meeting, the above Committee was appointed.

The objectives of the Branch are as follows:

- to create a forum for social interaction, based on the professional interests of a wider cross-section of people in the industry, stressing the importance of interaction between earth scientists, metallurgists, miners, and engineers;
- to create a forum for people in the profession to participate in the giving and receiving of information about projects, events, etc., rather than through the popular press;
- to allow a wider participation of members in the affairs of the Institute;
- to work in association with other institutes in areas of common interest, i.e. social interaction, technical sessions, and visits of interest to members.

During the term of office under review, seven general meetings and one annual general meeting were convened, three one-day visits took place, and one two-day excursion was organized. In addition, events for the remainder of this calendar year have been planned in some detail.

The general meetings and their presenters were as follows:

The Barbrook Project – G.T.G. Emère
The Lefkochryos Venture – L.C. Pouroulis
The Application of 'Expert' Computer Systems in the Mining Industry – R. Layton
Modern Geological Exploration Techniques – R. Viljoen
The Lesotho Highlands Water Scheme – T.P.C. van Robbroeck
The Navachab Opencast Gold Project – R. Attridge
The Vansa Vanadium Operation – E. Kirby.

The visits included two trips to the Rand Refinery and one to Sappi's Enstra Paper Mill. The excursion visited

Grootegeeluk, Matimba, and Thabazimbi.

With the exception of the visit to the Enstra Paper Mill and the two-day excursion, all the functions were well attended. In terms of the objectives set down at the inauguration of the Branch, it would not be remiss to confidently state that the Branch has enjoyed a successful eighteen months of activity. The Committee is to be congratulated on a sterling team effort and, although it is generally considered unfair to select individuals for personal recognition, it would be most imprudent if Don Milella were not accorded a sincere vote of thanks for his dedicated and unselfish contribution to the interests of the branch.

Further, failure to acknowledge the invaluable assistance cheerfully provided by Mesdames Celeste Mackintosh, Pam Binstead, and Caroline Jansen in ensuring the efficient running of the Branch would be most inconsiderate. From the Committee therefore 'Many thanks for a job well done!'

Memorable features of Branch meetings were the cocktail parties, which were so generously financed by numerous sponsors. These functions have contributed significantly to enhancing the social impact of meetings whilst encouraging members to linger a little longer and get to know one another better. The Branch expresses its sincere thanks to the companies and individuals who so willingly supported these functions.

An honest attempt was made to address the previously mentioned objectives by creating a forum for a more general inter-disciplinary interchange of knowledge and a sharing of experiences. The mineral industry, and indeed the South African way of life, is fraught with far too much of 'them and us'. It is the earnest hope of the Committee that in some small way the activities of the Branch have assisted in drawing the 'them and us' a little closer, at least in this specific field of endeavour.

4.2.2 Orange Free State Branch

J.G. McCallum, Chairman	
F.M.G. Egerton	Dr M.A. Orridge
H.M.W. Eschenberg	P.H. Radcliffe
D.R. Fleming	C.P. Smit
W.J.N. Gelderblom	E.N.D. Westgate

During the latter half of the year, Messrs P.H. Radcliffe and C.P. Smit were transferred out of the area, and Messrs A.H. le Roux and J.C. Steenkamp were co-opted onto the Committee.

The Annual General meeting was held at the Unicorn Recreation Club on 27th July, 1988. It was well attended by both members and their guests. Dr Ben Alberts was the guest speaker and addressed the topic of the present status and future direction of the Institute.

The Committee met at regular intervals and endeavoured to increase the activities of the Branch. Mini-technical visits have been introduced, and two mini-technical visits are planned for September and November 1989.

To date, two meetings have been held, with guest speakers at both.

At the first meeting, Mr Dries Sonnekus, Public Relations Manager for Mossgrass (Pty) Limited, presented an enlightening talk on the scope of the project and progress

to date. The meeting was attended by 16 members and 22 visitors, many from other disciplines within the mining environment.

At the second meeting, Major V. du Preez of the Gold and Diamond Theft Division of the South African Police made an interesting and humorous presentation. The attendance was 33 members and 27 visitors.

The first of the mini-technical visits was held on 17th March, 1989, and 21 members participated in the trip to Bloemfontein. This included a most interesting tour of the Musgrave Firearms Factory, where the hospitality of the staff was outstanding.

The traditional Annual Visit was, in deference to the lower gold price, shortened to a one-night stay in Kimberley to enable an early start to a full technical programme. The focus of the tour was mechanized mining, with special emphasis on the often under-played need for a comprehensive maintenance programme. The underground visit arranged by De Beers was both very interesting and highly instructive. The day included a tour through the diamond-recovery plant, where the highlight was, without doubt, the eventual appearance of those 'shiny little stones', as well as a trip to the Big Hole and the Mining Museum. In the midst of all this, De Beers hosted the visitors to a particularly fine lunch in the historic and elegant surroundings of the Kimberley Club.

This was, all in all, a most worthwhile tour for the 27 members who were able to participate, and sincere appreciation is extended to the gracious hosts, De Beers, Kimberley.

4.2.3 Pretoria Branch

J.P. Deetlefs, Chairman

P.H. Botha	P.J. Pistorius
Prof A.N. Brown	Prof R.F. Sandenburg
Dr C. Grobler	

The past year was the first full year of the Pretoria Branch since this Branch was formed on 1st February, 1988.

The Branch Committee agreed to meet once every second month.

Three events were planned and held during the year. The Annual General Meeting was held on 17th October, 1988, at which Dr D.C. Neethling addressed the meeting on 'The Energy Policy of the RSA'. On 27th February, 1989, Professor P. Roelf Botha addressed the meeting on the activities of the Council for the Environment, and how they affect mining in South Africa. The third event was the Hendrik van der Bijl Memorial Lecture entitled, 'Towards a Technology Policy', which was given by Dr Louw Alberts on 17th May, 1989. The Pretoria Branch arranged this event on behalf of the Institute. The attendance at the lecture was exceptionally good (well in excess of 200 people).

The Annual General Meeting and the Branch Meeting were attended by approximately 20 to 30 people. Unfortunately, these events were attended by virtually the same set of people.

Future events will be better advertised on a personal basis, and the Committee is optimistic that future attendances will improve dramatically as a result of these efforts. In future, the type of event will be varied,

although the number of events will still be kept at 3 to 4 a year.

4.2.4 Vaal Triangle Branch

K.R.E. Beard, Chairman

F. Abbott*	P. Taljaard
W. Barrett*	Prof C. van der Colf*
Prof M.D. Brayshaw	Dr M. van Wijngaarden
N. Kock	P. van Wyk
B. Lodewijcks	S. Vorster
A. Maass	D. Wilson
D. Saayman	

* Resigned during the year.

The first meeting of the Branch Committee was convened on 5th October, 1988, at Emufuleni Club, by Mr Darryl Wilson, the Immediate Past Chairman. It was learnt that the recently elected Chairman, Mr Frank Abbott, had been incapacitated, and Mr Kenneth Beard was voted Branch Chairman and Professor Mike Brayshaw Vice-Chairman. The Vaal Triangle area is notorious for the turnover of professional people, and 1988 was no exception. Three members of the Committee were unable to serve for this reason. It was agreed to co-opt Dr Martin van Wijngaarden, and he accepted.

Having begun the year on such unstable grounds, the Committee planned events to cater for a wider range of interests in order to attract members, potential members, and the attention of the local community and industry.

The first event of the year was a visit to SA Breweries in Isando, on 14th February, which was aimed at attracting the younger and student members of the region. The tour was enjoyed by a group of 15, which was a disappointing response considering the pool of students and newly qualified engineers in the area.

The guest speaker at the meeting on 14th March was Mr Ashton Sparrow, national convener of the Accelerated Christian Education (ACE) programme in South Africa. The programme has a well-founded scientific basis, and appears to address many of the weaknesses and loopholes of our current educational system.

On 18th April, the Branch hosted a colloquium, entitled 'Ferrous Pyrometallurgy: A Challenge for South Africa', at the Vaal Triangle Technikon. The Colloquium was highly successful and attracted one overseas delegate, who came out from France for the one-day event. The event was organized in conjunction with the Metals Technology Committee, and shows what contribution the Branches can make towards the Institute's technical programme.

A visit to the Continuous Annealing and Processing Line at Iscor failed to attract much interest, and only 10 people attended.

The Vaal Triangle Branch was due to hold the regional heat of the Institute of Metals' short metallurgical presentations on 6th June, and the winner was to have been a finalist in the national competition, held during National Materials Week. The objective of this event is to provide an opportunity for both novice and seasoned speakers to present a 15-minute lecture on any aspect of metals technology, with the emphasis on the quality of presentation rather than on the technical content. Notwithstanding arduous efforts by various members of the Com-

mittee directed at its own membership, as well as at the local educational institutions and industry, not a single entry was received. The response received by the main organizers of the event was the same.

4.2.5 Western Cape Branch

Dr J-P. Franzidis, Chairman

Prof A. Ball	M.A. Reuter
Prof F.L.D. Cloete	Prof J.S.J. van Deventer
Prof C.T. O'Connor	Dr P.J. van der Walt*

* Resigned during the year

The Western Cape Branch was formed in 1986 with the aim of creating an awareness of the minerals industry in the region, particularly with respect to young job-seekers. Its main functions are an annual mineral-processing symposium held alternately in the Departments of Metallurgical Engineering at the University of Stellenbosch (US) and Chemical Engineering at the University of Cape Town (UCT), and schools days. In addition, technical meetings and visits are arranged for members.

The second Annual General Meeting and Dinner of the Branch was held on 4th August, 1988, at the University of Stellenbosch. The Dinner, attended by about 70 people, was a most enjoyable evening. Mr Ben Alberts, the President of the Institute, gave a memorable address.

The 7th Annual US-UCT Mineral Processing Symposium was held on 5th August, 1988, with a total attendance of about 70, including many members from the Transvaal. The Symposium was opened by Professor Christo Viljoen, Dean of the Faculty of Engineering at US. Professor Tony Ball of UCT gave the keynote address on material-science applications in mineral processing. Papers were delivered on a variety of topics, including froth flotation in columns and air-sparged hydrocyclones, carbon-in-pulp, oil agglomeration, and bacterial leaching. Professor Rod Edwards of the Department of Chemical Engineering at the University of Natal (Durban) gave a resumé of the mineral-processing research in that department.

This year, an international colloquium on 'Developments in Froth Flotation' has been arranged for 3rd and 4th August, 1989, at the Van Riebeeck Hotel in Gordon's Bay. A total of 27 papers will be delivered, including a keynote address and two review papers by prominent overseas speakers. About 150 delegates are expected to attend the Colloquium, from all over South Africa and abroad.

The organization of the Colloquium occupied most of the committee's attention over the past year. However, a technical visit was arranged on 18th May, 1989, to the Nymphaea oil-drilling rig in Cape Town harbour. About 20 members and visitors were given a talk by Soekor staff on process flowsheets for the drilling of muds, gas, and condensate streams, and a walk-about the platform. A visit to the second Du Toit's Kloof Tunnel is still planned for later in the year.

The Branch arranged schools days again this year on 28th April, 1989, at UCT and US, to introduce matric science pupils to the opportunities available to them in the mining industry. At US, the visit was hosted by the Departments of Metallurgical Engineering and Geology, and at UCT by the Departments of Chemical and

Materials Engineering. Altogether, about 125 pupils and teachers attended.

4.2.6 Western Transvaal Branch

N.J. Devine, Chairman

This Branch was not active during the year.

4.2.7 Witbank/Middelburg Branch

A.M.P. Henderson, Chairman

A.C. Botha*	C.P. Goodale
J.A.D. Britz	T. Schmoll
E. Ford	R.B. Smith
C.D.R. Galpin	L.G. van Biljon

* Resigned during the year

Mr A.C. Botha, a long-serving member of this Branch, moved to Johannesburg during the year, and was not replaced on the Committee.

The efforts of Immediate Past Chairmen to establish support for a new branch in the Secunda region continued. It is clear that members' interests are not adequately catered for in this region of the Branch. However, all indications are that the members in Secunda/Evander would prefer to associate with the Branch as it currently exists. An effort will be made to schedule meetings in the Secunda area in future. This is planned for the coming year.

Regular Committee meetings were held during the year to promote the development of the region. Being a self-financing Branch, the Committee was greatly indebted to the various companies and organizations who kindly sponsored the year's events. The following activities were recorded in 1988/89.

The Branch was addressed by the outgoing President, Mr B.C. Alberts, following the AGM at the South African Coal Estates Club.

Two papers were presented at an early evening meeting held at the Highveld Club by two quality-assurance practitioners. Mr A.V.S. Meyer's address was on 'Applications of Q.A. in the Steel Industry', and Mr H. Dohne talked on 'Total Quality Management in the Mining Industry—a Different Perspective'. Refreshments were kindly provided after the presentations by Joy Manufacturing.

AECI Explosives Division provided a technical presentation and practical site demonstrations at their Pine-lands, Modderfontein site. This tour was well-supported, even after some late withdrawals, and was of great interest to the mining members. The Explosives Division provided an excellent luncheon for the guests.

The Management of Greenside Colliery hosted a dinner for members and guests, which was addressed by Professor David Horsfall in his inimitable style. An attendance of 48 was recorded for this very successful event.

4.3 Establishment and Development of Special Interest Groups

4.3.1 Special Interest Group on Surface Mining

Prof A.N. Brown, Chairman

C.J. Bircher	E.E. Eichenberger
R. Curtis	P.A. Rossouw

The Annual General Meeting was held at the Mining Department, University of the Witwatersrand, on 12th October, 1988, where the Committee was elected. After the meeting, two speakers delivered short presentations on the topic 'Lightning Hazards in Surface Mining'. Mr J.B. Raath, Government Mining Engineer, focused attention on the principles of various lightning-hazard warning devices and their effectiveness for opencast mines. Mr K. Zeh, Senior Lecturer in Electrical Engineering at the University of the Witwatersrand, discussed the probable effects of lightning strikes on or near power lines and mining equipment, as well as giving practical suggestions for improving safety. The meeting was not well attended.

On Thursday, 2nd March, 1989, a most successful visit was paid to the New Vaal Colliery at Vereeniging. A total of 55 persons attended the interesting morning visit to the mine to see the removal of overburden sand with a bucketwheel excavator, the stripping of overburden with a giant walking dragline, the mining of successive coal seams, and the rehabilitation of the mined area. This surface-mining operation is taking place above a previously mined underground colliery.

In the afternoon, some 25 persons visited the Lethabo Power Station, the most modern in the country, which burns coal at a calorific value of 16 MJ and 40% ash content.

At one of its meetings, the Group discussed the issue of educational courses for operators employed in surface mining, as well as instituting open-pit and quarry-manager's diplomas.

5. CONTRIBUTION TO THE GENERAL ADVANCEMENT OF SCIENCE AND TECHNOLOGY AND ENGINEERING IN SOUTH AFRICA

Portfolio Holder: B.C. Alberts

5.1 Contribution to the Advancement of Science and Technology in South Africa

Key Performance Area

To achieve its objectives, the SAIMM

- *participates in the work of AS&TS (The Associated Scientific and Technical Societies of South Africa) in order to play its part in making a meaningful contribution to the general advancement of science and technology in South Africa.*

Representatives on AS&TS

Committee	Representative	Alternate
Controlling	C.E. Fivaz	B.C. Alberts
Executive	Dr O.K.H. Steffen	H.G. Mosenthal
Kelvin Management	J.D. Austin	
Science and Technology	H.E. James	Prof A.N. Brown

5.1.1 Controlling Executive

Mr L.H. James succeeded Mr D.H. Mills as President of the AS&TS in November 1988. The most important event from the Institute's point of view was the decision to acquire the Observatory site, which has been vacated by the CSIR, as the new home for the AS&TS. SACPE and certain learned societies have already occupied the available renovated office accommodation. A mammoth

task lies ahead in raising the necessary funds to finance the scheme, and a concerted fund-raising drive has been launched, both in the ranks of member societies and in commerce and industry.

However, the Institute has grave reservations regarding certain aspects of the plan. These include the highly optimistic expectation for income for the Observatory projects. The amount expected to be raised by donations and the selling of debentures seems over-optimistic in view of the current economic climate of the country.

The part that Kelvin House will play in the future has not yet been decided. The facilities at Kelvin House have always served the needs of the Institute admirably, but it is realized that the facilities are inadequate for the larger societies. The Institute therefore supports the Observatory project in principle.

5.1.2 Committee for Science and Technology AS&TS

The bi-ennial two-day conference of the Associated Scientific and Technical Societies (AS&TS) was held at the CSIR Conference Centre in Pretoria in August 1988. The Conference was entitled 'People for Research and Development'. It was well attended and many prominent persons concerned with education, research, and development presented papers, which are available in published form. The Conference highlighted the present position, which is fraught with many serious problems. A three-man delegation under the leadership of Dr C.F. Garbers, President of the CSIR, was commissioned to convey the conference conclusions to the State President.

Within the ambit of education, the AS&TS arranged a two-day workshop on education at the University of the Witwatersrand in October 1988. Committees continue to give attention to education matters, including continuing education courses. It also hosted a dinner for the 100 top scholars participating in the National Youth Science Olympiad.

Close ties are maintained with PROTEC and also AFRITECH 89, an African Conference dealing with 'Technology for Africa', which is scheduled to be held in a neighbouring African country.

The AS&TS took a leading role in the organization as a co-sponsor of the World Environment Day Symposium. It is traditionally held in June at Mintek, and the theme this year was 'Man the Ultimate Invasive Biota'.

The AS&TS National Award was made to the Accelerator Group of the National Accelerator Centre at the Annual General Meeting in November 1988.

Better communication with members of the 63 member societies is the objective of a new-look *Kelvin News*. The *South African Journal of Science*, which is a prestigious well-recognized international scientific publication continues to do well, although there are difficulties with its long-term financial viability. Despite the favourable location of Kelvin House, the Lunch Hour Lecture Programme has been poorly supported, and an experiment is to be conducted with early evening lectures on popular topical subjects.

5.2 Contribution to the Advancement of Engineering in South Africa Key Performance Area

To achieve its objectives, the SAIMM

- participates in the work of SACPE (the South African Council for Professional Engineers), FSPE (the Federation of Societies of Professional Engineers), and ASRET (the Affiliation of Societies Representing Engineering Technicians) in order to play its part in making a meaningful contribution to the general advancement of the engineering profession in South Africa.

5.2.1 Contribution to the work of SACPE

Nominees on SACPE Council

	Metallurgy	Mining
Representative	H.E. James	H.G. Mosenthal
Alternate	Prof R.J. Dippenaar	R.P. Mohring

Professional Advisory Committees

PAC Metallurgy

R.D. Beck	Dr P.R. Jochens
Prof R.J. Dippenaar	Prof R.P. King
C.E. Fivaz	Dr B.K. Loveday
Dr A.K. Haines	Prof R.F. Sandenbergh
H.E. James	Prof G.T. van Rooyen

PAC Mining

Prof A.N. Brown	Prof R.P. Plewman
J.A. Cruise	J.B. Raath
Prof D.G. Krige	D.A.J. Ross-Watt
R.P. Mohring	Dr O.K.H. Steffen
H.G. Mosenthal	D.J. van Niekerk

During the past year, the PAC Mining and PAC Metallurgy Committees of SACPE continued their important work of screening the qualifications and practical experience of applicants for registration as professional engineers. Several training programmes for engineer-in-training submitted by local mining and metallurgical organizations, were also screened by the Committees prior to being accepted by SACPE. Assistance continues to be provided by nominees of the Institute in the accreditation of courses offered by universities and technikons in the disciplines of mining and metallurgy.

The Professional Advisory Committee of The South African Council for Professional Engineers (SACPE) approved a number of candidates for Professional Engineering status. These candidates had fulfilled the requirements of a university course recognized by SACPE and had completed a three-year training programme.

In certain other cases where a candidate had not attended a university course recognized by SACPE, an oral examination was conducted. These examinations were conducted by panels of at least four Professional Engineers. The Chairman of the examining panel was a member of the Registration Advisory Committee of SACPE.

5.2.2 Contribution to the Work of FSPE SAIMM Representatives on FSPE Committees

Executive Committee

Representative	D.A.J. Ross-Watt
Alternate	C.E. Fivaz

FSPE Board

Representatives	Dr O.K.H. Steffen	D.A.J. Ross-Watt
Alternates	C.E. Fivaz	H.G. Mosenthal

Other Committees

Publicity Committee	Dr L.A. Cramer
Education Committee	J.L. Nel

During the year under review, the Federation of Societies of Professional Engineers (FSPE) continued to operate at fairly low key because of the uncertainties regarding the future structure of the engineering profession. The President of FSPE arranged a meeting of presidents of the affiliated societies and institutes in order to give them the opportunity to obtain clarity on any uncertainties they may have had in regard to the proposed South African Engineering Association (SAVI) and the Society of Professional Engineers (SPE). He urged them to support the formation of the two bodies.

The Institute indicated that it could not support the formation of SAVI and SPE since it had grave reservations about certain aspects of the two constitutions. However, it re-affirmed its commitment to work towards the unification of the engineering profession.

On 12th June, 1989, the FSPE board resolved that FSPE be wound up at the time and date that the Engineers' Association of South Africa (EASA) ceased to exist, and that the Federation would immediately cease any activity in its own name, other than necessary administrative action by the Office Bearers.

5.3 Contribution to the Work of the Interim Council for SAVI

Representative Dr H. Wagner

In 1987/88 the Institute informed the Interim Council that it would support the formation of a South African Engineering Association (SAVI) provided certain aspects of the proposed constitution were changed and the relationship between SAVI and the Society of Professional Engineers (SPE) were clarified. Unfortunately, none of the concerns expressed by the Institute and detailed in a circular to members of the Institute was considered by the Interim Council and incorporated in the constitution of SAVI. Accordingly, the Institute informed the Chairman of the Interim Council in a letter dated 22nd November, 1988, that it could not join the South African Engineering Association that had formally been established on 5th December 1988.

The Institute informed SAVI that it remained committed to the concept of a unified engineering profession, and that it sincerely hoped that future changes in constitution, particularly those relating to the voting rights of members, would make it possible for the Institute to join SAVI.

5.4 Interests of Professional Engineers

C.E. Fivaz, Chairman

Since the Institute is not a member of SAVI or SPE, a committee has been formed, and will meet as and when required, to deal with matters of concern to members of the Institute who are Professional Engineers.

5.5 Representation on ASRET and SAARET

5.5.1 ASRET

Representative	D. Wilson
Alternate	Dr J. Lurie

The Eighth Annual General Meeting of the Affiliation of Societies Representing Engineering Technicians (ASRET) was held on 21st September, 1988. At the meeting, Mr D. Wilson was elected to serve on the Executive Committee. Dr J. Lurie had been elected to the Executive Committee the previous year and, as the term of office is two years, the Institute has two members on the Committee. Mr Wilson was designated the official representative, with Dr Lurie his alternate.

The Executive Committee met on a monthly basis, with a General Committee meeting on 21st February, 1989. The business of the Executive Committee was primarily related to the formation of the South African Engineering Association (SAVI) and the participation of ASRET as a member of SAVI. Since the establishment of SAVI was an issue of great importance to the engineering fraternity, the General Committee meeting was convened to discuss the requirements for membership and the constitution of ASRET.

It was unanimously agreed at the General Committee meeting that ASRET should be restructured in order to fulfil the requirements of a vocational group representing engineering technicians within SAVI. The proposal is that ASRET be dissolved and be replaced by a society of individual engineering technicians.

To this end, a sub-committee was formed to prepare a draft constitution for the new organization. The draft constitution and the relationship of the new organization with other organizations were debated at length during the year, and it is envisaged that a final draft constitution will be available for discussion at the ninth Annual General Meeting of ASRET. It is also envisaged that ASRET will be dissolved at that meeting, and that the Executive Committee will be responsible for winding up its affairs.

Should ASRET be dissolved and a new organization formed, the relationship between the learned societies and the new society will take on new proportions. Provision is to be made in the new constitution for continued relations with the institutes insofar as they will be invited to become 'patron' members.

As soon as the new society of engineering technicians has been constituted, the relationship between it and the Institute will be considered by the Office Bearers.

5.5.2 SAARET

Representative	Dr J. Lurie
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The most significant developments during the year were the following.

Representing the vocational group of engineering technologists, SAARET played a significant role in contributing to the constitution and establishment of SAVI.

In order to conduct its business more effectively, SAARET was restructured during the year. Various working committees were constituted including those to deal with the following: education and training, publicity, membership, and *quo vadis*. A number of *ad hoc* com-

mittees were set up to deal with the constitution, awards, social functions, and liaison with other organizations.

The award of the SAARET annual gold medal is made to the most outstanding Masters Diploma in Technology achieved in South Africa in an engineering discipline during the year. The award this year (the second annual award) is to be made to W.J. Coertzen, a student member of the Institute for his Masters Diploma in Technology: Extractive Metallurgy entitled 'The production of chrome metal by electrolysis from trivalent chrome sulphate solutions'.

Considerable concern arose during the year regarding the structure of courses for the Masters Diploma in Technology. It is believed that the research option is singularly inappropriate in most engineering disciplines, and representations are accordingly being made to the authorities concerned.

A number of actions were taken during the year to promote the image of engineering technologists, and the drawing up of profiles of the engineering technologist in various fields was initiated. Cases of misleading or even grossly incorrect advertising in regard to technician/technologist/engineer employment were addressed, and information was supplied to the organizations concerned. In this regard, liaison was instituted with the Personnel Service Association.

5.6 Engineers Liaison Committee

Representative	Prof A.N. Brown
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The Pretoria Engineers Liaison Committee is a multi-disciplinary committee. It consists of eleven representatives drawn from the learned societies, the Akademie vir Wetenskap en Kuns, and EASA. The object is to serve the interests of engineers of all disciplines in the Pretoria region. Since the establishment of the Pretoria Branch, the activities of the Pretoria Engineers' Liaison Committee have been handled by the Branch. Professor A.N. Brown, Vice-Chairman, has continued to serve as the Institute's representative. This year the Institute was responsible for arranging the 27th Annual Hendrik van der Bijl Memorial Lecture, and it is reported as one of the activities of the Pretoria Branch.

5.7 Support of PROTEC

PROTEC has demonstrated in seven years that it has a cost-effective and reproducible system that can make a major impact on the present crisis without having to wait for fundamental change to take place. The crisis relates to the inadequate numbers of technically schooled matriculants.

PROTEC now has more than 2700 students in standards 8, 9, and 10 actively involved in 11 branches.

Last year, 513 PROTEC students wrote standard 10 examinations, with a pass rate of 87 per cent. Almost half obtained matric exemption with passes in mathematics and science, and outstanding pass rates.

Compared with DET results published by the Department of Education and Training for the whole country, the PROTEC results represent a significant contribution to the numbers of matriculants with mathematics and science.

Qualitatively, the contribution is even more significant.

The holistic approach prepares students to participate in the real world of work, to take responsibility, and to show initiative.

For employers offering bursaries and in-service training, the risk of failure is minimized by the choice of these students.

5.8 Support of the Phoenix Programme

Representatives	J.L. Nel	Prof R.P. King
Alternate	Dr R.H. Eric	

During April 1989, Mr E.P. Gush took over as Chairman of the Phoenix National Committee. The Phoenix Programme is jointly controlled by the Chamber of Mines of South Africa and the Institute, and the bulk of the funding for the annual budget is provided by the Chamber of Mines and its members. Additional financial support is received from outside sponsors (AECI, Mintek, Envirotech, Ferro Alloy Producers' Association, Iscor, Rio Tinto, and the SAIMM Education Fund), and Sasol and Haggie Rand agreed to participate during 1989. The annual financial contributions from all these organizations are greatly appreciated since it has allowed staff on the Phoenix Programme to broaden the base of their activities.

Since the inception of the Phoenix Programme, there have been 74 courses for 1494 teachers and student teachers, and 65 courses for 1476 scholars who have an interest in engineering and geology. The figure for the scholars is for those scholars who participated in courses longer than two days, and does not include the one- or half-day visits to mines and mineral-processing plants that are organized by mining companies under the umbrella of the Chamber of Mines Schools-Industry Liaison Scheme.

Continuous liaison is maintained with education departments, and the core of the Phoenix Programme activities is aimed at making teachers and scholars more aware and interested in engineering, geological, and scientific careers in the mining industry that are available to school leavers. Phoenix Programme staff continue to work with, and to maintain links and contacts with, all those organizations that promote careers in engineering and earth sciences, and, more specifically, in those areas where the industry is experiencing shortages in undergraduate enrolments.

Owing to the very poor coverage of mining and mineral processing in the physical-science core syllabus for schools, Phoenix staff have been involved in the design of materials for the physical-science syllabus that relate school science to the mining and mineral-processing industry. These resource packages for schools, termed 'Optional Science Topics', have been extremely well received by the education departments and, during the past 18 months, more than 450 science teachers and student teachers have attended workshops organized by the Chamber of Mines to learn how to use these packages. The Optional Science Topic on copper is complete, and a second topic—on manganese—is nearing completion.

Attitudinal surveys of scholars in those schools using the package are being conducted by Professor J. Bradley and Mrs M. Brand of the University of the Witwatersrand. The aim of this research is to determine the effects of pupils' attitudes towards careers in the mining industry

and towards science and technology in society. This research is continuing, and a paper on the results will be published when sufficient school pupils have been surveyed. The production of materials for schools that relate mining and mineral processing to school science and geography is a relatively new concept in South Africa, and Phoenix staff have incorporated many new ideas gleaned from material they obtained from the USA and the UK, and from their visits in the UK to organizations producing similar materials.

The Phoenix Programme is the most comprehensive and extensive schools-industry liaison scheme within the mining industry, and is a most vital and important link between the mining industry and education departments.

5.9 Support of SANCOT South African National Council on Tunnelling

Representative	J.A. Cruise
Alternate	Dr O.K.H. Steffen

During the year, changes were made to the Constitution to allow for a broadening of SANCOT's membership, and the Constitution now provides for Affiliate, Associate, and Corporate Membership, and also for the election of Honorary Life Members to give recognition to individuals for outstanding service to SANCOT.

Another significant change was the adoption of the title *Council* in place of *Committee*, which is more in keeping with the broader membership.

The working groups set up by SANCOT continued with their tasks, with the Group on Contractual Practices gaining the Council's approval to publish a document entitled 'Recommendations on Contractual Practice'. SANCOT continued to lead the International Tunnelling Association's working group 'Health and Safety in Work', and SANCOT's Group on Contractual Practices remains an active participating member of the ITA Working Group on Contractual Sharing of Risk.

The annual seminar was held in November 1988 entitled 'Assurance and Risk Management on Tunnelling Contracts'.

5.10 Support of EPPIC Environmental Planning Professions Interdisciplinary Committee

Representative	J.S. Freer
Alternate	C.B. Roper

Key Performance Area

To achieve its objectives, the SAIMM,

- *through representation on bodies such as the Environmental Planning Professions Interdisciplinary Committee (EPPIC), and by organizing colloquia, encourages all those who practise in the minerals and metals sector to be fully aware of the social and environmental implications of their work and to take steps to avoid the need for restrictive legislation.*

Mr John Freer was re-elected National Chairman of EPPIC for 1989, for his second successive year in that position.

EPPIC is a committee consisting of delegates from

those professional institutes whose members, like those of the Institute, are responsible for the planning of development projects. The execution and operation of these projects are bound to have an impact on the environment, which in turn reacts on man.

EPPIC aims, through its member institutes, to bring home to their members their personal responsibility for achieving EPPIC's mission, by which all developments are planned and managed to result in the sustained net benefit to man and his environment.

It is not altogether fortuitous that the Council for the Environment should this year have published a brochure entitled 'Integrated Environmental Management in South Africa'.

This is at once a concept, a set of principles, and guidelines for the planning professional as to how to take the environment into account when planning and executing his project. It avoids the conflicts inherent in the North American legislation of the National Environmental Protection Agency (NEPA), which requires an environmental impact assessment (EIA) as the basis for an application for a permit to proceed. Instead, it invites a co-operative approach between the developer and the authorities in which the EIA, along with technical and financial information, is incorporated and welded into the planning, design, construction, review, and operation of a project. This is to the benefit of all concerned.

EPPIC has hitched its wagon to integrated environmental management (IEM), and in this it has the support of the Institute.

The Institute is particularly pleased that its nomination of the Tisand Operation of Richards Bay Minerals was accepted to receive EPPIC's National Premium Award, which was presented on 8th June, 1989, at the World Environment Day Symposium, the more so because the developer had anticipated and practised the principles of IEM a decade before their formalization.

6. INTERNATIONAL LIAISON

Portfolio Holder: Dr O.K.H. Steffen
Key Performance Area

To achieve its objectives, the SAIMM,

- *participates in and represents South Africa on bodies such as World Mining Congress and the Council of Mining and Metallurgical Institutions (CMMI), appoints Corresponding Members in areas such as the United Kingdom, Australasia, Canada, and the United States of America, Japan, and South America, and interacts with sister institutes in other countries to promote international exchange of scientific and technical information.*

Contact with institutes overseas has been maintained during the past year through official and personal channels. Office Bearers hosted Dr P. Hackett and Mrs Hackett to a dinner during a business visit they paid to South Africa. Dr Hackett is President of The Institution of Mining and Metallurgy (London) and also head of the Camborne School of Mines.

6.1 Council of Mining and Metallurgical Institutions (CMMI)

Representative J.D. Austin

Alternates

Dr M.G. Atmore
Prof D. Buchanan

Mr Austin attended the meeting of the Executive Committee of the Council of Mining and Metallurgical Institutions (CMMI), which was held in London in March this year.

The Fourteenth Congress of the CMMI will be held in Edinburgh, Scotland, on 2nd to 6th July, 1990. The theme of the congress is 'Minerals, Materials, and Industry'.

6.2 World Mining Congress

Dr H. Wagner, Chairman
Prof A.N. Brown J.B. Raath
D. Gaynor R.A. Sesink Clec
Prof R.P. Plewman

Meetings of the International Organizing Committee of the World Mining Congress were held in Germany, Bulgaria, and Argentina. Unfortunately, none of the South African members of the International Organizing Committee could attend those meetings. A low-key contact with the international body was maintained.

6.3 APCOM '89

Representative: Prof D.G. Krige

During the year, the 21st International Symposium on the Application of Computers and Operations Research in the Mineral Industry (APCOM) was held in Las Vegas, USA, under the sponsorship of the Society of Mining Engineers (SME) of the AIME. As one of the seven permanent members of the APCOM International Council, the SAIMM was represented at the Symposium by Professor D.G. Krige.

The programme of 100 technical papers was truly international, with no fewer than 22 countries represented by the authors.

The proceedings were printed in a single volume in the usual SME format, and this was available on registration. The papers in each section are preceded by a useful introductory review of the relevant subject.

As usual, a meeting of the International APCOM Council was held during the Symposium week. It became evident that the demand for the hosting of APCOM meetings is now such (e.g. from China, USSR, Yugoslavia, Finland, and Chile) that the present arrangements of full international meetings at about 18-month intervals will have to be reviewed. Two possibilities were raised and will now be investigated, i.e. the holding of full international meetings every 12 months, or at intervals of 18 months with intermediate regional meetings under the official auspices of APCOM.

An innovation at the 21st APCOM was the recognition given to eight APCOM personalities who, as representatives of their countries and/or participating institutions, have over a long period made valuable contributions to APCOM. Awards in the form of plaques were presented at the APCOM Banquet on Tuesday, 28th February, to the following:

T.B. Johnson, T.J. O'Neil, R.V. Ramani, and
A. Weiss of the USA

J. Elbrond of Canada
 K.F. Lane of the UK
 D.G. Krige of South Africa, and
 F.L. Wilke of West Germany.

In retrospect, the meeting was very successful in the now well-established APCOM tradition. The 22nd meeting is scheduled for 17th to 20th September, 1990, in West Berlin.

Corresponding Members of Council

United Kingdom	Dr M.G. Atmore, Prof C.T. Shaw
Australasia	G.A. Mackay, R.H. Swan
Canada	Prof B.W. Mackenzie
USA	Dr J-M.M. Rendu
	Prof M.D.G. Salamon
Japan	Dr G. Rossi
Chile	Dr E.J. Magri
Europe	—

7. CO-ORDINATION, MANAGEMENT, AND ADMINISTRATION

Portfolio Holder: C.E. Fivaz

7.1 Co-ordination and Management

Interaction with bodies active in the mining and metallurgical industries has continued. The bodies concerned agree that duplication of effort is counter-productive and cannot be afforded. Means of avoiding any unnecessary duplication are being addressed.

7.2 Management and Administration

The automation of the office equipment was taken a step further towards the end of the year, when a fourth personal computer was acquired. The computers enable the secretaries to use word-processing facilities and many of the other facilities associated with computerization. Downloading of the membership data from the AS&TS computer is currently being undertaken, and the accounts will be the next to follow. This rationalization should lead to improved productivity within the organization.

7.3 Forward Planning

The four-year planning system is now well established, as is evident, for example, from the advanced stage of planning that has already been reached for the International Conference on Technical Challenge in Deep Level Mining, which is to be held in conjunction with Electra Mining in September 1990.

7.4 Finance

Dr H. Wagner, Chairman	
B.C. Alberts	H.G. Mosenthal
R.D. Beck	Dr O.K.H. Steffen
C.E. Fivaz	

The Institute had a very successful financial year. The profit for the year was R152 903. Of this, an amount of R80 000 was transferred to the various funds to maintain their value in real terms. As in previous years, the value of the stocks of books and medals, on the insistence of the auditors, are shown in the accounts at a nominal

figure of R1.

The favourable financial performance of the Institute can be attributed to the following reasons.

- (i) The income from schools and colloquia was according to expectations.
- (ii) The collaboration with Specialised Exhibitions in organizing technical events in connection with the Electra Mining Exhibition was very successful.
- (iii) Income from advertising in the *Journal* and from job advertisements continued to be very successful.
- (iv) The costs of producing the *Journal* were contained.
- (v) The increase in secretarial fees and overhead charges was well within the general rate of inflation.

The market value of the Institute's investments improved significantly during the year. The value of shares and debentures increased from R644 260 in 1987/88 to R1 288 100 in 1988/89, reflecting the improvements in the Johannesburg Stock Exchange and sound investment policies by the Institute's investment advisers.

An amount of R26 890 was given to the Institute by the organizers of the International Safety in Coal Mining Conference to establish a Safety in Coal Mining Award. For this purpose, the Institute established a Safety in Coal Mining Fund and increased its value by R3000.

As a result of the satisfactory financial performance of the Institute, it was possible to keep the increase in membership subscriptions below the cost of inflation.

Thanks are due to Martin & Company, who continued to act as the Institute's financial advisers, the Secretaries for their efforts in raising advertising income and in containing costs, and the Accountant and Auditors for excellent services rendered during the year.

ADDENDUM New Members

Fellow

M.J. Adan, K. Borowski, J.R. Brierley, Dr M.A. Ford, H.W. Gussman, C.J.C. Janse van Vuuren, J.E. Jones, D.L.J. Lawrence, L. Mares, A. Mauchan, J.L. Pretorius, H.W. Read, A. du P. Roos, M. Rutherford, H.A. Simonsen, Dr W.M. Stear, N.J. vd M. Stofberg, P.J. Terbrugge, C.D. van Rensburg, Dr L. Wojno.

Member

S.C. Axcell, J.B. Ayres, M. Bailey-McEwan, A.P.W. Briggs, P.L. Brogan, M.A.W. Bryson, P.A. Crane, G.M. Cresswell, R.P.M. de Villiers, D.O. Del Castillo, C.P. Fourie, A.P. Guthrie, K.F. Harvey, R.D. Hulbert, G. Hutchinson, R.T. Jones, M.K. Krawczyk, G.S. Lawes, J.P. McKelvey, A. Mehmet, D. Milella, D.C. Oldroyd, G.D. Perry, A.H. Pienaar, M.T. Podges, D.J.R.M. Ras, J. Rennie, A.G. Rice, S.A. Roos, W.J. Schoeman, A.S. Scott, A.P. Squelch, R.N. Stuart, R.J. van der Schyff, J.P. le R. van Niekerk.

Associate

R.L. Abela, I. Billingsley, J.H. Bothma, A.E. Capendale, M.F.P. Carlisle, J. Heysteck, R.D. Holmes, N.J. Lourens, J. Macpherson, E.O. Mäkinen, R. Manoharan, P.D. Mittonette, P.M. Morkel, W.H. Parsons, A.D. Pix, H.J. Potgieter, I.D. Ralston, D.E. Scholtz, T.M. Seleke, W. Slabbert, A. Smit, N. Tamlyn, J.J.

Turck, M.H. Turner, M.A. Tüzün, M.A. von Below, S.M. Whittome.

Student

M.J. Ackerman, I. Ashmole, E.H. Bekker, M.J.P. Bierman, P.L. Booysen, R. Bradford, D.W. Brazier, W.A. Carvelas, J. Christowitz, D. Conradie, W.N. Cool, I.H. Crundwell, H. de Klerk, K. de Wit, A.W. Diedricks, O.P.J. Douglas, J.B. Edwards, P.W. Erasmus, M.L.A. Fitzgerald, A.H. Fleischman, M.A. Fouché, A.S. Gibbons, R. Gover, H. Hafenschner, F.B. Havenga, G.L. Hendriksz, J.J. Horn, W.C. Joughin, R.D. Kruger, C.G. Lightfoot, P.J. Lumley, B.M. Mackenzie, J.F. Mackenzie, D.J. McDougall, P.G. Merry, T.M. Mitchell, U.M. Molatudi, M.J.P. Mynhardt, J.J. Nell, A.R. Nisbett, O. Nolle, L.O. Ramirez Grados, F. Rauschning, G.S. Robinson, S.D. Roos, N.L. Smith, R.J. Thorburn, M.M. Valenta, G.P. van Coller, J.W. van der Merwe, M. van Staden, V.A.G.W.R. von Ketelhodt, J.T. Vuta, J.J. Welmans, A.T. Willer, M. Wolmarans, D. Woolley, R.R. Young, J.J.J. Zaayman, D.R. Zinhlangu.

Company Affiliate

Anglo American Corporation of S.A., BHT Water Treatment (Pty) Ltd, LTA Process Engineering Ltd, NCP Mining, Nordberg Manufacturing Company (SA) (Pty) Ltd, Penge Amosite Mine, SA College of Mining c.c.

Members Transferred to Higher Grades

Transfer to Honorary Fellow

J.D. Austin, Prof R.P. King

Transfer to Fellow

T.D. Brown, J.A. Cruise, L.M. Falcon, Dr R.M.S. Falcon, J.N. Gallie, R.P. Mohring, G.J. Robbertze, J.E. Shackley, R.B. Smith, D.H. Walker.

Transfer to Member

P.G. Albert, K.R.E. Beard, S.F. Burks, A.J. Carter, R.E. Collins, E.J. da Silva, M.J. de Kiewiet, R.D. Elvish, S.P.A. Gregory, P.G.J. Hol, K. McVey, K.R. Noble, A.G. Smith, J.C. Steenkamp, K.M. Steenkamp, C.D. Thompson, M.R.J. van der Werff.

Transfer to Associate

R.M. Bailey, M.R. Beebe, M.J. Bleeker, L.R. Botha, P.H.F. Bouwer, K. Briggs, R.G. Brink, B.S. Camby, W.J. Coertzen, G. de Kock, M. de Villiers, P.R. du Plessis, J.C. du Plooy, H.J. du Preez, G.A. Elliott, O.A.M. Ellis, J.V. Ferreira, L.J. Fourie, C. Franken, A.B. Gouws, M.J. Gouws, S.A. Griesel, H. Grobler, P.E. Grobler, P.J. Grobler, F.P. Guilherme, C.V.W. Haasbroek, J. Hager, M. Hanekom, R.B. Hendry, P.R. Henman, W.M. Herbert, J.G. Heyneke, A.C. Hofmeyer, G.H. Howard, R.P. Hugo, P. Hyde, T.D. Hyslop, J.H. Immink, G.D.J. Jacobs, J.C. Jansen, J.C. Jollands, T.R. Kahl, E.A. Karberg, M.H. Karberg, R.A. Karstel, S. Kitshoff, T.D. Knight, A.M. Kotze, D.A. Kruger, H.J. Laas, A.G.M. Law, A. Lencioni, P.J.A. Lever, G.O. Lewis, W.S. Maritz, P.G. May, S.F. McDougall, P.G. Mooney, B.A. Muller, D.C. Nelson, R.G. Niemann, J. Nieuweijer, J. Odendaal, D. Parsons, O.G. Pauw, P.N. Penny, R. Peters, G.S. Potgieter, T. Purvis, L.O.

Ramirez Grados, T.W. Rogans, M.V. Rueda, N. Schoeman, N.M. Schwab, C.B. Sheppard, M.J. Shirran, L.R. Smart, J. Smit, P.C.C.H. Snyders, D. Snyman, J.H. Steenkamp, H.W. Stewart, L.T. Steyn, J.S. Stickling, A.R.L. Thoresson, E.H.D. Tucker, S. Turner, F.A. Uys, B.H. van Aswegen, P. van Biljon, H. van Dyk, A.J. van Jaarsveld, G.I. van Niekerk, S.J. van Niekerk, M.S. van Staden, G.J.J. van Tonder, W.J.S. van Zyl, N.M. Vegter, D.R.O. Venter, P.A. Venter, G. Vergeer, T.J. Victor, D.S. Vollrath, A.S. Wagner, R.C.W. Webber, G.J. Wurts, J.M. Wyllie.

Members Who Were Reinstated

As Member

C.L.R. Strawson.

As Associate

A.R. Brimmer, N.L. Dent, D.C.P. Lindeman, S.H. MacLennan, G.J. Mostert, M. Qabaka, A.G. Smith, M.F. Whitter.

Members Who Resigned

C.J. Bornman, P.B. Cass, G.E.Y. Coleman-Sampson, J. Darbyshire, C.J. de Villiers, P.J. de Wet, H.L. Filmer, P. Gaskell, C.L.M. Gough, R.W. Grout, F.H. Guise-Brown, D.H.W. Harrison, P.J. Heyneke, B.H. Hodder, J.J.J.V. Housmans, C.G. Hutson, M. Jordaan, D.E. King, M.J. Koorts, M.J. Lever, J. McCormack, J.L.M. McGibbon, J.A. McLernan, R.D.R. Munro, I.F. Nagy, E.W.A. Noyons, D.H.S. Patterson, J.M.S. Pinel, F.H. Retief, D. Rowe, J. Scott, E.J.B. Sewell, R.T. Stephen, J.A. Theron, L.J. Thorne, H.J. van der Hoven, P.S. van der Merwe, H.K. van Heerden, H.A. Vermaak, D.T. Walton, R.R. Will, G. Zimmerman.

Company Affiliate

Klocker Moeller (Pty) Ltd, McKinnon Chain.

Subscriptions Waived for Military Service

R.E. Garz, J. Gibbon, O. Kleynjan, W.S. Maritz, C.M. Rossel.

Persons Struck Off the Register as at 30 June 1989 and Published in Terms of Clause 7.6.1 of the Constitution

Retired Member

F.H. Lancaster.

Member

H.G. Albertyn, E.A. Beaumont, R.D.G. Bigmore, D. Bosley, R.G. Feather, P.G.E. Fitch, H.H. Gielen, Dr W.A. Hustralid, J.D. Lewins, P.J. Pretorius, Z.J. Widelski.

Associate

Mrs V.A. Annis, C.D. Barlow, P.R. Botha, A.R. Brimmer, P.A.G. Collet, I.W. Davidson, J.M. de Beer, L.P. Fourie, B.D. Goodchild, R.P. Hugo, P. Hyde, O.V. Jevon, J.C. Jollands, D.A. Kruger, K.J. Lennon, P.G. May, P.D. Mittonette, J.D. Nel, F.T. Pantke, A.D. Pix, I.M. Pleaner, B.R. Pryor, M.A. Ralephata, M.D. Ras, Miss M.V. Rueda, A.C. Seiderer, D. Snyman, O. Soykan, J.C. Stapelberg, K.M. Tookey, J.G. Uys, W.J.S. van Zyl, T.J. Victor, A.L. Viljoen, L.A. Ward, M. Withers.

Student

M.W. Arthur, A.W. Botha, J.M. Botha, P. Botha, P. Botha, T.L. Botha, W.J. Cahill, D.S. Demmer, C.A. Elliot, K.C. Erasmus, P.W. Erasmus, D.C. Fokker, B.C. Gerrel, G.P. Hindmarch, A.J. Naude, J. Oosthuizen, M. Richardson, P.J. Schutte.

Applications Declared Null and Void as at 30 June 1989 and Published in Terms of Clause 7.3.1 of the Constitution

There were no applications declared null and void.

Fees

Entrance and subscription fees for the different grades of membership are listed opposite.

ENTRANCE AND SUBSCRIPTION FEES

Description	1986/87	1987/88	1988/89	Increase
Entrance Fees (R)				
- Fellow	25	25	25	-
- Member	25	25	25	-
- Associate	25	25	25	-
- Student	25	25	25	-
- Company Affiliate	25	25	25	-
Subscription Fees (R)*				
- Fellow	53	69	80	+16
- Member	47	61	70	+15
- Associate	47	61	70	+15
- Student	9	12	14	+16
- Retired	9	12	14	+16
- Company Affiliate	330	330	400	+21,2

* All subscriptions include a R9 fee to AS&TS

Ladle metallurgy

The South African Institute of Mining and Metallurgy is to hold a school entitled 'Ladle Metallurgy: Principles and Practices' in Johannesburg from 13th to 16th November, 1989.

What is ladle metallurgy?

Various steel-refining techniques have been developed in recent years to meet the ever-increasing demand for higher-quality steel. These improved processes have collectively been called 'ladle metallurgy' since the refining is often done in a ladle or similar type of vessel. The incentive for the development of these ladle-metallurgy processes has arisen in part from the need for cleaner steels of lower oxygen and sulphur content and with inclusion shape control. Inclusion flotation, improved desulphurization, dephosphorization, and sulphide shape control can, indeed, be achieved by the proper use of ladle-metallurgy practices. Furthermore, ladle metallurgy enables the steelmaker to achieve better homogenization of temperature and composition while, at the same time, more efficient alloying and control of the final chemistry are attained.

The possible implementation of ladle-metallurgy techniques for the manufacture of quality steels is currently under consideration in South Africa. Consequently, steelmakers, the supporting industries, and steel users have displayed an interest in these new developments. This is the reason for the four-day school, in which the principles of ladle metallurgy will be highlighted and the state-of-the-art assessed by a leading authority in the field. Professor R.J. Fruehan, of the Carnegie Institute of Technology and author of the book *Ladle Metallurgy Principles and Practices*, will be the course leader.

Professor Fruehan recently spent considerable time in many countries of the world, but particularly in the East, in assessing the implementation of new and innovative steelmaking and casting technologies. He has agreed to relate his experiences and perceptions regarding these important developments during the school. Half a day will be devoted to this topic.

Course content

Fundamentals of steelmaking reactions

Electric-furnace metallurgy

Ladle metallurgy

Deoxidation

Gas bubbling

Desulphurization

Ladle furnaces

Calcium reactions and inclusion modification

Vacuum metallurgy

Fundamentals

RH, RH-OB

DH, tank, etc.

Tundish metallurgy

New and innovative steelmaking and casting processes

(Special half-day seminar for which separate registration will be accepted. Registration for the full course includes the afternoon seminar.)

Selected papers by local steelmakers highlighting experience in the South African environment.

Who should attend?

This course has been offered to industry on over thirty occasions: in the USA, Canada, Europe, Australia, South America, Korea, and Brazil. It is designed to be of practical value to plant operators, technologists, and managers.

The course is heavily biased towards the application of fundamental principles in practice. The principal objective is to give production operators a fuller understanding of those factors which influence the effective execution of refining operations.

Although the subject material will be presented at an elementary level so that it can be digested by most, advanced subject matter will be addressed in such a way that researchers will benefit. However, the practical importance of academic arguments will be given preference.