

Annual Report and Accounts

FOR THE YEAR ENDED 30th JUNE, 1983

Council and Standing Committees — 1982/83

President: Prof. A. N. Brown

Vice Presidents: Prof. R. P. King and J. D. Austin

Honorary Treasurer: Prof. D. G. Krige

Immediate Past President: G. Y. Nisbet

Members of Council: B. C. Alberts, R. H. English, P. T. Fewell, C. E. Fivaz, J. S. Freer, Prof. G. G. Garrett, J. J. Geldenhuys, Dr A. K. Haines, P. N. Harris, H. E. James, Dr B. K. Loveday, Dr J. Lurie, D. G. Malan, G. Pienaar, B. E. Protheroe, Dr O. K. H. Steffen, G. C. Thompson, Dr H. Wagner, Dr P. T. Wedepohl.

Chairman, Witbank/Middelburg Branch: H. C. van Zyl.

Chairman, Orange Free State/Klerksdorp Branch: B. Lund to March 1983, and D. A. Parfitt from March 1983.

Past Presidents serving on Council: Dr M. G. Atmore, H. Britten, Prof. D. D. Howat, Dr J. P. Hugo, Dr P. R. Jochens, D. G. Maxwell, Prof. R. P. Plewman, Dr R. E. Robinson, Prof. M. D. G. Salamon, P. W. J. van Rensburg, D. A. Viljoen, P. A. von Wielligh.

Standing Committee Chairmen: Adjudication, G. Y. Nisbet; Awards, G. Y. Nisbet; Banquet, Dr A. K. Haines; Constitution, Rules and Policy, G. Y. Nisbet; Excursions, P. N. Harris; Journal, Prof. R. P. King; Membership, J. D. Austin; Phoenix National Committee, Dr M. G. Atmore; SAIMM School – Extractive Metallurgy, Dr B. K. Loveday; SAIMM School – Mining, Dr H. Wagner; Special Publications, J. D. Austin; Technical Programme – Extractive Metallurgy, C. E. Fivaz; Technical Programme – Mining, B. C. Alberts, Technical Programme – Physical Metallurgy, G. Pienaar; Training, Career Guidance and Education, P. A. von Wielligh to March 1983, Dr M. G. Atmore from March 1983; World Mining Congress – National Committee, Prof. R. P. Plewman; Working Group Physical Metallurgy, Prof. G. G. Garrett.

Representatives on Other Bodies

AS & TS Controlling Executive

Representatives: Prof. A. N. Brown and G. Y. Nisbet

Alternates: Prof. R. P. King and J. D. Austin

Federation of Societies of Professional Engineers (FSPE)

Executive Committee Member: J. D. Austin (Alternate Prof. A. N. Brown).

Board: Representative Mining J. D. Austin (Alternate Prof. A. N. Brown).

Representative Metallurgy D. A. Viljoen (Alternate H. E. James).

Publicity Committee Representative: Dr A. K. Haines.

Education Committee Representative: Prof. R. P. King.

South African Council for Professional Engineers (SACPE)

Representative Mining: G. C. Thompson (Alternate P. N. Harris).

Representative Metallurgy: D. A. Viljoen (Alternate Dr P. R. Jochens).

Liaison Committee Members: Dr H. Wagner (Mining), Prof. C. W. P. Finn (Metallurgy).

PAC Metallurgy Members: D. A. Viljoen (Alternate Dr P. R. Jochens), Prof. G. T. van Rooyen (Alternate J. C. Mostert), Dr J. P. Hugo (Alternate Dr B. K. Loveday), V. C. Ward (Alternate N. Sutherland).

PAC Mining Members: G. C. Thompson (Alternate Prof. D. G. Krige), member to be nominated (Alternate V. C. Barnes), Prof. M. D. G. Salamon (alternate to be nominated), Prof. R. P. Plewman (Prof. A. N. Brown), P. N. Harris (alternate to be nominated).

South African Committee on Tunnelling (SANCOT)

Representative: Dr H. Wagner (alternate P. T. Fewell)

Environmental Planning Professions Interdisciplinary Committee (EPPIC)

Representative: P. N. Harris (alternate Dr B. K. Loveday)

Affiliation of Societies Representing Engineering Technicians (ASRET)

Representative: Dr J. Lurie

Finance

After R15 000 had been transferred to the Education Fund and R5000 to the McArthur-Forrest Fund in line with the Institute's established policy, there was a net credit balance of R20 314 for the year.

The costs of operating the Institute excluding the SAIMM schools and colloquia increased from R162 000 to R177 000, i.e. by some 9 per cent. The major items contributing to this increase were secretarial and allied costs. On the credit side, there was a significant surplus of R51 000 on SAIMM schools and colloquia; also, the costs of producing new monographs and other special publications (R55 000) was largely offset by sales and credits (R48 000).

Membership fees were increased slightly for 1983/84 in order to help maintain the financial position.

At the end of the year, the Education, Brigadier Stokes, and McArthur-Forrest funds stood at R171 000 (R152 000 in 1982), R41 000 (R38 000 in 1982), and R30 000 (R24 000 in 1982) respectively, and the income received from investments more than covered the expenses incurred for the year from these funds. In total, the overall level of these funds was raised by some 13 per cent to almost maintain the position in real terms.

Syfrets Trust continued to provide a valuable advisory

service on the Institute's investments.

Brigadier Stokes Memorial Award

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

The Award was established in 1980, and the first three recipients were

- 1980 Mr H. F. Oppenheimer
- 1981 Dr H. Bleloch
- 1982 Dr F. G. Hill

The Award for 1983 is made posthumously to Dr A. E. Whillier for a profound and far-reaching contribution to the South African mining industry.

Gold and Silver Medals

Papers published in the *Journal* from March 1982 to February 1983 by members of the Institute are eligible for these medals. The following authors are to receive these awards:

Gold medals: E. J. Magri for the paper 'Calculations of grade and tonnage for two co-products from a projected South African gold mine'.

Dr N. B. Strydom posthumously for the paper 'Evaluation of heat-acclimatization procedures at wet-bulb temperatures below 31,7°C', written jointly with P. C. Schutte and A. J. Kielblock, who are not members of the Institute and who will be awarded Certificates of Merit.

Silver medal: No award.

Student Prizes

Three prizes were awarded to students at the Universities of the Witwatersrand and Pretoria for the best dissertations prepared in part fulfilment of the B.Sc. (Eng.) degree:

- J. B. Raath (Pretoria) Skietwerk - die gebruik van elektrisiteit
- J. P. Vermeulen (Pretoria) Optimale subvlakstorting uitleg
- G. R. Weineck (Witwatersrand) Industrial relations trends in the mining industry and the Wiehann Commission.

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 | P. D. Hicks |
| Book Prize | Mining | J. P. A. Lever |
| | Metallurgy | C. A. Boothroyd |

University of Pretoria

- | | | |
|----------------|------------|---------------|
| Prestige Prize | Mining | F. T. Olivier |
| | Metallurgy | E. R. Lourens |
| Book Prize | Mining | H. J. Laas |
| | Metallurgy | A. N. Helberg |

The first awards of the Prestige Prize for students at Technikons were made during 1983. As these are made for outstanding achievement over a four-year period, the award takes the form of a silver medal and a cash award.

It was considered to be most unusual that as many as two diplomates should attain exceptional performance. In the circumstances, awards were made to the following two metallurgy students at the Witwatersrand Technikon:

- D. Jeffrey and N. Schoeman

Membership Committee

CHAIRMAN: J. D. Austin.

During the year, 1 Honorary Life Fellow, 18 Fellows, 10 Members, 7 Associate Members, 16 Associates, 15 Graduates, and 138 Students were elected; 3 companies operating in South Africa in the mining field applied for Company Affiliate membership and were elected.

The following transfers were effected during the year:

From Member to Fellow	6
From Associate Member to Fellow	3
From Associate to Fellow	1
From Associate to Member	1
From Graduate to Member	6
From Student to Member	1
From Student to Associate	5
From Student to Graduate	5

Other changes include the following: 14 Fellows and 1 Member were elected to retired membership status; 1 Fellow, 4 Members, and 1 Student were reinstated; and 6 Fellows, 7 Members, 1 Associate Member, 9 Associates, and 3 Graduates resigned, as did 2 Company Affiliates.

A comparative statement of membership at 30th June, 1983, and at the end of the previous year is shown in the following table:

	June 1982	June 1983
Honorary Life Fellows	22	23
Honorary Fellows	9	9
Life Fellows	82	78
Fellows	660	670
Members	624	626
Associate Members	49	52
Associates	307	314
Graduates	114	122
Students	313	423
Company Affiliates	95	96
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	2 275	2 413

During the year, the Membership Committee recommended to Council that the membership fees should be increased, and the fee structure is now as detailed below:

<i>Grade</i>	<i>Entrance fee</i>	<i>Annual subscription</i>
Fellow	R10,00	R43,00
Member	R10,00	R38,00
Associate Member	R10,00	R38,00
Associate	R10,00	R38,00
Graduate	R2,50	R25,00
Student	Nil	R7,00
Company Affiliate	Nil	R275,00
Retired	Nil	R7,00

Journal Committee

CHAIRMAN: Prof. R. P. King

The following papers, notes, and feature articles were published in Volume 82, numbers 7 to 12, and Volume 83, numbers 1 to 6, of the *Journal of The South African Institute of Mining and Metallurgy*:

July 1982

The design, commissioning, and performance of the NIMCLX section of the Chemwys uranium plant, by A. M. McIntosh, E. B. Viljoen, W. M. Craig, and J. L. Taylor

Heavy-medium and gravity separation at Iscor's tin-ore and iron-ore mines, by H. C. Voges

The emission of mercury from gold-reduction works in South Africa, by H. H. E. Schröder, A. van der Linde, and N. B. Strydom

Spotlight on the 12th CMMI Congress, by Charles Macphail

August 1982

A review of the deposits and beneficiation of lower-grade chromite, by Ralph H. Nafziger

Reichert cones for Witwatersrand gold ores, by R. Guest

Contribution to paper by R. Guest, by G. L. C. Young

Spotlight on new office-bearers of the Chamber of Mines

Proceedings of the Annual General Meeting, 18th August 1982

Presidential Address by Prof. A. N. Brown: The future supply of engineers for the mining industry

Contribution to the mechanism of core discing, by T. R. Stacey

October 1982

Support in shallow mines using horizontally reinforced systems by J. A. Hahn, G. E. Blight, and L. Dixon

A contactor for liquid-liquid extraction of copper, nickel, and cobalt, by B. R. Green and R. D. Hancock

Spotlight on the SAIMM coat-of-arms, by R. P. Plewman

Some fundamental aspects of the use of disc cutters in hard-rock excavation, by D. F. Howarth and F. F. Roxborough

The prediction of air temperatures in intake haulages in mines, by K. R. Vost

Project management on a reimbursable, plus-fee contract, by F. van Heerden

December 1982

The planning and establishment of the Grootegeluk

Coal Mine, by B. C. Alberts

The establishment of infrastructure for the Grootegeluk Coal Mine, by E. F. W. Buermann

The planning and establishment of the coal-beneficiation plant at Grootegeluk, by J. Gilliland

Project planning and process control for the Grootegeluk Coal Project, by A. P. L. Kotzé

Capital and cost control systems used in the establishment of the Grootegeluk Coal Mine, by G. Ferreira and A. G. R. Coreejas

Discussion: Reichert cones for Witwatersrand gold ores, by G. F. Balderson

Spotlight on solid-liquid separation, by John Freer

January 1983

Research on the prediction of rockbursts at Western Deep Levels, by A. v. Z. Brink and D. M. O'Connor

A critical evaluation of methods applicable to the determination of cyanides, by C. Pohlandt, E. A. Jones, and A. F. Lee

A note on predicting the performance of large flotation machines, by B. K. Loveday

Spotlight on seismicity in mines, by W. D. Ortlepp

February 1983

The analysis of ventilation and cooling requirements for mines, by J. van der Walt, E. M. de Kock, and L. K. Smith

Evaluation of heat-acclimatization procedures at wet-bulb temperatures below 31,7°C, by P. C. Schutte, A. J. Kielblock and N. B. Strydom

A quick test procedure for the determination of milling parameters, by D. Menne

Spotlight on the selection of equipment for underground mining, by P. M. Scott

March 1983

The prereduction and smelting of chromite concentrate of low chromium-to-iron ratio, by A. R. Barnes, C. W. P. Finn, and S. H. Algie

The sampling of liquid hot metal and steel at a steel plant, by L. W. Helle

The selection of underground equipment for coal mines, by A. J. Raubenheimer

Spotlight on an excursion to Southern Cross Steel, by P. N. Harris

April 1983

The behaviour of mine tailings during hydraulic deposition, by G. E. Blight and G. M. Bentel

The clarification of uranium pregnant solution at Buffelsfontein by a circulator-clarifier, by P. C. van Aswegen

Spotlight on the 1983 SAIMM Banquet, by J. J. Geldenhuys

May 1983

Hopper clarification of uranium pregnant solution at Western Deep Levels, by L. E. Kun and P. G. Kahles

The slip velocity between particulate solids and an interstitial fluid, by D. Menne

A computerized labour-control system for Harmony Gold Mine, by G. T. G. Emère

Spotlight on Councillors' visit to Franz Hoenig Haus, by John Freer

Spotlight on the 1983 Mining School, by C. L. Workman Davies

June 1983

The effect of cost and price fluctuations on the optimum choice of mine cut-off grades, by J. A. L. Napier

Recent developments in the separation of nickel and cobalt from sulphate solutions by solvent extraction, by J. S. Preston

A preliminary survey of the corrosivity of water in gold mines, by A. Higginson and R. T. White

Discussion: Support in shallow mines using horizontally reinforced systems, by M. D. G. Salamon, H. Wagner and B. Madden, and J. A. Hahn, G. E. Blight, and L. Dixon

The *Journal* continued to attract a range of papers from a wide spectrum of the Membership. The technical standard of the papers published was high, and the *Journal* continues to enjoy a reputation as the premier medium for the dissemination of technical information in the mining and metallurgical fields in South Africa. The *Journal* is distributed widely abroad and is a valuable shop window for local technical innovation and development.

The Publication Advisory Board that was set up last year has continued to function effectively, and is speeding up the reviewing and editing of papers. The very short publication delay time imposed on the authors compares very favourably with all the international journals, and authors can look forward to rapid publication of material submitted to the *Journal*. The efforts of our panel of reviewers, as well as the very valuable work of our editor, Dr Glen, is gratefully acknowledged.

Special Publications Committee

CHAIRMAN: J. D. Austin

Three new titles were published during the year.

In the Monograph Series there were

No. 4: Increased underground extraction of coal, edited by Dr C. J. Fauconnier and R. W. O. Kersten

No. 5: Rock mechanics in mining practice, edited by Prof. S. Budavari

In the Symposium Series, the two volumes of the *Proceedings of the Twelfth CMMI Congress*, edited by Dr H. W. Glen, were published jointly by the Institute and the Geological Society of South Africa, and were financed by the Chamber of Mines of South Africa.

The Institute would like to record its thanks to all the people who were involved in the production of these books, including the production editors for the two former titles, Dr E. H. Wainwright and Dr G. Baker.

Notes produced by the School Committees are available. The following new sets were added during the year:

Underground transport and communication in collieries

Electrometallurgy

South African geology and mineralogy for metallurgists.

Arrangements are being made to reprint school notes that are out of stock.

The proceedings of the Symposium on Rockbursts

and Seismicity in Mines will be published early in the new year.

Sales levels of the new titles are encouraging, but more work needs to be done to market the books overseas. In the Monograph Series, the second edition of No. 2, 'An introduction to geostatistical methods of mineral evaluation' by Dr J. M. M. Rendu, has recovered its production costs.

A reciprocal marketing agreement has been concluded with the Society of Mining Engineers of AIME. This agreement contains benefits for members of both institutes, and information will be circulated to all members once the details have been finalized.

A reciprocal advertising agreement has been concluded with the Institution of Mining and Metallurgy, London.

Mining Journal Books Limited is an overseas sales agent for the Monograph Series and future new titles in the Symposium Series.

Similar agreements are being discussed with the Canadian Institute of Mining and Metallurgy and the Australasian Institute of Mining and Metallurgy.

Training, Career Guidance, and Education Committee

Phoenix National Committee

CHAIRMAN: Mr P. A. von Wielligh to March 1983

Dr M. G. Atmore from March 1983

As many of the activities of these two Committees overlap and interlink, a single report is presented.

Before detailing the activities, the Committee wishes to record its most sincere appreciation for the leadership and work carried out by Mr Von Wielligh during the period of his Chairmanship of the first Committee.

A number of new approaches and change in emphasis in the Committee's activities occurred during the year. For example, support was given to the Metallurgical Department at the University of the Witwatersrand to implement a scheme being developed there for attracting more school children and their parents to the mining industry by means of a postal campaign, followed by more detailed contact for those responding. Later, a similar scheme has been given support for implementation by the Mining Department. If these schemes show promise, it has been decided to extend them to the corresponding departments at the University of Pretoria.

Our Institute was impressed by the progress made by the Institute of Civil Engineers in their Engineering Careers and Education Project, and donated R2000 towards it.

With the rapidly increasing cost of books and other publications, as well as attendance fees at congresses, it was decided to make available some subsidy towards Institute publications and academic attendance at technical gatherings.

Phoenix continues to perform a useful function, and its activities were expanded during the year, not least in the increase in the number of sponsors. This is very gratifying, but in no way detracts from our appreciation of the staunch continuing support of our founder members, almost all of whom have, in spite of difficult conditions, renewed their support.

The normal liaison and activities between teacher, teacher trainee, and school pupil continued during the year and, with the appointment of an additional staff member to the Department of Manpower and Education of the Chamber of Mines, larger numbers of people are now being catered for.

A further important new activity was the broadening of Phoenix to include our first formal contact with the Coloured, Asian, and Black communities, from which increasing professional participation in industry will inevitably arise.

Strenuous efforts are continuing to improve communication with other organizations operating in similar fields in other parts of the world, and, in the case of MIMCU in the United Kingdom particularly, it is expected that real benefit will result to both.

Finally, it is with considerable pleasure that we record that Atlas Copco (Pty) Ltd has decided to institute an exciting and generous post-graduate travelling bursary scheme from 1984, and the Institute, through this Committee, has, at their request, agreed to administer the scheme.

Technical Programme Committee - Extractive Metallurgy

CHAIRMAN: C. E. Fivaz.

A successful colloquium on 'Solid-Liquid Separation' was held in the State Pavilion on 23rd September, 1982, during the Electra Mining Exhibition. Various aspects of the topic were covered by the authors of the different papers, which led to some interesting discussion. A total of 170 delegates attended.

A second colloquium was held in the Civic Centre in Welkom on 4th May, 1983. This was a joint colloquium with the Orange Free State/Klerksdorp Branch, and mining and metallurgical papers were presented to a combined audience of mining and metallurgical engineers.

Technical Programme Committee - Mining

CHAIRMAN: B. C. Alberts

Six papers were presented at the half-day colloquium entitled 'Selection of Equipment for Underground Mining'. It was held at the Milner Park Show Grounds on 22nd September, 1982, to coincide with the Electra Mining Exhibition. This successful event was attended by some 233 delegates, who were then also able to visit the Exhibition.

Some 320 mining and metallurgical delegates attended the Orange Free State Colloquium held in Welkom on 4th and 5th May, 1983. The theme of the Colloquium was 'Recent Mining and Metallurgical Developments in the Free State/Klerksdorp Areas'. Fourteen papers were presented, and technical visits were made to mines in the Welkom area, where attention was focused on topics covered by the papers. The banquet was indeed a memorable occasion, and the organizers, working under the direction of Mr D. A. Parfitt, are to be congratulated on arranging such a successful colloquium.

Technical Programme Committee - Physical Metallurgy

CHAIRMAN: G. Pienaar

After a Council resolution during 1982 that physical metallurgy should receive special attention in the Institute's activities, this new committee was formed during September 1982. The members of the first committee were selected in such a way that the principal manufacturing industries employing physical metallurgists are well represented. Also, persons well acquainted with the activities of the Institute and the Institution of Metallurgists (S.A. region) were chosen to serve on the committee.

The main function of the Committee is to organize colloquia. Themes for colloquia will be chosen in such a way that they are technical, topical, practical, and of relevance to the practising South African physical metallurgist.

The first colloquium will be held on 26th October, 1983, at the Vaal Triangle Technikon, and the topic will be 'High-strength Low-alloy Steels'. The Committee expects to organize two colloquia during 1984, the theme of the first being 'Materials for and Manufacturing of Mining Equipment'.

SAIMM School Committee - Mining

CHAIRMAN: Dr H. Wagner

The Committee organized three successful schools on 'Underground Transport and Communication Systems in Collieries'. These schools were attended by 230 delegates. For the first time, one of the three schools was held at Pretoria University, which proved to be a great success. An exhibition of transport and communication equipment was held in connection with these schools at the Materials Handling Research Unit of the University of the Witwatersrand at Frankenswald, where 32 companies exhibited their products. Special mention must be made of the support the Committee received from senior personnel in industry regarding the organization of the technical programme and the preparation of some 1000 pages of lecture material.

Arrangements for the 1984 school on 'Rock Mechanics for Mining Management' have been finalized. This school will be the first of a number of repeated schools on popular topics.

Preparations for a school on mine planning, which is to be held in 1985, have started.

SAIMM School Committee - Extractive Metallurgy

CHAIRMAN: Dr B. K. Loveday.

Two schools were held during the year. The first, on electrometallurgy, was held at Mintek in February 1983. The programme progressed from fundamental aspects to practical considerations in the design of electrowinning and electrorefining plants. A design problem was given to the delegates, who also visited the Matthey Rustenburg Refinery.

The second school was entitled 'South African Geology and Mineralogy for Metallurgists'. It was aimed at metallurgists who had received no formal training in geology. The school was held at the University of the Witwatersrand, and lectures were supplemented by laboratory sessions. The characteristics and genesis of the major South African mineral deposits were covered.

The delegates to both schools were very enthusiastic about the week of tuition that they had received.

SAIMM Working Group on Physical Metallurgy **CHAIRMAN:** Prof. G. G. Garrett.

This Working Group was established as a collaborative venture with the Institution of Metallurgists (S.A. region) to encourage the development of physical metallurgy in South Africa through the consideration and planning of requirements, future activities, and organizational structures for this discipline.

On the technical side, plans were made for the organization of evening meetings, colloquia and conferences, courses and vacation schools, and a journal component. A membership sub-group has been investigating the details and implications of possible future physical ties between the SAIMM and the IOM (S.A. region).

Banquet Committee

CHAIRMAN: Dr A. K. Haines.

It was decided to hold an Institute banquet for the first time in many years. This event was held at The Wanderers' Club on 19th March, 1983, when some 400 members, wives, and Institute guests shared a most enjoyable, well-organized evening, which included music and entertainment. Mr L. W. P. van den Bosch, President of AS & TS, delivered a most amusing and entertaining after-dinner address.

As a social function, the banquet was extremely successful since it afforded a unique opportunity for a large number of members and their wives to meet socially. The response was unexpectedly large and, should a similar function be held in future, a larger venue will have to be sought.

Excursions Committee

CHAIRMAN: P. N. Harris.

The Committee had an active and successful year, and the activities were well supported by members of the Institute. The following excursions were held:

- (1) a technical visit to Middelburg Steel and Alloys in November 1982,
- (2) a visit by members of Council and their families to the Franz Hoenig Haus at the Modderfontein Dynamite Factory, hosted by AECI, in February 1983, and
- (3) a visit to historical Pilgrims Rest and the Ngodwane Expansion Project at SAPPI Paper Mills in the eastern Transvaal during July 1983. (Buster Fowler conducted the tour in his own inimitable manner.)

All the excursions proved to be interesting and enjoyable, and the respective hosts are thanked for their hospitality.

Witbank/Middelburg Branch

At the Annual General Meeting held on 16th July, 1982, the following office bearers were elected:

H. C. van Zyl	Chairman
W. C. Mather	Vice Chairman
B. Rohrmann	Past President
A. C. Botha	Honorary Secretary
R. B. Smith	Committee Member

K. P. Schleicher Committee Member
D. Walker Committee Member.

Committee meetings were held on three occasions during the year.

The 1983 Annual General Meeting was held on Wednesday, 10th August, when Professor A. N. Brown, President of the Institute, delivered an address to the Branch.

The following functions were organized by the local branch.

A general meeting at which Mr D. Mackay-Coghill gave a most interesting talk on 'Who Intergold are and their role in gold' was held in November 1982. Mr Kerr Cruikshanks gave a general talk on 'The South African Gold Coin Industry'.

An excursion to the Chamber of Mines Research Organization in Johannesburg gave the 20 delegates who attended a good insight into the research-and-development activities of the Chamber.

An excursion has been planned to Mondi Paper Mill for September 1983.

All activities during the year were either sponsored or financed from Branch funds. The balance of the savings account at 25th June, 1983, was R114,64.

Special efforts continued throughout the year to promote the attendance of members at meetings of the Branch. Plans are in hand to encourage members from the Evander/Secunda area to join the Branch's activities or to develop a local branch in their area.

A decision was taken to stage a two-day colloquium similar to that held at Welkom this year. This will be in September 1985, and will demand much of the incoming Committee's attention.

Orange Free State/Klerksdorp Branch

CHAIRMAN: B. Lund to March 1983

D. A. Parfitt from March 1983.

Two General Meetings were held during the year at which guest speakers were invited to address the members.

The first was held in the President Brand canteen on 16th February, 1983, when Mr J. Liebenberg, Industrial Relations Advisor of the Chamber of Mines of South Africa, spoke on 'Industrial Relations in the Mining Industry - the Present and the Future'. The second meeting was hosted by Welkom Mines on 29th June, 1983, and on that occasion Professor M. D. G. Salamon, Research Advisor of the Chamber of Mines of South Africa, spoke on 'Research Work Being Conducted by the Chamber'.

The Branch colloquium entitled 'Recent Mining and Metallurgical Developments in the O.F.S. and Klerksdorp Areas', was held on 4th May, 1983, in the Welkom Civic Centre. Technical visits to mines in the area were made on 5th May related to topics covered by the papers. The colloquium was opened by Mr E. Schmidt, Consulting Engineer of Anglo American Corporation.

Associated Scientific and Technical Societies of South Africa (AS & TS)

The following Office Bearers were elected for the year

1983/84:

President	L. W. P. van den Bosch
Vice President	Dr H. I. Schwartz
Immediate Past President	Prof. W. J. van Biljon
Honorary Secretary	Dr P. J. D. Lloyd.

During the year a start was made on the computerization of the records of the AS & TS and its constituent societies. Computer terminals in Kelvin House are linked to the Chamber of Mines' computer. Steady progress has been made, priority being given to the larger societies, but the data capture is proving to be a slow process.

A hundred finalists drawn from across the country participated in the National Youth Science Olympiad, which was held during July.

The present facilities at Kelvin House came under consideration. Additional space was acquired in the building to ease the problem of accommodation, and attention was directed towards the upgrading of various facilities. The idea of developing a site at Crown Mines at some time in the future has not made much progress. The creation of a Science Centre at the same site received continued attention.

Two awards were made by the AS & TS for 1982 to the C S I R's National Electrical Research Institute for outstanding work in the field of lightning research, and

Prof. D. C. Midgley for his outstanding contribution to the science and application of hydrology in engineering education and practice.

The Federation of Societies of Professional Engineers (FSPE)

SAIMM Representative: J. D. Austin.

The Federation continues to carry out important functions on behalf of all member Institutes. These include the following:

Investigation into the subvention of salaries of university engineering teaching staff, which has not progressed much further.

Contact with the South African Defence Force to try to ensure that graduates and professional engineers are usefully employed after their basic training.

Parliamentary liaison, which has been expanded through an arrangement by which the Federation receives reports on sections of the Government Gazette that could have any effect on the different engineering disciplines.

Responsibility for looking after the interests of Black engineering students at the Mofolo Residence in Soweto.

Publicity for the engineering profession, including a regular column in *Kelvin News* and two programmes on SATV covering engineering, which were organized through the Publicity Committee.

Handling of queries about further education and employment opportunities in the engineering profession, especially from young people in the Defence Force and school leavers.

Provision of financial assistance and advice to

SAFUES (South African Federation of University Engineering Students).

Provision of assistance and advice to neighbouring territories on engineering matters.

A newly formed Education Committee organized a successful seminar for Afrikaans Careers Guidance teachers in the Transvaal. Representatives from FSPE attended several careers evenings held at Transvaal schools.

The Engineering Careers and Education Project, also known as the Soweto Project, which was initiated by the S.A. Institute of Civil Engineers, has been thrown open to the engineering profession. FSPE is becoming more involved with this important scheme, and the SAIMM has given financial support.

Amendments to the Constitution took up a large amount of time during the year. After discussions with the bodies representing technicians and technologists, it was agreed that the concept of FSPE representing the engineering profession could not be applied. However, close liaison will be maintained on matters of general engineering interest between FSPE, ASRET, and SAARET.

The FSPE award for 1983 was made to Dr Kobus Loubser, former head of the South African Transport Services, for his outstanding contribution to the engineering profession.

The South African Council of Professional Engineers (SACPE)

SAIMM Representatives: D. A. Vuyoen and G. C. Thompson.

Consolidation of the Act is planned for 1984. This will include redrafting to provide more power for the Council, thereby reducing the workload and responsibilities of the Minister in administering the Act, and will also include the recently proposed amendments.

A tariff of fees to cover a large portion of professional services in engineering was promulgated in *Government Gazette* No. 8245 of 11th June, 1982. A permanent fees committee has been established to ensure an equitable tariff of fees on a continuous basis.

Applications were received from four organizations for the establishment of four Boards of Control.

The Council recommended to the Minister that the S.A. Institute of Industrial Engineers should be given recognition in terms of the Professional Engineers Act.

Replies to questionnaires that were sent to employer organizations indicate that, in general, the 150 training programmes, some of which have been in existence for ten years, require no amendments or updating. The initial flexibility built into the programmes, in line with the Council's stated policy, had effectively made allowance for changed circumstances.

Through continued contact, the Federation of Societies of Professional Engineers, with SACPE support, is enjoying the full co-operation of the Defence Force concerning better placement of graduate engineers during their two years' compulsory National Service.

The Council decided on a 1986 deadline for the closure of the 18(4)(b) registration avenue, after which the only

avenue open to prospective applicants who do not hold recognized degrees, or who follow the alternative route to Part III of the Council's examinations, will be the 'grandfather clause' (Section 18(4)(a) of the Act).

Representatives of the Council visited the Universities of the Witwatersrand and Stellenbosch to establish whether the degrees offered comply with the terms of Section 18(2)(d) of the Act. All universities are visited on a routine basis.

A system of medal awards to the most outstanding final-year student at each South African university offering engineering degrees was initiated by the Council.

Concern that the funding of engineering faculties is not in keeping with their financial demands led the Council to make representations to the University Advisory Board concerning the subsidy formula for universities with particular reference to engineering education.

At a meeting with the Minister of Education and Training, the President and senior members of the Council stressed the need for educating more Black engineers, and provided guidelines for the achievement of this goal.

Members of the Council have reacted to the request by the President to comment on the present and future roles of SACPE/FSPE and their different functions, and whether they have achieved the desired status. A sub-committee representing SACPE and FSPE was appointed to examine the various proposals and to provide the Council with guidelines for future innovations that will lead towards the achievement of the desired status, and of roles in keeping with the needs of the engineering profession.

Interim Committee for the Registration of Engineering Technicians/Affiliation of Societies Representing Engineering Technicians (ICRET/ASRET)

SAIMM Representative: Dr J. Lurie.

Both the Committee and the Executive of the Affiliation met during the year.

Draft regulations concerning the Board of Control for registration were finalized and submitted to the Minister for signature. An information brochure on registration and guidelines for the registration of sub-committees were also prepared.

Some difficulty was experienced in finding sufficient nominees with a suitable background to be recommen-

ded to serve on the proposed Board of Control, Education Advisory Committee, and Registration Sub-Committees.

Some 600 diplomates in mining and metallurgy appear to be registrable as technicians, but fewer than 100 of these are Associate Members of SAIMM.

South African Association of Engineers and Technologists (SAARET)

SAIMM Representative: Dr J. Lurie

Draft regulations for the proposed Board of Control were finalized and submitted to the Minister. After the Annual General Meeting on 1st June, 1983, and a postal ballot of members, the name was changed to the South African Association of Registrable Engineering Technologists (SAARET) — in Afrikaans, die Suid-Afrikaanse Assosiasie van Registreerbare Ingenieurswese Tegnoloë (SAARIT).

South African National Committee on Tunnelling (SANCOT)

SAIMM Representative: Dr H. Wagner.

The South African National Committee on Tunnelling organized a one-day seminar on new developments in shaft sinking and tunnelling, which was attended by 150 delegates.

The Committee continued its work on tunnelling legislation. The new regulations, which refer to mining and civil work separately, should be promulgated at the next sitting of Parliament.

SANCOT, as leaders of the International Working Group on Safety in Tunnelling, completed a document on safety practices in tunnelling that was accepted by the International Tunnelling Association for use throughout the world. As in previous years, the National Committee played an important role in the International Tunnelling Association.

Environmental Planning Professions Inter-Disciplinary Committee (EPPIC)

SAIMM Representative: P. N. Harris.

The draft guidelines for undergraduate courses in environmental management that were proposed by EPPIC received widespread support from all the universities where environmental impact control is of consequence. A manual for the guidance of engineers in environmental-planning procedures was printed.

THE SOUTH AFRICAN INSTITUTE OF MINING AND METALLURGY

Balance sheet at 30 June 1983

	1983	1982
ACCUMULATED FUNDS		
Balance at 30 June 1982	144 992	153 517
Excess of income over expenditure for the year ended 30 June 1983	40 314	11 475
	<u>185 306</u>	<u>164 992</u>
Transfer to Education Fund	15 000	15 000
Transfer to MacArthur-Forrest Memorial Fund	5 000	5 000
	<u>20 000</u>	<u>20 000</u>
	165 306	144 992
CURRENT LIABILITIES		
Creditors	47 531	33 101
Subscriptions received in advance	2 454	1 829
Registration fees for forthcoming vacation school	9 919	—
	<u>59 904</u>	<u>34 930</u>
AMOUNT DUE TO EDUCATION FUND	21 876	37 904
AMOUNT DUE TO MACARTHUR-FORREST MEMORIAL FUND	3 789	4 311
	<u>R250 875</u>	<u>R222 137</u>
CURRENT ASSETS		
Cash—		
In hand	115	—
Petty cash	65	—
Current account	16 428	6 349
At call	143 485	73 836
	<u>160 093</u>	<u>80 185</u>
Debtors—		
Debtors for sales of journals and publications, less provision	22 059	2 276
Advertisers in journal	7 021	18 018
Witbank/Middelburg branch	168	168
Prepaid expenses	4 164	2 265
Sundry	1 387	265
	<u>34 799</u>	<u>22 992</u>
Stock—		
Ties at cost	1 486	933
Journals at nominal value	1	1
Publications at nominal value	1	1
	<u>1 488</u>	<u>935</u>
Deposits	575	475
Subscriptions in arrear, less provision	673	176
Amount due from Brigadier Stokes Memorial Fund	54	950
	<u>197 682</u>	<u>105 713</u>
INVESTMENTS		
Quoted shares and debentures (market value R70 570; 1982 – R70 400)	47 249	79 281
Unquoted shares	—	1
Participation bond	—	25 000
Loans and unquoted debentures	—	5 000
	<u>47 249</u>	<u>109 282</u>
MEDALS AND PLAQUES		
At cost	5 941	7 139
FURNITURE		
At cost less depreciation	1	1
DIES		
At nominal value	1	1
BANNER		
At nominal value	1	1
	<u>R250 875</u>	<u>R222 137</u>

Balance sheet at 30 June 1983 (continued)

	1983	1982
EDUCATION FUND		
Fund account—		
Balance at 30 June 1982	152 420	126 312
Transfer from accumulated funds of the institute	15 000	15 000
Income—		
Interest and dividends received	20 106	12 913
Profit on sale of investment	—	4 245
	<u>187 526</u>	<u>158 470</u>
Expenses	<u>16 955</u>	<u>2 050</u>
Donations to Phoenix Fund	<u>—</u>	<u>4 000</u>
	16 955	6 050
	<u>R170 571</u>	<u>R152 420</u>
Investments—		
Building Society savings account	4 157	5 359
Building Society deposits	15 391	25 000
Participation bond	35 000	10 000
Quoted shares and debentures (market value R56 248; 1982 – R42 746)	54 144	54 144
Unquoted shares	3	13
Unquoted debentures and loan stock	40 000	20 000
	<u>148 695</u>	<u>114 516</u>
Amount due from general fund	21 876	37 904
	<u>R170 571</u>	<u>R152 420</u>
MACARTHUR-FORREST MEMORIAL FUND		
Fund account—		
Balance at 30 June 1982	24 498	19 650
Transfer from accumulated funds of the institute	5 000	5 000
Interest received	2 341	1 598
	<u>31 839</u>	<u>26 248</u>
Awards	1 850	1 750
	<u>R29 989</u>	<u>R24 498</u>
Investments—		
Building Society deposits	10 203	—
Building Society savings account	4 297	6 674
Quoted debenture (market value R8 600; 1982 – R8 100)	10 000	10 000
Unquoted debentures and loan	—	1 811
Unquoted shares	—	2
Participation bonds	1 700	1 700
	<u>26 200</u>	<u>20 187</u>
Amount due from general fund	3 789	4 311
	<u>R29 989</u>	<u>R24 498</u>
BRIGADIER STOKES MEMORIAL FUND		
Fund account—		
Balance at 30 June 1982	37 792	34 887
Interest received	5 980	5 179
	<u>43 772</u>	<u>40 066</u>
Awards	2 274	2 274
	<u>R41 498</u>	<u>R37 792</u>
Investments—		
Building Society deposit	7 142	—
Building Society savings account	4 410	8 742
Participation bond	30 000	30 000
	<u>41 552</u>	<u>38 742</u>
Amount due to general fund	54	950
	<u>R41 498</u>	<u>R37 792</u>

ASSOCIATED SCIENTIFIC AND TECHNICAL SOCIETIES OF SOUTH AFRICA
Per SECRETARIES

Income and Expenditure account for the year ended 30 June 1983

	1983	1982
INCOME		
Subscriptions	57 847	48 467
Company affiliates subscriptions	23 375	23 375
Entrance fees	689	852
Interest and dividends received	21 563	25 070
Surplus on sale of investments	2 468	—
Surplus on sale of publications	—	3 771
Symposia and colloquia	14 521	5 594
Vacation School	70 819	45 517
Bad debts recovered—		
— Miscellaneous	—	479
— Specialist division	—	2 279
Transfer from provision for doubtful subscriptions	—	150
Witbank/Middelburg branch	—	54
	<u>R191 282</u>	<u>R155 608</u>

NOTE:

Voluntary contributions by members amounting to R1 335 were collected and paid over by the Institute to the A.S. & T.S. Trust and are not included in the income statement (1982 – R1 403).

EXPENSES

Computer levy	—	6 039
Secretarial fee and overhead charge — Associated Scientific and Technical Societies of South Africa	72 730	59 964
Audit fee	860	700
Contributions		
— Federation of Societies of Professional Engineers	3 450	3 448
— Environmental Planning Professions inter-disciplinary committee	915	674
— South African National Committee of Tunnelling	200	200
	4 565	4 322
Bad debts written off	571	1 799
Donations		
— South African Federation of University Engineering Students	343	600
General expenses	8 761	9 938
Medals	415	108
Postages	6 225	4 545
Stationery and printing	10 443	6 819
Provision for doubtful debts	650	500
Institute journal		
— Expenses	59 777	56 879
— Secretarial fee	11 223	9 712
	71 000	66 591
<i>Deduct</i>		
— Advertising	17 278	23 294
— Sales	14 651	14 675
— Subvention — Department of National Education	—	4 672
	31 929	42 641
	39 071	23 950
Special Publication Series		
— expenses	5 128	36 811
— cost of production	49 582	—
	54 710	36 811
<i>Deduct</i>		
— Sales and royalties	33 420	6 562
— Department of National Education	962	5 400
Subvention:		
Refund subvention	(2 700)	—
	31 682	11 962
Underwritten by Chamber of Mines	31 499	—
Less refundable to Chamber of Mines	14 805	—
	16 694	—
	6 334	24 849
EXCESS OF INCOME OVER EXPENDITURE transferred to accumulated funds	<u>R40 314</u>	<u>R11 475</u>

To the members,

THE SOUTH AFRICAN INSTITUTE OF MINING AND METALLURGY

We have examined the financial statements set out on pages 219 to 221. In our opinion the statements fairly present the financial position of the Institute at 30 June 1983 and its income and expenditure for the year ended on that date.

ALEX, AIKEN & CARTER
Chartered Accountants (S.A.), Auditors