

Proceedings, 99th Annual General Meeting, 1996

The 99th Annual General Meeting of The South African Institute of Mining and Metallurgy was held in the Gold Room, Transvaal Automobile Club, 60 5th Street, Lower Houghton, Johannesburg on Wednesday, 14th August, 1996.

Obituaries

The President announced the death, during the year, of the following members:

Life Fellows

H.L. Munro, H.S. Simpson, P.L. Ward

Fellows

I.M. Hossy, A.E. O'Meara

Retired Fellows

E.A. Arvidson, R.F. Bourne, F. Hawke, W. Lloyd, J.M. Meyer

Members

J. Allen, P.A. Boardman, L.M. Jacobs, G.F. Marx, G.D. Perry, R.W. Spraggs

Retired Member

M. Milner

Associate

I. Pieterse.

In memory of the deceased and in sympathy with the bereaved, all rose and observed a moment of silence.

Minutes

The Minutes of the previous Annual General Meeting, which were published in the October 1995 issue of the *Journal*, were confirmed.

Welcome

The President extended a special welcome to the guests, including Mr T. Main, Chief Executive of the Chamber of Mines of South Africa, the Presidents and representatives of sister institutes and other associations, recipients of awards, senior members of industry, Honorary Life Fellows, Past Presidents, Members, and other guests, among them the following:

Dr A. Heher, Department of Trade and Industry

Prof. R.E. Crewe, President of the Associated Scientific and Technical Societies of South Africa

F.H. Gregory, President of the Geological Society of South Africa

Prof. G.N. Nurick, President of the South African Institution of Mechanical Engineers

Mr D. Sheldon, President of the Institution of Certificated Mechanical and Electrical Engineers of South Africa

Mr A. Hay, President of the South African Institution of Civil Engineers

Mr L. Mielke, Vice President of the South African Institution of Chemical Engineers

Mr D.F. Hull, President of the Institute of Mine Surveyors of South Africa

Prof. E.L.J. Breet, President of the South African Chemical Institute

Dr R.D. Marcus, President of the South African Engineering Association

Mr J.P.W. Fisher, President of the Mine Metallurgical Managers' Association of South Africa

Mr R.A. Pullen, President of the Engineering Council of South Africa

Dr A.M. Edwards, President of Mintek.

Honorary Life Fellowship

Mr Roger Dixon: Honorary Life Fellowship is awarded by the Council to corporate members of the Institute who have rendered outstanding service to the industry or to the Institute. It is my pleasure to announce that the Council has decided to award Honorary Life Fellowship to the following:

- ▶ **Mr H.G. Mosenthal** for his outstanding contribution to the Institute over a number of years, particularly for his input on the Engineering Council of South Africa (ECSA) over recent years.
- ▶ **Prof. R.J. Dippenaar** for his contribution in the field of metals technology, particularly in his capacity as Chairman of the Technical Programme Committee: Metals Technology, and to the metals technology industry. Prof. Dippenaar has emigrated to Australia to take up a position at the University of Wollongong, and his award was presented to him at a meeting of Council held on 21st June, 1996.
- ▶ **Mr J.S. Freer** for his outstanding contribution to the environmental industry. He began his contribution at a time when few people were thinking about environmental aspects, and he was paramount in the establishment of the Committee of the Environment within the Institute. Mr Freer is overseas at present and his award was presented to him at the Council Dinner on 19th July, 1996.

Brigadier Stokes Memorial Award

Mr Roger Dixon: The Brigadier Stokes Memorial Award was instituted in 1980 to commemorate the outstanding contribution

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to the South African mining industry made by Brigadier R.S.G. Stokes, an Honorary Life Fellow and Past President of this Institute. The award is made to an individual for the very highest achievement in the South African mining and metallurgical industry. It gives me great pleasure to announce that the award for 1996 is to be made to Mr Basil Hersov.

President: Born in Johannesburg on 18th August 1926, Basil Edward Hersov is the eldest son of the late A.S. (Bob) Hersov, co-founder and former Chairman of Anglovaal Limited.

Basil Hersov's secondary education was completed at Michaelhouse. He served as a pilot in the South African Air Force during World War II, after which he obtained his BA (Hons) and MA degrees (in chemistry, mineralogy, metallurgy, and geology) at Christ's College, Cambridge. During that time, he was awarded his 'blue' for swimming and water polo, and sailed in the 1948 Olympic trials.

Returning to South Africa in 1949, he joined Anglovaal as a Learner Official at the Rand Leases gold mine. Rand Leases was the foundation on which Bob Hersov and 'Slip' Menell had started Anglovaal in 1933.

Basil Hersov has said that he regards his early days at Rand Leases as an essential part of his development that stood him in good stead during his career at Anglovaal and during his spell on the Gold Producers' Committee and the Council of the Chamber of Mines of South Africa. On leaving the mine, he joined Anglovaal's head office and worked in several departments including those involved in metallurgy, geology, surveying, and valuation. Subsequently, he became the Manager responsible for Rand Leases, as well as for Eastern Transvaal Consolidated gold mine and Anglo-Transvaal Collieries. By the end of 1960—ten years after leaving Rand Leases—he was appointed an Assistant Managing Director of Anglovaal, and in 1967 he became Managing Director. This was followed by his appointment as Deputy Chairman and, in 1973, Chairman.

As an investment and management holding company, Anglovaal today provides a range of services, including raising finance, for companies in its strategic portfolio, collectively known as the Anglovaal Group. The Group (which has a market capitalization of over R10 billion) is managed via two broadly autonomous business units—industrial and minerals. The Group has interests in the fields of branded fast-moving consumer goods, cement and aggregates, construction and electronics, engineering and textiles, fishing and frozen foods, packaging and rubber, precious and base metals, exploration, mining and beneficiation, and diamonds.

Anglovaal's superb profit growth performance over the years is largely due to Mr Hersov's 'hands on' approach to running the company. His foresight in continuing the diversification of Anglovaal in the mining and minerals businesses, as well as in the many industrial sectors in which it operates, has been the single most important element in building Anglovaal up from a fairly small parochial business to a large group with international resources.

Mr Hersov's personal achievements are reflected in the myriad of positions he holds and in his appointments to other organizations: he sits on the board (in many cases as Chairman) of a score of companies within Anglovaal; he is also Chairman of First National Bank, and a director of Mutual and Federal Insurance Company.

His commitment to South Africa and its people is reflected in the many organizations or associations he represents: Avril Elizabeth Home (Patron), Johannesburg Child Welfare Society

(Past President), Worldwide Fund for Nature SA (Trustee), Free Market Foundation (Patron), Business South Africa (Trustee), S A Institute of Management (Fellow), S A Institute of Mining and Metallurgy (Fellow), Institute of Directors (President), Urban Foundation (Past Governor), South African Chamber of Mines (Council), Royal Society of Arts (Fellow), South Africa Foundation (Honorary President), The Ridge School (Past Chairman), Michaelhouse (Past Governor), and Rhodes University (Governor).

For these and other public services, Mr Hersov was awarded South Africa's highest civil award—the Decoration for Meritorious Service—and an honorary doctorate of law from Rhodes University.

He has also maintained a close connection the the South African Air Force and, apart from flying with Citizen Force Squadrons, he was appointed (in 1983) Honorary Colonel of 40 Squadron and (in 1985), Honorary Colonel of 21 Squadron.

Mr Hersov has dedicated his life to Anglovaal and its people. His stated commitment to increase stakeholder wealth goes hand-in-hand with his aim to make a constructive contribution to the development of South Africa and its people—he refers to it as 'a culture of involvement'. At Anglovaal, he has personally accepted the Group's role in this process. He is committed to building new businesses with different relationships—partnerships with emerging entrepreneurs—to capitalize on the many challenging opportunities that are emerging. This is done through the Anglovaal Small and Medium Enterprise Initiative, in which he is actively involved and which has assisted, and still continues to assist, many small to medium business entrepreneurs to acquire managerial and technical skills; in certain cases, Anglovaal participates as an investor.

In addition, Mr Hersov personally oversees the progress of the Anglovaal Group Education Trust and the Anglovaal Group Community Investment Trust. His key policy within these activities is to seek out projects that are driven by capable people who are totally committed with efforts that stress value, ethics, and quality of life—in short, people and projects that are really making a difference. Once highlighted, these trusts are funded by contributions from Anglovaal itself and its Group companies.

Shooting, skiing, flying, and racing horses are his prime off-duty pursuits, many of which he enjoys with his family: wife Antoinette, sons Robert and James, and daughters Rowena and Alexandra and their children.

Mr Hersov is unable to be present, but has recorded his acceptance speech on video, which will now be screened.

Presentation of Medals and Certificates.

Mr Roger Dixon announced the following awards, which were presented to the recipients by the President.

50-year Membership Awards

- ▶ V.C. Robinson, who was elected as a Member on 28th August, 1946
- ▶ W.I. Spence, who was elected as an Associate on 8th February, 1946.

No awards were made for papers published in the *Journal* from March 1995 to February 1996.

Presentation of Student Prizes

Mr Roger Dixon: Prizes are awarded to the following students for the best student dissertation in part fulfilment of the B.Sc. (Eng.) degree.

- *Mining:* P. Fourie, University of Pretoria, for a dissertation entitled 'Grade boundary movement at Potgietersrust Platinum Mine'.
- K.D. Smith, University of the Witwatersrand, for a dissertation entitled 'Mechanisms to improve LHD productivity at Finsch Mine'.
- *Extractive Metallurgy:* R. Beart and M.A. Clucas, University of Cape Town, for a joint dissertation entitled 'An investigation into the performance of pure frothers and frother mixtures in the flotation of Impala Platinum'.
- *Metals Technology:* A.F. Stark, University of Pretoria, for a dissertation entitled 'The heat treatment of Bohler K110'.

Other prizes awarded 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	Z. Bhyat
Metallurgy	A. Buswell

Book Prize:

Mining	N. Maslen
Metallurgy	A. Buswell

University of Pretoria

Prestige Prize:

Mining	C. Ballot
Metallurgy	A.F. Stark

Book Prize:

Mining	P. Fourie
Metallurgy	M. de Wet

Technikon Witwatersrand

Prestige Prize:

Metalliferous Mining	No award
Coal	C. Leodolff.

Annual Report and Accounts

Subscriptions received showed an increase on the previous year being Company Affiliates R128 947 (R108 859) and individual membership R346 193 (R310 962).

Income from colloquia and schools showed a marked increase over the two previous years, being R288 584 (R117 828 and R168 265 for 1995 and 1994 respectively). The three Technical Committees are to be congratulated on their efforts for the year and the short term programme bodes well for the coming year.

Income derived from sale of investments fell to almost nothing R1079 (R347 249) as income from this source was not required this year in spite of the repayment of a further R22 000 (R84 396) of the INFACON Bursary Fund. Interest and dividends received remained constant at R47 264 (R48 514). Investments

increased in cost value R823 256 (R805 151) due to purchases during the year and the market value of the investments increased R2 995 000 (R2 379 790).

Expenditure for the year increased to R940 572 (R885 166). This was in the main due to increase in secretarial fee R358 580 (R308 049). Expenses for the Journal were contained at R195 668 (R202 003).

Although expenditure has exceeded income by R136 038 for the year, income of some R100 000 from non-finalised accounts for colloquia held in the last two months of the year has been rolled over into the new year and we have provided some R83 000 in bridging finance for book publications in progress.

Our thanks go to Martin & Company, our investment advisers and our accountant Mr Stan Hickin and our auditors for financial services rendered for the year.

Office Bearers and Members of Council for 1996/1997

President: I have pleasure in announcing that, in accordance with Clauses 3.2 and 3.3 of the Constitution, the retiring Council has elected the following Office Bearers for the ensuing year:

President	Dr N.A. Barcza
President Elect	R.P. Mohring
Senior Vice President	J.R. Dixon
Junior Vice President	M.H. Rogers
Immediate Past President	D.A.J. Ross-Watt
Honorary Treasurer	J.A. Cruise.

In terms of the election of ordinary members of Council, there is a letter from the scrutineers stating 'We have to report that we inspected the nomination papers for members of Council for the 1996/97 session, and have found that the ballot papers sent out to Corporate Members of the Institute were in order. There was a return of 467 papers, representing a return of 31%. There were 5 spoilt papers. As a result of our scrutiny, we find that the following members have been elected (in alphabetical order):

J.P.W. Bennie	Dr R.G. Görtunca
Dr L.A. Cramer	R.G. Mills
A.A.B. Douglas	Dr A.J.S. Spearing
F.M.G. Egerton	Dr T.R. Stacey
Prof. R.H. Eric	D.J. van Niekerk
Dr M.A. Ford	P.J. Venter
Prof. G.A. Fourie	P.M.T. White.

'In addition, Dr R.V.R. Handfield-Jones and P.J. Knottenbelt were elected to represent non-corporate Members of Council'.

In terms of Clause 3.2.8 of the Constitution, the Chairmen of the Branches are as follows:

Johannesburg	E.G. de Villiers
Pretoria	Prof. P.G.H. Pistorius
Free State	E.N.D. Westgate
Mpumalanga	R.E. Jennings
(previously Eastern Transvaal)	
Western Cape	Prof. C.T. O'Connor
Bushveld	S.W. Hanrahan
Natal	J.S.A. Folkard
Zululand	M.J. Beart.

These Chairmen will serve on Council.

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The following Past Presidents have signified their willingness to serve on Council for the ensuing year:

P.W.J. van Rensburg	B.C. Alberts
Prof. R.P. Plewman	C.E. Fivaz
Prof. R.E. Robinson	Dr O.K.H. Steffen
G.Y. Nisbet	H.G. Mosenthal
Prof. A.N. Brown	R.D. Beck
H.E. James	Dr H. Scott-Russell.

I would like to record our thanks to the Past Presidents for their continued support. I congratulate all those elected, and thank those who have agreed to serve another term of office.

Election of Auditors and Honorary Legal Advisors for 1996/7

President: I propose that Messrs Aiken & Peat be re-appointed as auditors for the coming year, and that Messrs van Hulsteyn, Duthie & Saner be re-appointed as Honorary Legal Advisors. Agreed.

Induction of President

President: It is my pleasant duty to introduce your new President, Dr Nic Barcza.

Mr Roger Dixon: Nic Barcza was born in Florida, near Johannesburg, in 1946 and was educated at St Stithians College in Randburg.

After obtaining a B.Sc. degree in metallurgical engineering in 1969 at the University of the Witwatersrand, he continued with post-graduate studies in the field of pyrometallurgy, particularly ferro-alloys. He was granted a post-graduate bursary by Mintek in 1969, and was awarded an M.Sc. degree in 1972 with a thesis entitled 'Incipient fusion studies in the system chromite $\text{CaO-MgO-Al}_2\text{O}_3\text{-SiO}_2$ and carbon'. He subsequently received the FAPA (Ferro Alloy Producers' Association) fellowship to study further, and achieved a Ph.D. degree in 1977, his thesis being entitled 'Slag:metal equilibrium studies associated with the production of low carbon ferromanganese'. Aspects of both these projects were implemented commercially in the local ferrochromium and ferromanganese industries. He was awarded an SAIMM student's prize for his final-year B.Sc. project, and a silver medal for a paper based on his Ph.D. work that was published in the SAIMM Journal.

During the latter 1970's, he worked for Mintek but spent most of his time on projects at several ferro-alloy and steel plants, mostly in the Witbank-Middelburg area, including Ferrometals, Middelburg Steel and Alloys, and Highveld Steel and Vanadium Corporation, and at Metalloys near Meyerton. These projects involved the development of metallurgical control systems for furnaces based on mass and energy balances, for which he was awarded Mintek's Gold Medal for Technical Excellence.

He then undertook the leadership of a major programme of R&D at Mintek that culminated in the development of the d.c. plasma-arc technology for the smelting of ferrochromium, which was recognized by an AS&TS award to Mintek and Samancor in 1995. He also received a gold medal from Mintek for this project, and a silver medal from the SAIMM for a review paper on this topic.

He was promoted to Director of the Pyrometallurgy Division at Mintek in 1985 and to the position of Vice President in 1989. He has travelled widely and presented many papers, is the inventor of several patents, and has contributed to books in the field of ferro-alloys and plasma-arc technology.

Dr Barcza has served on INFACON (International Ferroalloys Congress) as Secretary General since 1986 and on the Electric Furnace Committee of the ISS (Iron and Steel Society Inc) since 1996. He has been a member of Council of the SAIMM since 1990/91.

He is married to Valerie, and they have three children, Gareth, Bryn, and Lloyd. He played cricket, rugby, and hockey for Wits during his years there. He is a keen squash player and enjoys home building.

Incoming President: It is a great honour for me to be inducted as the 100th President of The South African Institute of Mining and Metallurgy in 1996/97, and also to follow in the footsteps of my late father, who was President in 1958/59.

I accept this office with both pride and humility, recognizing the very high standard my predecessors have set. I will endeavour to live up to the traditions and objectives of this position, reassured by the knowledge of the valuable support I have from the members of Council. Wealth creation for our country depends heavily on our mining and mineral industry, and the Institute plays an important role by encouraging education and technology development, which contribute to its advancement and competitiveness. Thank you again for the trust you have placed in me.

Presidential Address

Dr Barcza then presented his Presidential Address entitled 'The role of pyrometallurgy in the development of South Africa', which is reproduced elsewhere in this edition of the *Journal*.

Vote of Thanks

Mr John Bennie: In his presidential address, to which you have just listened, our new President took us on a technological journey beginning with the historical pyrometallurgical activities of the early metallurgists who smelted copper, tin, and iron to forge and form implements and weapons, to the present-day state-of-the-art pyrometallurgical processes, which use thermal energy in different forms, depending on the relevant processes. The black art of beneficiation and smelting of ores is now well understood, and the processes can be modelled based on thermodynamic and kinetic energy fundamentals. We now have artificial intelligence systems and neural networks to control the processes, so optimizing the efficiency of the processes and maximizing their economics.

Dr Barcza pointed out that mother nature has been very kind to South Africa, endowing her with coal for energy and chemical utilization, and also iron, chromium, manganese, vanadium, precious metals, and many other minerals. For many decades we have relied on our gold production to bring in much-needed foreign revenue to fund the South African economy. Deep-level mining and other burgeoning costs have taken their toll in this industry and, although gold is still a major exchange earner, the growth of steel, ferro-alloys, and aluminium exports will rival and overtake gold earnings by the turn of the century.

Dr Barcza has been at pains to show that, though we have abundant minerals, we are turning to value-added products such as stainless steel, which is produced at Columbus and soon at Iscor Pretoria. To be able to sustain growth in the pyrometallurgical industry requires another resource, namely, suitably trained and educated manpower. Additional graduates in extraction, pyrometallurgy, and physical metallurgy will be needed, creating much-needed employment opportunities. There is a need to ensure that many more scholars are made aware of the importance of the mining and mineral-processing industries in the South African economy, and of the career opportunities that they offer. There is also a need to make a concerted effort to see that more and more scholars in previously disadvantaged communities and in our established schools take mathematics and science for matric; only then will we have the material to turn into metallurgists and chemical engineers. Without this critical resource to utilize our advanced technologies, the growth anticipated in the pyrometallurgical industry could be a pipe dream.

With changes in technology and growth in the pyrometallurgical industries comes an additional responsibility—one that, perhaps as far back as a decade or two ago, many have chosen to regard as a low priority. That responsibility is caring for our environment. Stricter legislation and its enforcement will contribute to preserving our environment for future generations but, better still, is for our industry to take cognizance of what is required and design early on in any project the necessary environmental protection measures. Here, of course, pyrometallurgical solutions can also be considered, such as Mintek's Enviropas treatment of EAF dusts.

Nic Barcza has drawn our attention to the advances made in technologies to further beneficiate and add value to our minerals; he has pointed out the critical need to educate and train metallurgists, to adopt and improve on imported technologies, and to be aware of the need to control processes to prevent environmental pollution.

Fortunately for the SAIMM, we have in our new President one who has lived closely with these areas through his research work, his publications in international scientific journals and in the *Journal* of the SAIMM, his contact with our industry here in South Africa and internationally, and his role as an administrator in Mintek and in SAIMM committees. Like his mentors David Howat and Peter Jochens, he will be able to lead the SAIMM to make significant contributions to enable the pyrometallurgical industry to grow and create wealth for the many programmes required for the upliftment and development for our peoples.

Nic holds a very responsible position at Mintek but we know that, with his drive and energy, he will be an outstanding President and he will still find time for his family and to enjoy a game of squash periodically.

I thank Nic Barcza on your behalf for his most interesting and informative address, and wish him well during his presidential year.

Closure

The meeting closed at 18:15. ♦



1. Don Ross-Watt awarding honorary life membership on Professor Rian Dippenaar
2. Don Ross-Watt awarding honorary life membership on John Freer
3. Don Ross-Watt awarding honorary life membership on Gordon Mosenthal



Basil Hersov receiving the Brigadier Stokes Memorial Award from Don Ross-Watt



Pierre Fourie receiving his Student Prize



Vic Robinson receiving his 50 year Membership Award from Don Ross-Watt



Kevin Smith receiving his Student Prize



Don Ross-Watt awarding Ian Spence his 50 year Membership Award



Gerhard Loedolff receiving his Student Prize

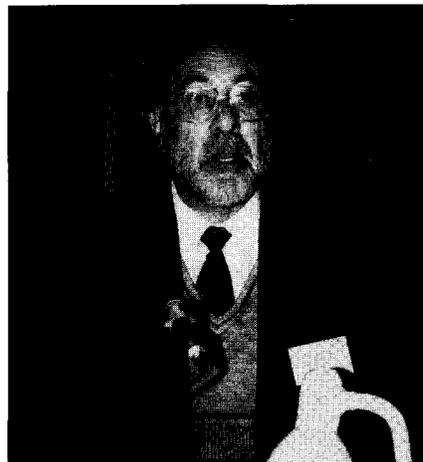
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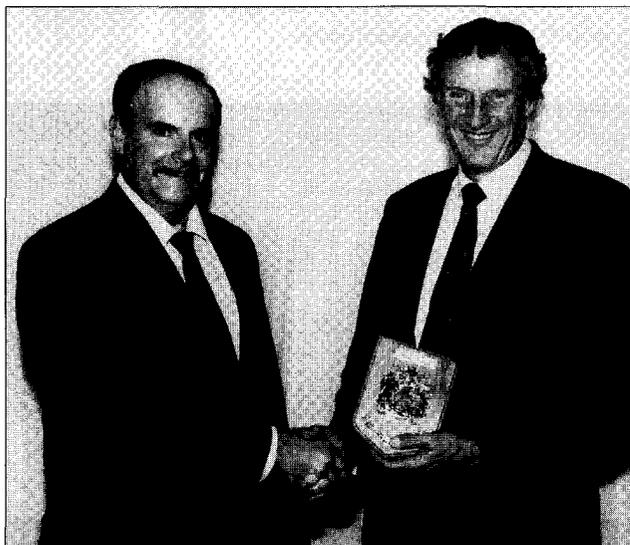
Don Ross-Watt giving a summary of his Presidential year



Dr Nic Barcza delivering his Presidential Address



John Bennie giving the Vote of Thanks



Dr Nic Barcza presenting a commemorative plaque to Don Ross-Watt



Dr Nic Barcza with his wife Val Barcza and their two sons Lloyd Barcza and Bryn Barcza



Office Bearers for 1996/97 from left to right: Roger Dixon, Rick Moring, John Cruise, Dr Nic Barcza, Mike Rogers and Don Ross-Watt



Dr Nic Barcza and Peter Smith (corresponding member of Council for Brazil)



Goodwin Hungwe and Emmanuel Dadzie



From left to right: Henry James, Dr Nic Barcza, Dr Aidan Edwards and Professor Robbie Robinson



From left to right: Martin Redford, Alf Wood, Andreas Steil, and Theo Annandale



From left to right: Nesta Cramer, Val Barcza, Lloyd Barcza, and Annemarie Snodgrass



From left to right: John Stanko, Adrienne Wedepohl, Dr Peter Wedepohl, and Denis Maxwell