

BOC GROUP PLC  
Form 6-K  
December 10, 2003

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SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 6-K

Report of Foreign Private Issuer  
Pursuant to Rule 13a -16 or 15d -16 of  
the Securities Exchange Act of 1934

Report on Form 6-K dated December 10, 2003  
Commission File Number 0-10906

The BOC Group plc

(Translation of registrant's name into English)

Chertsey Road, Windlesham,  
Surrey GU20 6HJ  
England

(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.

Form 20-F ☒ Form 40-F ☐

Indicate by check mark whether the registrant by furnishing the information contained in this form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes: ☐ No: ☒

Enclosure: The BOC Group plc Report and accounts 2003.

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#### SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

The BOC Group plc

Date: December 10, 2003

By: /s/ Anthony Eric Isaac

\_\_\_\_\_  
Name: Anthony Eric Isaac  
Title: Chief Executive

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This report contains the Report and accounts 2003 of The BOC Group plc (the Company) for the financial year ended 30 September 2003. The Report and accounts 2003 comprises the annual report and accounts of the Company in accordance with United Kingdom requirements and the information required to be set out in the Company's annual report on Form 20-F for the financial year ended 30 September 2003 (the Form 20-F) to the Securities and Exchange Commission. This information in the Report and accounts 2003 that is referenced in the Cross-reference to Form 20-F table on page 130 shall be deemed to be filed with the Securities and Exchange Commission for all purposes, including incorporation by reference into the Company's annual report on Form 20-F filed with the Securities and Exchange Commission on 10 December 2003.

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### **Cautionary statement**

The report and accounts includes forward-looking information within the meaning of section 27A of the US Securities Act of 1933 (the Securities Act ), as amended, and section 21E of the US Securities Exchange Act of 1934 (the Exchange Act ), as amended. Certain sections of this annual report including, without limitation, those concerning (i) the company's strategies, (ii) the company's research and product development, and information technology, (iii) the company's investments, (iv) commencement of operations of new plants and other facilities, (v) the company's restructuring plan, (vi) efficiencies, including cost savings, for the company resulting from business reviews and reorganisations, (vii) management's view of the general development and competition in the economies and markets in which it does, or plans to do, business, (viii) management's view of the competitiveness of its products and services, and (ix) the company's liquidity, capital resources and capital expenditure, contain certain forward-looking statements concerning the company's operation, economic performance and financial condition. Although the company believes that the expectations reflected in such forward-looking statements are reasonable, no assurance can be given that such expectations will prove to have been correct. Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic conditions, continued downturn in the semiconductor industry, success of business and operating initiatives and restructuring objectives, changes in the regulatory environment, outcome of litigation, other government actions, natural phenomena such as floods and earthquakes, customer strategies and stability, and fluctuations in interest and exchange rates.

### **Financial year**

Throughout the report and accounts, reference to 2003 in the text means the financial year ended 30 September 2003. Similarly, references to other years, eg 2004, 2002 and 2001, also mean the financial years to 30 September.

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**Table of Contents****2003 results****Analysis by business**


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<b>Turnover</b> (including share of joint ventures and associates)	£ million	%
1. Process Gas Solutions	1,242.7	29
2. Industrial and Special Products	1,751.2	40
3. BOC Edwards	684.1	16
4. Afrox hospitals	353.4	8
5. Gist	291.8	7
<b>Total</b>	<b>4,323.2</b>	<b>100</b>

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**Adjusted operating profit**


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1. Process Gas Solutions	184.0	36
2. Industrial and Special Products	242.7	48
3. BOC Edwards	18.5	4
4. Afrox hospitals	46.1	9
5. Gist	29.2	6
Corporate	(14.9)	(3)

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**Total**  
**505.6 100**

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**Analysis by region**

**Turnover** (including share of joint ventures and associates) £ million %

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1. Europe  
1,154.4 27

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2. Americas  
1,238.8 29

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3. Africa  
585.5 13

---

4. Asia/Pacific  
1,344.5 31

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Total  
**4,323.2 100**

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Adjusted operating profit

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1. Europe  
144.3 29

---

2. Americas  
91.8 18

---

3. Africa  
85.0 17

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4. Asia/Pacific  
184.5 36

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Total  
**505.6 100**

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A reconciliation of adjusted operating profit to operating profit under UK GAAP is shown in the operating review on page 32.

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Last year I stated your board's commitment to a strategy of delivering superior returns for shareholders based on sustained growth in earnings and improvements in capital efficiency. This requires increasing the scale and scope of BOC while continuously improving the efficiency and productivity of capital and other resources.

### **Consistent strategy**

Your company reviews and tests its strategy thoroughly each year. The requirements and expectations of shareholders are compared with objective analysis of what the business can and should deliver. This combination of top-down expectations with bottom-up capabilities gives a rigorous framework for debate. When Tony Isaac and his management team have completed their work, the board reviews and tests it in detail. Last year I described the forward programme for BOC's management and staff as ambitious and the board is pleased with the progress being made.

Within the corporate strategy each line of business and the specialist businesses have their own strategies. The clarity of direction this gives is of great assistance to your board in overseeing proposed acquisitions, strategic moves and the general progress of efficiency initiatives.

Last year I included two graphs looking at BOC's financial performance over the two-year period since the bid lapsed. The same graphs are reproduced here, updated with this year's data. The first shows total shareholder returns relative to all FTSE100 companies to 30 September this year. The second compares BOC's performance with its main global gases competitors. They again show your company's strong performance compared with other UK companies and the competitive challenge presented by its global peers.

### **Dividends**

In 2003 BOC paid a first interim dividend of 15.5p per share in February and a second interim dividend of 23.5p per share in August. The total of 39p was an increase of 2.6 per cent on the year before. This year, in line with its established policy, the board again proposes a first interim dividend for 2004 of 15.5p. Any increase will be reflected in the second interim dividend announced with our half year results.

### **Corporate governance**

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Your company has been at the forefront when it comes to implementing best practice in corporate governance and financial matters. Its implementation last year of the new accounting standard FRS19 and the full implementation of FRS17 well in advance of this being required, is an indication of an open and transparent culture. This year in the UK we had the recommendations from the Higgs and Smith reviews that were subsequently incorporated in a modified form into a new Combined Code. BOC contributed fully to the consultation phase of the Higgs review and I believe the end result strengthens corporate governance in an effective way. Your company is substantially complying with the revised Combined Code this year, ahead of it being required.

### Corporate social responsibility

BOC consistently takes an ethical view of its responsibilities in pursuing profitable business. Leadership comes from Tony Isaac and the senior management team. BOC is also a very practical organisation, preferring to implement, test and refine what it does before making claims in the wider world. This year BOC developed and launched its Code of Conduct. There were many existing policies, but the Code of Conduct process brought these into one programme together with new and amended policies. The code energised the whole of the company during its development and roll out.

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It is more important to be socially responsible than to seek out awards for social responsibility. It happens that others have given recognition to BOC's achievements in this area. For instance, in the UK last year BOC's environmental performance was ranked by Business in the Environment in the top 25 per cent of FTSE companies participating in its survey; the investment community voting in Investor Relations magazine ranked BOC in the top five of FTSE100 companies for the best practice of corporate responsibility; and Gist, our logistics business, won the Motor Transport magazine's environmental award. In South Africa, Afrox's community involvement programme is used by the United Nations as a global case study of how an employee-driven, sustainable social development programme should work.

## **Board of directors**

This year I was delighted to welcome John Bevan and Andrew Bonfield to your board. John is chief executive of Process Gas Solutions and, being an Australian, adds yet another nationality to what is an already very diverse board. Andrew brings his financial experience and knowledge of international business to our discussions. I would also like to congratulate two of my board colleagues who have been honoured this year: Sir Christopher O'Donnell received his knighthood in the Queen's birthday honours list while Dr Raj Rajagopal was awarded the Sir Eric Mensforth International Manufacturing Gold Medal by the Institution of Electrical Engineers and subsequently was elected a Fellow of the Royal Academy of Engineering.

During the year Göran Lundberg and Dick Grant stepped down from the board. We wish them both well for the future. Göran was replaced by Sir Christopher as senior independent director and by Julie Baddeley as chairman of the remuneration committee.

## **Thank you**

The board would like to thank all BOC's people around the world for their efforts in what have been testing economic conditions. We would also like to thank all BOC's customers, with whom we seek a mutually prosperous future. By recruiting, training and retaining the best employees we will continue to deliver high standards of service to our customers. This is the basis of BOC's strength and will be the means by which we will deliver the returns expected by you, our shareholders. I thank you for your continued support.

**Rob Margetts** Chairman

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## **Chief executive's review**

BOC performed well in 2003, although many of the world's leading industrial countries remained in the economic doldrums. The semiconductor industry, the key to BOC Edwards' profitability, showed only limited signs of recovery following a prolonged downturn.

### **Financial overview**

In managing our business we use financial results excluding exceptional items, referred to as *adjusted*, and at constant currencies as the best way to report results and to reflect the nature of our business. Exceptional items are exactly that, one-off events that would distort the figures if not reported separately, while constant currencies show best how we are doing in our local markets. The products and services we sell and their associated costs are largely contained in the 50 or so countries where we operate; we export relatively little. Currencies have an effect when we translate our turnover and profit into pounds sterling. We could have a bumper year, improving our business and market position around the world, yet we could report reduced turnover and profit if the pound was strong. Conversely, a weak pound could at face value disguise poor performance.

On this basis, we increased turnover this year by nine per cent, the result of actions over recent years to grow in existing markets and enter new ones. Adjusted operating profit rose by one per cent. This improved performance was not reflected in adjusted profit before tax, which declined by four per cent because of a lower net pension credit largely resulting from lower equity valuations. Comments below on business performance are also given on this basis.

Since announcing our preliminary results on 13 November 2003 The BOC Group Cash Balance Retirement Plan in the US has reached agreement in principle to settle an action against it for US\$69 million. This was shown as a contingent liability in the preliminary results when we stated that the potential liability could reach US\$116 million. The award will be paid out of the assets of the Plan but under UK accounting principles the payment has been recognised as a charge in the profit and loss account. Our statutory results include exceptional items and comparisons with the previous year reflect changes in the relative value of currencies. On this basis, we increased turnover by eight per cent and operating profit by three per cent. Profit before tax increased by five per cent.

Operating cash flow was eight per cent lower than last year. There were a number of reasons for this: BOC Edwards contributed less cash; currency changes had a negative impact; and, having merged our gases business in Japan with part of Air Liquide Japan, BOC no longer consolidates the cash flow from the combined operation, receiving a dividend instead. We also resumed cash contributions to the UK pensions scheme.

### **This year**

We entered the year having just merged our plant building business with Linde Engineering in the US to form Linde BOC Process Plants LLC. This combination guarantees us access to world-class technology and it is working well, delivering the capability and the cost savings we had predicted. We were also at various stages of finalising four more strategic ventures. Three were acquisitions: Praxair's Polish industrial gases business, Air Products' Canadian packaged gas business and Environmental Management Corporation, a privately held US water services company. The fourth was the merger I referred to above, the combination of our OSK business in Japan with part of Air Liquide Japan to create Japan Air Gases.

The Polish and Canadian acquisitions are in important markets for us and they strengthen our positions there. In both cases they give us better national coverage and add to the range of products and services we can offer our customers. Environmental Management Corporation manages water and wastewater treatment facilities for industrial and municipal customers around the US; BOC has a strong industrial customer base and it is a natural extension to manage the water cycle for such customers. The emphasis now, as it is with all our recent acquisitions, is to achieve the growth and profit forecasts that were the reasons for making the acquisitions in the first place. All three are well on the way to doing that.

The reasons for forming Japan Air Gases were different. Japanese growth has been disappointingly low in recent years and the combined business promised to be more efficient with a lower cost base. Cost savings at the rate of Japanese Yen 5 billion a year are confidently predicted by the end of next year and a revitalised business is showing signs of growth.



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In recent years we have reviewed all our investments, seeking to add to our capability where we could grow profitably and finding other solutions for assets that either fit less well strategically or have not delivered the returns we expect.

### **Our businesses are performing well**

Our three lines of business – Process Gas Solutions, Industrial and Special Products and BOC Edwards – produce 85 per cent of BOC's turnover and 88 per cent of its adjusted operating profit. The rest comes from our two specialist businesses, Afrox hospitals and Gist. The line of business structure remains unique in the industrial gases industry and is a major competitive advantage for us. We continue to work hard at delivering exemplary customer service and this has enabled us to grow our top line sales, to obtain order renewals and to gain acceptance for price increases.

Process Gas Solutions (PGS) serves our larger customers. Many of them operate on a global scale and we invest wherever they require industrial gases. PGS did well last year, growing turnover by eight per cent and adjusted operating profit by three per cent. Most of the growth came from acquisitions and new liquefied gases business. Shortly after the year ended we announced further investments in China totalling over US\$100 million.

Industrial and Special Products, centred on our cylinder business, increased its turnover by nine per cent, but good profit performance in most countries was undermined by a weak result in the US, leading to a decline in adjusted operating profit of three per cent.

BOC Edwards has performed well considering the prolonged downturn of the semiconductor industry. It has paid close attention to its cost base, matching it closely to demand. Turnover was £684.1 million with adjusted operating profit £18.5 million.

Afrox hospitals and Gist delivered particularly good results. Afrox hospitals grew turnover by 16 per cent and adjusted operating profit by 31 per cent. Gist delivered increases of ten per cent and 13 per cent respectively. African Oxygen Limited, the majority shareholder in Afrox Healthcare Limited, announced in July 2003 that it was conducting a strategic review of the hospitals business. On 17 November it announced that, subject to conditions, it had agreed to sell its entire holding in Afrox Healthcare Limited to a consortium of Black Economic Empowerment investors.

Each year I make the point that while financial performance is important, it is not our only measure of success. I make no apologies for stating that safety remains our highest priority. No manager can be content if anyone is hurt in the process of doing business, but I also believe that safe operations reduce business risk and contribute eventually to improved profits. We are concentrating on changing the behaviour of everyone in BOC to make sure that safety really does come first.

This year we developed our Code of Conduct, based on important social, environmental and good governance business principles. People throughout BOC helped prepare it and we are in the process of communicating it to everyone in BOC. It states clearly what we expect to ensure we meet our legal and ethical obligations; to make sure we always do the right thing. You will find a copy on our website, [www.boc.com](http://www.boc.com). I think you will agree it is something we can be proud of and I can assure you we are implementing it in an effective and practical way.

I thank all the employees of BOC for their efforts this year. I thank our customers for doing business with us and our suppliers for their contribution. I thank you, our shareholders, for your support through difficult economic times. We will continue to strive to deliver attractive returns on your investment.

**Tony Isaac** Chief Executive

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## Board of directors

### [Rob Margetts CBE no \(01\)](#)

**57, chairman.**

Appointed chairman in January 2002. He is chairman of Legal & General Group plc, a non-executive director of Anglo American plc, chairman of the Natural Environment Research Council and a governor of Imperial College, London. Previously he was with ICI PLC for 31 years, becoming a main board director in 1992 and vice chairman in 1998. He is a fellow of both the Royal Academy of Engineering and the Institution of Chemical Engineers.

### [Tony Isaac no4Δ \(02\)](#)

**61, chief executive.**

Appointed an executive director in October 1994 and became chief executive in May 2000. He was previously finance director of Arjo Wiggins Appleton plc, which he joined shortly before the de-merger from BAT Industries p.l.c. in 1990. Prior to that he had been finance director of GEC Plessey Telecommunications Ltd since its formation in 1988. He is a non-executive director of International Power plc and Schlumberger Ltd.

### [Fabiola Arredondo IOn \(03\)](#)

**36, non-executive director.**

Appointed in November 2001. She is the managing partner of FRA Holdings LLC, a private investment firm, and was previously the managing director of Yahoo! Europe, a director of BBC Worldwide and held senior executive positions at BMG Entertainment. She is a non-executive director of Intelsat Corporation, Bankinter SA and the World Wildlife Fund UK and is also a member of the US Council on Foreign Relations and the World Economic Forum. She has a BA in political science from Stanford University and an MBA from the Harvard Business School.

### [Julie Baddeley IOno \(04\)](#)

**52, non-executive director.**

Appointed in May 2001. She was an executive director of Woolwich plc until October 2000, responsible for e-commerce, information technology and human resources, and was previously head of change management for Maritime Region, Accenture. She is a non-executive director of the Yorkshire Building Society, the Government Pensions Group, and chairman of three venture capital trusts. She is also an Associate Fellow of Templeton College, Oxford and a Companion of the Institute of Management. She has an MA honours degree in zoology from Oxford University.

### [John Bevan4Δ \(05\)](#)

**46, chief executive, Process Gas Solutions.**

Appointed an executive director in December 2002. He joined BOC in 1978 as a graduate in the Australian gases business and has held various positions in general management in Australia, Korea, Thailand and the UK and was formerly chief executive Asia, based in Singapore. He has a degree in commerce (marketing) from the University of New South Wales.

### [Andrew Bonfield IOn \(06\)](#)

**41, non-executive director.**

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Appointed in July 2003. He is senior vice-president and chief financial officer of Bristol-Myers Squibb Company. He qualified as a chartered accountant in South Africa, working for Price Waterhouse, before joining SmithKline Beecham in 1990 and rising to become chief financial officer in 1999. He joined BG Group plc in 2001 as executive director finance before assuming his current role at Bristol-Myers Squibb Company in September 2002.

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### **René Médori o4Δ (07)**

#### **46, group finance director.**

Appointed an executive director in July 2000. He joined BOC in 1987 and has held several finance appointments in the Group. He was appointed finance director of BOC's gases business in the Americas in 1997. Before joining BOC, he worked for Accenture and Schlumberger Ltd. He is a finance graduate of the Université de Paris-Dauphine and has a doctorate degree in economics. He is a non-executive director of Scottish & Southern Energy plc.

### **Roberto G Mendoza I Ono (08)**

#### **58, non-executive director.**

Appointed in October 2002. He is a founding partner of Integrated Finance Ltd, the non-executive chairman of Egg Plc, and a board member of Prudential Plc, Reuters Plc and Vitro S.A. He joined J.P. Morgan in 1967 and served as vice chairman of the board from 1990 to 2000. He was a managing director of Goldman Sachs & Co from 2000 until he resigned to co-found Integrated Finance Ltd in 2001. He was born in Cuba, obtained a BA in history from Yale and an MBA with high distinction from the Harvard Business School.

### **Matthew Miao IOn (09)**

#### **57, non-executive director.**

Appointed in January 2002. He is chairman of MiTAC-Synnex Group, one of Taiwan's leading high-tech industrial groups. He is also a Convenor of Civil Advisory Committee of National Information and Communications Initiatives (NICI) and a member of the Board of Supervisors of the Industrial Technology Research Institute (ITRI) and the Board of Directors of the Institute for Information Industry (III), Taiwan. He obtained a BS in electronic engineering and computer science from U.C. Berkeley, an MBA degree from Santa Clara University and holds an honorary doctorate degree from the National Chiao Tung University, Taiwan.

### **Sir Christopher O Donnell IOn (10)**

#### **57, non-executive director.**

Appointed in March 2001. He is chief executive of Smith & Nephew plc. Previously he held senior positions with Davy Ashmore, Vickers Limited and C R Bard Inc. He has an honours degree in mechanical engineering from Imperial College, London and an MBA from the London Business School. He is a chartered engineer and a member of the Institution of Mechanical Engineers.

### **Dr Raj Rajagopal4Δ (11)**

#### **50, chief executive, BOC Edwards.**

Appointed an executive director in July 2000. He joined BOC in 1981 and has held several positions in BOC Edwards. He was appointed managing director, Edwards Vacuum Products in 1993 and managing director, vacuum technology division in 1996. He was appointed a non-executive director of FSI International Inc in January 2001. He has a PhD in mechanical engineering from the University of Manchester. He is a Fellow of the Royal Academy of Engineers as well as the Institution of Electrical Engineers, Mechanical Engineers and the Chartered Institute of Management. Dr Rajagopal was awarded the Sir Eric Mensforth International Manufacturing Gold Medal in March 2003.

### **John Walsh4Δ (12)**

#### **48, chief executive, Industrial and Special Products.**

Appointed an executive director in July 2001. He was previously president, Process Gas Solutions, north America. He joined BOC in 1986 as vice president, special gases and has held various senior management positions in the Group, including president, BOC

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Process Plants. He has a BA in economics and an MBA, both from Harvard Business School.

### Board committees

I	Audit committee
O	Remuneration committee
n	Nomination committee
o	Pensions committee
4	Executive management board
Δ	Investment committee

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## Executive management board

### John Bevan (01)

**46, chief executive, Process Gas Solutions since January 2003.**

Appointed to the executive management board in June 2000. See page 08 for biographical details.

### Nick Deeming (02)

**49, group legal director and company secretary since May 2001.**

Appointed to the executive management board in May 2001. He has over 16 years in-house counsel experience, including Schlumberger, SEMA and Axa PPP Healthcare, specialising in corporate and commercial law. He has a degree in law from Guildhall University, an MBA from Cranfield University and qualified as a solicitor in 1980.

### Stephen Dempsey (03)

**52, group director, corporate relations since February 1999.**

Appointed to the executive management board in October 1999. He joined BOC in 1990 as director of marketing services for the UK gases business and has held various communications roles in the Group. He has an MA in geography from Oxford University and an MBA from Cranfield University.

### Peter Dew (04)

**43, group director, information management since February 1998.**

Appointed to the executive management board in October 1999. He joined BOC in 1986. He has held information technology roles in the Group's businesses in South Africa, the UK and most recently as information management director for the Group's businesses in Asia/Pacific.

### Tony Isaac (05)

**61, chief executive since May 2000.**

Appointed to the executive management board in July 1996. See page 08 for biographical details.

### Rob Lourey (06)

**46, group human resources director since June 2000.**

Appointed to the executive management board in June 2000. He joined BOC in Australia in 1996 and most recently was human resources director for Asia/Pacific. He has a bachelor of business degree in personnel management.





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**Kent Masters (07)**

**42, president, Process Gas Solutions, north America since July 2001.**

Appointed to the executive management board in December 2002. He joined BOC in 1985 and has held positions of increasing responsibility in engineering, marketing and general management, most recently, president, BOC Process Plants. He holds an engineering degree from Georgia Institute of Technology and an MBA from New York University.

**René Médori (08)**

**46, group finance director since June 2000.**

Appointed to the executive management board in June 2000. See page 09 for biographical details.

**Dr Raj Rajagopal (09)**

**50, chief executive, BOC Edwards since June 1998.**

Appointed to the executive management board in July 1996. See page 09 for biographical details.

**Greg Sedgwick (10)**

**42, group director, business development since June 2000.**

Appointed to the executive management board in June 2000. He also has responsibility for Afrox Healthcare Ltd. He joined BOC in 1984 and has held a variety of senior management roles in the south Pacific region, most recently managing director, Industrial and Special Products. He was previously market sector director, minerals and a director of BOC India. He has a degree in marketing and a masters degree in business planning from the University of New South Wales.

**John Walsh (11)**

**48, chief executive, Industrial and Special Products since June 2001.**

Appointed to the executive management board in June 2000. See page 09 for biographical details.



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	1999 £ million	2000 £ million	2001 £ million	2002 £ million	2003 £ million
<b>Profit and loss</b>					
<b>Turnover<sup>1</sup></b>	<b>3,052.7</b>	<b>3,579.7</b>	<b>3,772.9</b>	<b>3,657.7</b>	<b>3,718.3</b>
Total operating profit before exceptional items <sup>2</sup>	479.9	496.4	530.6	500.1	<b>505.6</b>
Exceptional items	(69.4)	(4.4)	(108.3)	(74.5)	<b>(67.0)</b>
<b>Total operating profit<sup>2</sup></b>	<b>410.5</b>	<b>492.0</b>	<b>422.3</b>	<b>425.6</b>	<b>438.6</b>
Profit/(loss) on termination/disposal of businesses	32.5	12.5		(20.2)	
Profit on disposal of fixed assets			3.6		
Profit before interest	443.0	504.5	425.9	405.4	<b>438.6</b>
Interest on net debt	(80.2)	(111.5)	(123.4)	(103.1)	<b>(96.1)</b>
Interest on pension scheme liabilities		(100.7)	(107.2)	(106.1)	<b>(110.2)</b>
Expected return on pension scheme assets		149.5	166.9	139.1	<b>119.6</b>
Other net financing income		48.8	59.7	33.0	<b>9.4</b>
<b>Profit before tax</b>	<b>362.8</b>	<b>441.8</b>	<b>362.2</b>	<b>335.3</b>	<b>351.9</b>
Tax on profit on ordinary activities	(85.3)	(135.2)	(104.6)	(106.2)	<b>(96.4)</b>
Profit after tax	277.5	306.6	257.6	229.1	<b>255.5</b>
Minority interests	(27.4)	(28.0)	(33.5)	(26.2)	<b>(36.4)</b>
<b>Profit for the financial year</b>	<b>250.1</b>	<b>278.6</b>	<b>224.1</b>	<b>202.9</b>	<b>219.1</b>
<b>Earnings per 25p Ordinary share</b>					
Basic:					
on profit for the financial year	51.4p	57.2p	46.0p	41.4p	<b>44.5p</b>
before exceptional items	56.6p	53.5p	57.5p	55.9p	<b>52.9p</b>
Diluted:					
on profit for the financial year	51.2p	56.9p	45.9p	41.2p	<b>44.5p</b>
before exceptional items	56.4p	53.3p	57.3p	55.7p	<b>52.9p</b>
<b>Ordinary dividends per share<sup>3</sup></b>					
Actual	32.7p	35.0p	37.0p	38.0p	<b>39.0p</b>
Number of fully paid Ordinary shares in issue at the year end (million)	491.0	492.2	494.4	497.3	<b>497.7</b>

1. Subsidiary undertakings only.

2. Including share of operating profit of joint ventures and associates.

3. Dividends paid in the calendar year.

4. Excludes exceptional items. A fuller explanation of the term 'adjusted', and the reasons for presenting such a measure, is given in the operating review on page 31. A reconciliation of adjusted profit before tax to profit before tax is given in the profit and loss account on page 72. A reconciliation of adjusted return on capital employed to return on capital employed is given in the operating review on page 32.

Information for 2001 and 2000 was restated in 2002 to be on a comparable basis with 2002 following the adoption of FRS17 and FRS19 in 2002. Information for 1999 has not been restated.

All turnover and operating profit arose from continuing operations.

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	1999 £ million	2000 £ million	2001 £ million	2002 £ million	2003 £ million
<b>Balance sheet</b>					
Fixed assets					
intangible assets	36.5	49.2	48.1	150.7	206.1
tangible assets	3,043.9	3,294.0	3,168.6	3,027.4	2,913.4
joint ventures, associates and other investments	365.9	456.3	449.8	468.6	656.7
Working capital (excluding bank balances and short-term loans)	275.5	282.8	257.0	203.1	220.1
Deferred tax provisions	(36.4)	(295.8)	(294.3)	(291.8)	(279.2)
Other non current liabilities and provisions	(262.9)	(181.4)	(184.3)	(173.7)	(145.8)
Net borrowings and finance leases	(1,138.5)	(1,308.4)	(1,272.1)	(1,325.6)	(1,368.1)
Net assets excluding pension assets and liabilities	2,284.0	2,296.7	2,172.8	2,058.7	2,203.2
Pension assets <sup>5</sup>		402.0	107.0	54.3	50.7
Pension liabilities <sup>5</sup>		(31.1)	(56.0)	(311.0)	(341.8)
Net assets including pension assets and liabilities	2,284.0	2,667.6	2,223.8	1,802.0	1,912.1
Shareholders' capital and reserves	2,013.1	2,394.0	2,086.2	1,684.1	1,734.8
Minority shareholders' interests	270.9	273.6	137.6	117.9	177.3
Total capital and reserves	2,284.0	2,667.6	2,223.8	1,802.0	1,912.1
<b>Other selected financial information</b>					
<b>Capital employed<sup>6</sup></b>					
Total capital and reserves	2,284.0	2,667.6	2,223.8	1,802.0	1,912.1
Non current liabilities and provisions	299.3	477.2	478.6	465.5	425.0
Net borrowings and finance leases <sup>7</sup>	1,138.5	1,308.4	1,272.1	1,325.6	1,368.1
	3,721.8	4,453.2	3,974.5	3,593.1	3,705.2
Total assets	4,814.0	5,618.3	5,060.0	4,947.4	4,931.8
Long-term liabilities and provisions	1,278.7	1,399.0	1,554.5	1,897.5	1,851.5
Capital expenditure <sup>1</sup>	505.4	413.7	352.6	354.3	281.2
Depreciation and amortisation <sup>1</sup>	270.8	313.3	329.5	330.9	333.4
<b>Employees</b>					
UK	10,067	9,929	10,597	11,266	10,414
Overseas	32,057	32,780	32,574	35,014	34,093
Continuing operations	42,124	42,709	43,171	46,280	44,507
<b>Ratios</b>					
Return on capital employed <sup>8</sup>	11.2%	12.4%	10.3%	10.5%	10.8%
Adjusted return on capital employed <sup>4, 9</sup>	13.1%	12.5%	12.9%	12.3%	12.5%
Net debt/capital employed	30.6%	29.4%	32.0%	36.9%	36.9%
Net debt/equity	49.8%	49.0%	57.2%	73.6%	71.5%

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5. Pension assets represents the excess of pension assets over pension liabilities in countries where pension assets exceed pension liabilities. Pension liabilities represents the excess of pension liabilities over pension assets in countries where pension liabilities exceed pension assets.
6. As defined in note 1 b) to the financial statements.
7. Analysed for 2003 and 2002 in note 20 to the financial statements.
8. Operating profit as a percentage of the average capital employed excluding net pension liabilities. The average is calculated on a monthly basis.
9. Operating profit before exceptional items as a percentage of the average capital employed excluding net pension liabilities. The average is calculated on a monthly basis.

Information for 2001 and 2000 was restated in 2002 to be on a comparable basis with 2002 following the adoption of FRS17 and FRS19 in 2002. Information for 1999 has not been restated.

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**Table of Contents****Group profile****Introduction**

The BOC Group began its business life over 100 years ago as the Brin's Oxygen Company. The company was incorporated in England in 1886 and adopted its present name on 1 March 1982.

A technology to extract oxygen from the air in commercial quantities had just been developed and in 1886 the Brin brothers started production at a factory in Westminster, London. Two uses had already been found for oxygen. One was to intensify limelight, which was then used in theatres. The other was to assist patients' breathing during and after surgery. New technology was soon developed that allowed air to be separated into all its major components – nitrogen, oxygen and argon. By 1960, industrial gases were in widespread use and BOC's business was firmly established. Tonnage plants were supplying steelworks with oxygen and the customer base had been broadened to extend from metal cutting and welding to food and medicine. The business had also spread overseas with subsidiaries or associated companies as far away as Australia and South Africa. During the 1980s, BOC's South African subsidiary began to invest in private hospitals. This diversification was the basis of the current Afrox hospitals segment.

BOC acquired the vacuum equipment company Edwards High Vacuum International Limited in 1968 and this formed the basis of what was to become the BOC Edwards line of business today.

The BOC Distribution Services business (now called Gist) was first established in 1970, initially providing a chilled food distribution service for Marks & Spencer and relying upon distribution skills and liquid nitrogen chilling technology, acquired as a result of BOC's involvement in gases.

In 1978, BOC completed the acquisition of Airco Inc in America, a predominantly gases business that doubled the Group's size and brought BOC for the first time into the US gases market. In the period from 1970 to 1990 The BOC Group significantly increased its presence in the Asia/Pacific region through participation in several joint ventures or associated companies. BOC established strong market positions in Thailand, Indonesia, Taiwan, the Philippines, China and Korea.

An investment in 1982 gave BOC effective management control of the Japanese gases company Osaka Sanso Kogyo KK (OSK). Conversion of loan stock and subsequent purchases of shares raised BOC's holding in OSK to 97 per cent. In September 2002 BOC and Air Liquide announced a conditional agreement to merge their industrial and medical gases businesses in Japan. The merger became effective in January 2003 and BOC's subsidiary in Japan has retained a 45 per cent interest in the combined company called Japan Air Gases Limited. In the period from 1998 to 2001, BOC increased investments in its gases companies in Thailand, Indonesia and the Philippines by acquiring the interests of joint venture partners or minority shareholders.

The BOC Group has an international portfolio of companies operating as three lines of business. These are Process Gas Solutions (PGS), Industrial and Special Products (ISP) and BOC Edwards. In addition there are two separately managed specialist businesses, Afrox hospitals and Gist. Operating results are reported separately for these five segments.

The main exports of the Group in 2003 were special products from the UK and vacuum equipment and semiconductor manufacturing equipment from the UK, the US and Japan. Trade between Group undertakings is conducted at fair market prices.

Although BOC Process Plants was combined with Linde Engineering in the US with effect from September 2002, BOC retains an interest in the manufacture of industrial gas equipment through its Cryostar business based in France. Cryostar makes specialist cryogenic pumps and expansion turbines that are used by most manufacturers of industrial gas plant. Over the last two years Cryostar has also developed a strong position in the market for shipboard compressors and heat exchangers used aboard liquefied natural gas (LNG) tankers. Management believes that Cryostar is the leading manufacturer of its product range worldwide.

**Analysis of results by business**

(including share of joint ventures and associates)

	Turnover		Operating profit		Adjusted operating profit	
	£ million	%	£ million	%	£ million	%
Process Gas Solutions	1,242.7	29	177.1	40	184.0	36
Industrial and Special Products	1,751.2	40	238.2	54	242.7	48
BOC Edwards	684.1	16	7.9	2	18.5	4
Afrox hospitals	353.4	8	46.1	11	46.1	9
Gist	291.8	7	29.2	7	29.2	6
Corporate			(59.9)	(14)	(14.9)	(3)

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	4,323.2	100	438.6	100	505.6	100

Adjusted operating profit excludes exceptional items. See also pages 31 and 32 of the operating review.

The BOC Group contributes to the economies of some 50 countries throughout the world. The US is the largest single source of sales revenue for the Group's products and services, followed by the UK. Other major geographic areas for the Group are Australia, South Africa, Japan and other markets in the Asia/Pacific region. The business therefore operates from a broad geographical base with local manufacturing in most of the key overseas markets.

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**Table of Contents****Analysis of results by region**

(including share of joint ventures and associates)

	Turnover		Operating profit		Adjusted operating profit	
	£ million	%	£ million	%	£ million	%
Europe	1,154.4	27	137.0	31	144.3	29
Americas	1,238.8	29	42.7	10	91.8	18
Africa	585.5	13	85.0	19	85.0	17
Asia/Pacific	1,344.5	31	173.9	40	184.5	36
	4,323.2	100	438.6	100	505.6	100

Adjusted operating profit excludes exceptional items. See also pages 31 and 32 of the operating review.

The UK accounts for the largest part of the Group's activities in Europe but BOC has significant gases subsidiaries in Ireland and Poland, vacuum products manufacturing in France and a pharmaceutical packaging machinery operation in the Netherlands.

Gist, BOC's supply chain solutions business, operates principally in the UK but also has operations in other countries.

Subsidiaries in the US are engaged in the Group's three lines of business. The Group's other principal subsidiaries, joint ventures and associates in the Americas are located in Canada, Venezuela, Colombia, Chile and Mexico.

The largest Group subsidiary in Africa is African Oxygen Limited (Afrox), a South African public company in which the Group owns 56 per cent of the equity. The largest shareholder, other than BOC, holds less than 15 per cent of the equity. Afrox, primarily through wholly-owned subsidiaries, is engaged in the manufacture and sale of products within the PGS and ISP lines of business. Afrox also has interests in private hospitals, clinics and other health care services in southern Africa, primarily through its 69 per cent holding in Afrox Healthcare Limited.

There are other Group or Afrox subsidiary companies in Africa located in Botswana, Kenya, Malawi, Mozambique, Namibia, Nigeria, Swaziland, Zambia and Zimbabwe. These companies are engaged primarily in the manufacture and/or sale of products in the ISP line of business.

BOC has businesses in most of the Asia/Pacific markets, including Japan, Korea, Thailand, Taiwan, Indonesia, Malaysia, Singapore, China, the Philippines, India, Pakistan, Bangladesh, Australia and New Zealand. In Australia, the Group's business is conducted by BOC Limited. This company, as well as its subsidiaries, joint ventures or associates, is engaged in the manufacture and sale of products in the PGS and ISP lines of business. BOC participates in the liquefied petroleum gas market in Australia through a 50 per cent shareholding in Elgas Limited. Elsewhere in the Pacific region, the Group conducts its business through subsidiaries, joint ventures and associated companies.

**Management organisation**

BOC's management structure is based on three global lines of business and two specialist businesses. Each line of business serves a clearly defined type of customer and each pursues its own strategy for growth and performance at a local level. The organisation is designed to maximise BOC's global as well as local strengths. The lines of business have global responsibility to set strategy and prioritise investment. They include operational business units and these local units are responsible to the Group chief executive for delivering financial, safety and operational performance. The business units contribute to the development of the strategies of the lines of business and customise and implement them in local markets. The business unit heads collaborate in order to share best practice and to maximise growth and profit opportunities wherever they may appear.

Process Gas Solutions (PGS) manages all aspects of BOC's business with customers requiring bulk supplies of industrial gases from on-site plants or by pipeline as well as deliveries of liquefied gases. Typical customers are found in the oil and chemicals, food and beverage, metals, and glass sectors all round the world. Marketing, business development and the execution of investments to provide customer specific solutions for the supply of industrial gases are handled by Process Systems, which forms part of PGS. Until 2002, Process Plants, another unit forming part of PGS, was responsible for supplying air separation technology within the Group with plants of its own design or acquired from alliance partners and others. In March 2002 BOC announced plans to merge its Process Plants operations with Linde Engineering in the US to form a new company, Linde BOC Process Plants LLC. The transaction was completed just before the end of 2002. BOC owns 30 per cent of the combined company and Linde Engineering has become the principal supplier of industrial gases plant to BOC worldwide.

Industrial and Special Products (ISP) covers BOC's business with customers in the fabrication, medical and leisure sectors as well as the special products and liquefied petroleum gases businesses.



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BOC Edwards embraces all aspects of business with semiconductor industry customers worldwide including the supply of bulk gases and electronic materials, vacuum and abatement technology, chemical management systems and semiconductor-related services. BOC Edwards also serves general vacuum markets around the globe and manufactures pharmaceutical freeze-drying and packaging machinery.

The segment reporting as Afrox hospitals operates through Afrox Healthcare Limited, which is quoted on the Johannesburg Stock Exchange. It owns and manages private hospitals and clinics in southern Africa. Additional services include a direct medicines service for chronic medication, occupational health services, nursing training, pharmacy management and laboratory services. BOC's majority-owned subsidiary, African Oxygen Limited (Afox), holds 69 per cent of Afrox Healthcare Limited (AHealth). In July 2003 Afrox announced that it was in the process of considering its strategic options with regard to its shareholding in AHealth. On 17 November 2003, Afrox announced that it had agreed to sell its entire holding in AHealth to a consortium of Black Economic Empowerment investors. The sale remains subject to certain conditions including clearance from the relevant competition and other regulatory authorities.

During 2001, BOC Distribution Services was re-named Gist to reflect the changing nature of its business. Gist operates as a separate business unit outside the lines of business structure. It remains focused on developing business with major customers, including Marks & Spencer, and has developed capability in supply chain consultancy, managed solutions, and electronic commerce fulfilment services.

**Corporate development**

Over the last three years BOC has continued to invest in its core businesses at the same time as divesting assets and businesses that were no longer consistent with its strategy.

In 2001 BOC assumed full ownership of two south American hydrogen plants. BOC purchased the interests from Foster Wheeler Power Systems in joint ventures already operating in Chile and Venezuela.

As a result of a successful tender offer, BOC increased its shareholding in Osaka Sanso Kogyo KK (OSK) in Japan from approximately 55 per cent to over 93 per cent with effect from 8 May 2001. The holding was further increased during 2002 to 97 per cent. In September 2002 BOC and Air Liquide announced a conditional agreement to merge their industrial and medical gases businesses in Japan. The merger became effective in January 2003 and BOC's subsidiary in Japan has retained a 45 per cent interest in the combined company called Japan Air Gases Limited. In June 2001, BOC increased its holding in Thai Industrial Gases Public Company Limited (TIG) from approximately 60 per cent to over 90 per cent and launched a tender offer for the outstanding shares leading to 99 per cent ownership.

In October 2001 BOC Edwards agreed terms for the acquisition of the vacuum and pressure business of the Smiths Group. These businesses are located in the UK, north America and continental Europe and typically serve customers in the metallurgy, water treatment, food, power and chemical industries.

Hydromatix and Semco were also acquired during 2002 with the intention of positioning BOC Edwards in those market segments expected to deliver the fastest growth. These two companies, based in the US, are involved principally in semiconductor wet processing technology including chemical blending delivery and collection systems as well as liquid waste abatement systems.

BOC Edwards sold its glass coating business, based in the US, in April 2002 but retained its Temescal business that supplies technology for compound semiconductor manufacturing.

The acquisition of the turbomolecular pumps business from Seiko Instruments Inc in Japan was announced in February 2002 and completed in March 2002 with the principal objective of enhancing the ability of BOC Edwards to develop vacuum sub-systems to satisfy the growing trend to on-tool pumping in the semiconductor industry.

In April 2002 BOC purchased Matheson Gas Products Canada Inc, thereby adding an important special products capability to BOC's Industrial and Special Products range in Canada.

In May 2002 BOC acquired Unique Gas and Petrochemicals Public Company Limited (UGP), in Thailand. UGP is a leading supplier of liquefied petroleum gas (LPG) and packaged ammonia in the industrial and special products markets.

In March 2002 BOC announced plans to merge its Process Plants operations with Linde Engineering in the US to form a new company, Linde BOC Process Plants LLC. The transaction was completed at the end of September 2002. BOC owns 30 per cent of the combined company and Linde Engineering has become the principal supplier of industrial gases plant to BOC worldwide.

BOC's associated company in Malaysia acquired 35.6 per cent of the gases company Nissan Industrial Oxygen Inc (NIOI) in March 2002 and increased its holding to 100 per cent in September 2002 following a tender offer. Each of BOC's three lines of business has absorbed a part of NIOI.

At the end of August 2002, BOC announced an agreement to purchase Praxair's Polish gases business. The transaction was completed at the end of January 2003 following approval by the Polish competition authority. The business acquired includes a high proportion of industrial and special products sales.

In October 2002, BOC acquired Environmental Management Corporation (EMC), a privately owned water services company based in St Louis, Missouri. EMC manages water and wastewater treatment facilities for both industrial and local municipal customers around the US. EMC forms part of the PGS line of business, which intends to expand the range of solutions offered to its industrial customer base.

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At the end of January 2003, BOC acquired the partial oxidation syngas plant at Clear Lake, Texas, from Celanese. Under the agreement BOC fulfils a significant proportion of the industrial gas requirements for the Celanese chemical facility at Clear Lake.

In March 2003 BOC announced an agreement to purchase the Canadian packaged gas and related welding equipment business of Air Products. The acquisition was completed in April 2003 following approval from the Canadian regulatory authority.

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### **Industrial gases**

The BOC Group is one of the major producers of industrial gases in the world. Its products include the atmospheric gases (nitrogen, oxygen and argon) produced by air separation plants as well as hydrogen, carbon monoxide and syngas (a mixture of hydrogen and carbon monoxide) made by technologies including steam-reforming or partial oxidation of hydrocarbons. The Group also markets carbon dioxide, helium and liquefied petroleum gas. These are generally derived as by-products from chemical processes or from natural sources and are also purchased from other producers. In addition, the Group markets dissolved acetylene and a wide range of special gases, medical gases, gas mixtures and gaseous chemicals.

**Industry structure and consolidation** The industrial gases business is capital-intensive, with increasing demand, together with economies of scale, leading to the need for large production units and distribution networks. The need for fixed asset investments, the trend towards global customers and the benefits from the transfer of applications technology worldwide have resulted in the business being handled by a relatively small number of companies internationally.

One or more other major international producers compete in each of the industrial gases markets served by the Group, and in many of the markets there are smaller local producers as well. International competitors include Air Liquide, Praxair, Air Products and Chemicals, Linde, Messer, Airgas and Nippon Sanso. The world market for gases and related products is estimated to be over £20 billion a year.

On 13 July 1999 the board of The BOC Group agreed the terms of a pre-conditional cash offer at £14.60 per share to be made jointly by Air Liquide and Air Products. Making the offer was conditional upon those companies obtaining satisfactory regulatory clearances in Europe, Canada and the US by 13 March 2000. Following an extension to the pre-conditional offer period to conclude discussions with the Federal Trade Commission (FTC) in the US, the bidders allowed the offer to lapse on 10 May 2000.

**Principal industrial gas products** Nitrogen possesses two key characteristics that make it the world's most widely used and versatile industrial gas. Nitrogen is almost inert and when liquefied it is intensely cold. This makes liquid nitrogen a highly effective, versatile and non-polluting agent for freezing and chilling.

Under normal conditions nitrogen is chemically inactive. This makes it an important purging and blanketing gas in the chemical and refining industry as well as in the electronics industry.

Oxygen, in contrast to nitrogen, is useful for its reactivity. It supports combustion and it supports life. Oxygen has been used in welding and medicine for over 100 years and in steel production since the 1950s.

Iron and steel producers use oxygen to accelerate melting and to improve metal quality during the refining process. It is also used by the oil and chemicals industries and many others for a variety of oxidation processes. Mixed with fuel gases, oxygen provides a heat source for many welding, cutting and metal fabrication processes.

Argon makes up less than one per cent of the atmosphere but it is the most abundant truly inert gas. It is used to provide a shielding atmosphere in welding, metal fabrication, aluminium processing, microelectronics, glass coating, advanced ceramics and other industrial processes. It is also used in the steel industry, principally in the production of stainless steel.

Hydrogen is typically produced by steam reforming or partial oxidation of natural gas, petroleum gas, or liquid or solid hydrocarbon feedstocks. Hydrogen may also be recovered from by-products purchased by BOC from external suppliers. Hydrogen is used primarily in the oil and chemicals industries for applications aimed at upgrading crude oil through hydrocracking to form lighter fractions and to remove sulphur in the production of cleaner fuels. The chemicals industry also uses hydrogen where it is required as an active ingredient in many large-scale processes.

Helium is extracted from natural gas deposits. Only a few sources in the world contain a sufficient proportion of helium to justify its separation. The Group's supplies now come from the US, Poland and Russia and are secured by long-term contracts. In June 2003, BOC announced an agreement to obtain half the output from a new helium extraction facility to be constructed in Qatar. Deliveries from this new source are expected to begin in July 2005. Because of its high value, helium is the only major industrial gas to be extensively traded internationally. Helium is used in welding, leak detection, hospital MRI scanners and increasingly in the production of optical fibres. Helium gas mixtures are used in balloons.

Carbon dioxide supplied by BOC is obtained as a by-product from other companies' manufacturing processes, from natural sources or recovered in the generation process for hydrogen or syngas and put to constructive use. Solid carbon dioxide is, like liquid nitrogen, used for chilling and freezing in the food industry. As a gas it is used to carbonate and dispense beverages of all kinds.

Acetylene is normally supplied in cylinders and used together with oxygen in metal cutting and welding applications. BOC is a major manufacturer of dissolved acetylene.

Liquefied petroleum gas (LPG) is a fuel gas with a wide variety of domestic, industrial and transport applications. BOC is a major distributor of LPG in South Africa and Thailand, and its joint venture company Elgas Limited is a major distributor in Australia. BOC has smaller market positions in several other countries.



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**Production of industrial gases** Oxygen was first extracted from the atmosphere by a chemical process. This was superseded over 80 years ago by the cryogenic (low temperature) process involving the liquefaction and distillation of air. The cryogenic process is still by far the most widely used, but non-cryogenic techniques (pressure swing adsorption and membrane diffusion), which were first developed during the 1970s, are becoming increasingly significant for smaller or less demanding on-site applications.

Cryogenic air separation is a mature and stable technology, although incremental technical advances are still yielding improvements in capital cost, operating cost, ease of operation and reliability. The only significant raw material, apart from the air itself, is electricity, which is used in large quantities to drive compressors, pumps and other equipment. The production process in modern air separation plants is highly automated, and remote operation of BOC's plants from control centres is becoming increasingly common.

The production of hydrogen and syngas uses steam reforming or partial oxidation of hydrocarbon feedstocks such as natural gas, petroleum or coal to separate the hydrogen and carbon compounds. The choice of feedstock is related to their prices in local markets.

**Distribution of industrial gases** Industrial gases may be supplied to customers in a variety of ways; through pipelines from on-site or nearby cryogenic or non-cryogenic plants, by deliveries of liquefied gases in road or rail tankers, in portable cryogenic containers or in cylinders (also called compressed or packaged gases).

Distribution is an important competitive factor in the industrial gases business and the methods of distribution vary according to the nature of the products themselves and the customer's volume requirements. Most gases have to be stored and distributed either under great pressure, which requires them to be carried in heavy and bulky cylinders, or at extremely low temperatures in specially insulated tankers, which limits how far they can be transported before carriage costs become unacceptable. Pipeline delivery involves high capital costs and the routing is inflexible. As a result, there is little international trade in industrial gases. Production has to occur in or near the market being served and there is a trend towards production at customers' own sites.

**Business segments**

The BOC Group reports financial results for the three lines of business and for Afrox hospitals and Gist separately.

**Process Gas Solutions (PGS)**

This line of business covers BOC's business with larger-scale industrial customers worldwide, typically in the oil and chemicals, food and beverage, metals, and glass sectors. Gases and services are supplied as part of customer-specific solutions that create the most value for customers at the lowest cost to BOC. These range from supply by pipeline or from dedicated on-site plants to the largest users, to supply by road tanker in liquefied form to others.

Tonnage (pipeline) customers are usually supplied on the basis of long-term contracts, typically containing a fixed facility charge together with a variable charge for product supplied in excess of a set minimum quantity. Revenues from these contracts thus have a measure of stability with respect to changes in demand for product. Tonnage plants are often built to produce merchant gases in addition to those required by the tonnage customer and these gases can be sold to other customers. The BOC Group has substantial positions in the tonnage markets of the UK, the US, Australia, South Africa and Asia as well as in some smaller markets. The products supplied to tonnage customers have traditionally been the atmospheric gases oxygen, nitrogen and argon. More recently, hydrogen and syngas are becoming significant tonnage products as are associated utilities including steam and power.

The delivery of liquefied gases by road or rail to the customer's site is normally limited by transport costs to a radius of about 200 miles. Product for this market is supplied either from merchant plants or from tonnage plants incorporating liquefiers. Larger users are typically supplied with product in liquid form delivered in cryogenic tankers into special storage vessels installed at customer premises. Tankers and vessels are often BOC Group owned. Liquefied gases are usually supplied on the basis of contracts with terms of one to five years. Revenues are generally based upon the actual quantity of gas consumed, with an additional fixed charge for the use of storage equipment.

The growth of sales and profit in this line of business is driven by investment in new production facilities. Such investment is predominantly the result of opportunities to satisfy long-term supply contracts with one or more heavy industrial customers for each plant.

Marketing, business development and the execution of investments to provide customer-specific solutions for the supply of industrial gases are handled by Process Systems, which forms part of PGS.





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**Business development** During the early part of 2001, BOC reached full commercial operation of an integrated refinery and merchant gases facility in Brisbane, Australia, significantly ahead of schedule. The facility supplies hydrogen, using partial oxidation technology, for BP's mild hydrocracker and has an air separation complex supplying oxygen to help upgrade the capacity of the refinery's catalytic cracker unit. In addition the facility produces oxygen, nitrogen, argon, hydrogen and carbon dioxide for BOC's merchant market, replacing and increasing capacity over previous and less-efficient production facilities.

In 2001, BOC took full ownership of two hydrogen joint ventures already operating at refineries in Chile and Venezuela. This was done by purchasing the interests of the other partner, Foster Wheeler Power Systems.

BOC started the supply of up to 800 tonnes per day of oxygen to Mitsubishi Materials' copper and electrical component recycling facility at Onahama, Japan in 2001.

A number of hydrogen supply plants were completed during 2001, including those supplying Dow Corning and Roche in the UK.

A plant to supply OneSteel at Whyalla in South Australia was commissioned in November 2001 also replacing and increasing capacity over previous and less efficient merchant plants in Adelaide. Shortly afterwards in January 2002 a new plant began supplying Huntsman on Teesside in the UK with hydrogen to be used for the production of aniline.

In April 2002, BOC established a joint venture in Nanjing with Yangtze Petrochemical Corporation (YPC), which is a subsidiary of Sinopec, China's leading petrochemical company. BOC purchased existing air separation assets with effect from May 2002 and construction of new air separation capacity is underway. BOC's joint venture will be a supplier to a new BASF and YPC joint venture plant also under construction and scheduled to begin production in 2004. Additional liquefaction capacity was added to the existing air separation facility during 2003. These investments give BOC a strategic position as a key supplier in the Nanjing area, which is being developed through foreign investment as a leading centre for chemical production in China.

In the US a new plant began to supply WCI Steel in Ohio in May 2002 and a plant at Midland, North Carolina, began production in June 2002.

In October 2002, BOC acquired Environmental Management Corporation (EMC), a privately owned water services company based in St Louis, Missouri. EMC manages water and wastewater treatment facilities for both industrial and local municipal customers around the US. EMC's management services extend to steam systems, cold and chilled water systems and wastewater treatment. Customers include small to medium municipalities and industrial customers, many of which are in the food sector. EMC forms part of the PGS line of business and BOC's strategy is to expand the range of solutions offered to its industrial customer base.

At the end of January 2003, BOC acquired the partial oxidation syngas plant at Clear Lake, Texas, from Celanese. Under the agreement BOC fulfils a significant proportion of the industrial gas requirements for the Celanese chemical facility at Clear Lake. The Celanese facility is located on the Houston ship canal, and includes a world scale vinyl acetate monomer plant and the world's largest acetic acid plant. These require large quantities of oxygen and nitrogen as well as carbon monoxide.

A new hydrogen and carbon monoxide (HyCO) plant supplying the Thai Polycarbonate Company for the manufacture of plastic resins began production in 2003 and in August 2003, BOC announced that a new plant at Rayong would double its carbon dioxide capacity in Thailand before the end of calendar 2003. The plant will supply the local poultry and prawn industries as well as providing carbonation gas to the beverage industry.

In October 2003, BOC commissioned a new hydrogen plant supplying Citgo's oil refinery at Lemont, Illinois. The hydrogen will be used in the removal of sulphur to produce clean fuels.

### **Industrial and Special Products (ISP)**

Gases for cutting and welding, hospitality, laboratory applications and a variety of medical purposes are mainly distributed under pressure in cylinders. The ISP line of business covers products and services provided to this section of the market together with sales of packaged chemicals and liquefied petroleum gas (LPG). Customers are typically in the fabrication, engineering, automotive, refrigeration, hospitality or medical sectors. The customer base is therefore broad and varied. The number of separate customers served by ISP is much greater than the other two lines of business and the quality of service is often the key factor in securing existing or obtaining new customers. In order to raise service standards at the same time as reducing costs, national customer service centres have been successfully established in all the major markets.

In addition to supplying gases, BOC also supplies a range of associated equipment in many of its major markets. This includes cutting and welding products and, in some markets, associated safety equipment.

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### Group profile continued

BOC has devoted considerable attention over the last three years to understand the requirements of different types of customer in its major markets and to provide the required service at an appropriate price. Such customer segmentation programmes have been implemented in the UK, South Africa, Australia, Asia, Latin America and are in progress elsewhere.

The cutting and welding applications are a relatively mature part of the industrial gases business and growth opportunities are principally in other segments of the market such as medical applications, packaged chemicals, hospitality and services. BOC is pursuing these opportunities by the development of new products, packages and services as well as by marketing initiatives to take advantage of BOC's global capabilities by introducing existing products to new regions. Electronic commerce has also become an important tool for sustaining and growing sales by making it easier for customers to manage their business with BOC as a supplier.

BOC is a leading supplier of helium and has liquid helium distribution centres, or transfills, in many markets around the world. With 42 helium transfills worldwide, management believes that this is the largest global network of its kind. Helium has a broad range of applications, including medical imaging and welding, and is vital to the production of optical fibres, semiconductors and special alloys. It is also used for leak detection, underwater breathing mixtures and lifting.

**Business development** In April 2002, BOC acquired Matheson Gas Products Canada Inc, one of Canada's leading providers of special gases and equipment. Unique Gas and Petrochemicals Public Company Limited (UGP), a leading distributor of liquefied petroleum gas (LPG) and ammonia in Thailand, was acquired in May 2002. BOC's associated company in Malaysia acquired 35.6 per cent of the gases company Nissan Industrial Oxygen Inc (NIOI) in March 2002 and, following a tender offer, increased its holding to 100 per cent in September 2002. At the end of August 2002, BOC announced an agreement to purchase Praxair's Polish gases business. The transaction was completed in January 2003 following approval by the Polish competition authority. The business acquired includes a high proportion of industrial and special products sales.

During 2002, BOC continued its global roll-out of a light-weight medical cylinder with an integrated valve and regulator for homecare patients and emergency services. Heliox, a helium and oxygen mixture formulated to ease the respiratory effort associated with airway obstruction, was launched in the UK.

Capacity at BOC's Otis, Kansas, helium plant was expanded in 2002 to match market demands. In addition, BOC has access to helium produced by other US plants, as well as to product from Poland and Russia. In 2003 BOC and KRIO, a division of the Polish Oil and Gas Company, entered into a new helium supply agreement. BOC will purchase for export all of KRIO's helium that is not sold to its domestic customers in Poland. BOC has been KRIO's sole customer for bulk liquid helium since the original agreement was signed in 1972. In June 2003, BOC announced an agreement to obtain half the output from a new helium extraction facility to be constructed in Qatar. Deliveries from this new source are expected to begin in July 2005.

Magnetic resonance imaging (MRI) systems use liquid helium to cool superconducting magnets. BOC provides helium as well as a liquid nitrogen filling service to meet MRI operators' total requirements. In 2002, ISP signed a major helium supply scheme with Oxford Magnet Technology in the UK.

BOC continued to invest in refrigerant filling facilities during 2002 and in 2003 new filling facilities were installed in Hong Kong, Malaysia and the Philippines. Each of these was built to a standardised global design. BOC now supplies refrigerants in 19 countries compared with six countries in 1999. In June 2003, BOC announced a global alliance with Hudson Technologies to promote technology for cleaning and recycling used refrigerants.

Significant progress in developing web-based customer portals was made in 2002. Amongst others, ISP launched customer portals in the UK, Australia and New Zealand. Thousands of customers are now able to access detailed material on BOC's product service offers, manage and settle their accounts and place orders on-line.

BOC acquired the Canadian packaged gas and related welding equipment business of Air Products in April 2003.

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### **BOC Edwards**

This line of business specialises in gases, services and equipment for the semiconductor industry as well as vacuum products for a range of other industries. It is organised into four customer-facing divisions for sales and marketing and into four manufacturing divisions. The customer-facing divisions are Asia/Pacific, Japan, the US and Europe and the manufacturing divisions are Vacuum and Exhaust Management, Chemical Management, Bulk Gases and Electronic Materials. Kachina (semiconductor process tool component management service), Coating Technology and Pharmaceutical Systems were managed separately in the period 2001 to 2003. The major markets for BOC Edwards products are in Asia, north America and Europe.

Management believes that BOC Edwards has a unique position as a fully integrated supplier of gases, vacuum, chemical, slurry and exhaust management products, as well as services to the global semiconductor industry and is a leader in the design and manufacture of vacuum pumps, instrumentation and systems for both general vacuum and semiconductor applications.

The vacuum and exhaust product ranges are manufactured or assembled primarily in the UK, with additional manufacturing and assembly in the US, Japan and Korea. They include vacuum pumps, coating systems, exhaust management systems, temperature control systems and heat exchangers, instrumentation and controls, vacuum accessories and leak-detection equipment. The range also includes specially designed systems for specific applications, depending on customer requirements.

In addition to the semiconductor industry, the leading customers are in the chemicals, scientific instruments and other industries, as well as in educational and research establishments. General vacuum products are sold to such customers by a separate sales force.

Chemical Management Division specialises in the design, manufacture and installation of the systems used to deliver liquid process chemicals, including planarisation slurries to the point of use within semiconductor fabrication facilities. BOC Edwards chemical management products are manufactured mainly in the US, while electronic materials plants are located in the US and in Asia.

BOC Edwards service facilities, including plants for cleaning semiconductor process tool parts, are located near concentrations of semiconductor fabrication facilities around the world.

Technology is important to maintain a competitive edge in this business, and considerable resources are committed to enable the business to address new applications and markets. A new exhaust management laboratory was opened in Japan during 2001. Over 250 staff are employed in development project teams worldwide.

The Group's vacuum products are sold directly by Group companies to end users and also through distributors and agents. Management believes that the Group is a leading manufacturer of the types of vacuum products that it makes and provides. The business is highly competitive, with product design and quality, leading to the lowest cost of ownership, being very significant factors.

Sales opportunities for much of BOC Edwards semiconductor equipment business are dependent upon capital investment by the semiconductor industry. Management believes that semiconductor production remains on a long-term growth trend but capital investment by semiconductor manufacturers has been subject to sharp variations for a number of reasons, some of which arise from advances in technology.

The products of BOC Edwards Pharmaceutical Systems are tailored specifically to individual customer requirements in the pharmaceutical industry and are used mainly for injectable products. Freeze-drying systems are made in Tonawanda, New York, US. Filling, sterilising and packaging lines for the pharmaceutical industry are made at Dongen in the Netherlands.

**Business development** In the period 2001 to 2003, new ranges of dry pumps for the semiconductor industry were introduced as well as a comprehensive new range of exhaust management products. These new products meet the needs of new 300mm wafer and flat panel manufacturing facilities.

A new range of turbomolecular pumps and an innovative dry pump were introduced for scientific customers as well as new dry pumps for industrial customers over the same period. New single axis on-tool pumps for semiconductor manufacturing and a range of liquid ring pumps for industrial applications were introduced in 2003.

During 2003, an enhanced range of gases and vacuum products for lithography was offered to semiconductor manufacturers. Narrower line widths are requiring new technology including a supercritical carbon dioxide process for wafer cleaning.

In July 2000, BOC Edwards acquired Kachina Semiconductor Services, a US company specialising in the cleaning of process tool chamber parts. In the same year a new facility and divisional headquarters was established in Phoenix, Arizona, followed by a new facility in Portland, Oregon. Additional facilities were opened in France and China during 2002.

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### Group profile continued

Production of nitrogen trifluoride gas (NF<sub>3</sub>) for the semiconductor industry was started at a plant in South Africa during 2000 and production capacity was further increased during 2003. This product is an important etchant that is also used for in-position cleaning of semiconductor process equipment.

In September 2001, BOC acquired Fluorogas Limited, a UK based company with expertise in the development and operation of low pressure on-site fluorine generators. The acquisition was made to assist in BOC Edwards' development of alternative cleaning systems for semiconductor process tool chambers. As a result of a jury verdict against Fluorogas Limited in a US litigation action, Fluorogas Limited was placed in administration. Further details of the litigation are given in the financial review on page 50.

During 2001, a decision was taken to concentrate electronic materials production into fewer locations and to close some existing facilities in the UK and the US to increase efficiency and reduce costs. These closures were completed in 2002.

In October 2001 BOC Edwards agreed terms for the acquisition of the vacuum and pressure business of the Smiths Group. These businesses are located in the UK, north America and continental Europe and typically serve customers in the metallurgy, water treatment, food, power and chemicals industries rather than semiconductor manufacturing.

The acquisition of the turbomolecular pumps business from Seiko Instruments Inc in Japan was completed in March 2002 with the principal objective of enhancing the ability of BOC Edwards to develop vacuum sub-systems to satisfy the growing trend to on-tool pumping in the semiconductor industry.

Hydromatix and Semco were also acquired during 2002 with the intention of positioning BOC Edwards in those market segments expected to deliver the fastest growth. These two companies, based in the US, are involved principally in semiconductor wet processing technology including chemical blending delivery and collection systems as well as liquid waste abatement systems.

BOC Edwards sold its glass coating business, based in the US, in April 2002 but retained its Temescal business that supplies technology for compound semiconductor manufacturing.

#### **Afrox hospitals**

Afrox Healthcare Limited owns 63 hospitals and clinics and has a minority interest in a further seven hospitals managed by others. In addition it also manages the Lifecare group of chronic-care hospitals. In addition to hospitals and clinics, which are the core business, Afrox Healthcare Limited also includes Afrox Healthcare Services, which facilitates a direct medicines service for chronic medication, and provides occupational health services, nursing training and laboratory services. Management believes that Afrox Healthcare Limited is the leading provider of private health care in southern Africa.

During 2000, African Oxygen Limited (Afrox) increased its holding of Afrox Healthcare Limited to 82 per cent. During 2001, the 55 per cent interest in Lifecare Special Health previously held by Afrox was bought by Afrox Healthcare Limited.

In January and July 2002, Afrox sold parts of its holding in Afrox Healthcare Limited but retains a 69 per cent interest. This disposal was in accordance with the terms of the transaction between Afrox and PresMed that took place in 1999.

In July 2003 Afrox announced that it was in the process of considering its strategic options with regard to its shareholding in Afrox Healthcare Limited. On 17 November 2003, Afrox announced that it had agreed to sell its entire holding in Afrox Healthcare Limited to a consortium of Black Economic Empowerment investors. The sale remains subject to certain conditions including clearance from the relevant competition and other regulatory authorities.

#### **Gist (formerly BOC Distribution Services)**

Gist is a provider of specialist supply chain solutions. The name Gist was adopted during 2001 to reflect both the continuing focus on supply chain operations and an increased emphasis on supply chain consulting, managed solutions and logistics support to e-fulfilment opportunities. This realignment of the business followed a planned withdrawal from most non-Marks & Spencer primary temperature controlled operations in the period 1999 to 2000.

High quality supply chain operations remain at the core of the business. Gist manages a range of supply chains on behalf of retailers, mainly in the UK, as well as some overseas. For over 30 years Gist has been the largest supply chain provider for Marks & Spencer. Gist currently handles all of its UK food distribution and the consolidation and dispatch of all overseas shipments to subsidiaries and franchised operations.

During 2003, Gist ceased to operate general merchandise logistics and garment stockholding operations on behalf of Marks & Spencer.

Gist has provided supply chain consultancy services to major supermarket and catalogue retailers in the UK and demonstrated its capabilities in managing international supply chains. In addition an on-line wholesaling operation has extended the range of Gist's skills offered externally.



**Table of Contents****Employees**

At 30 September 2003 the Group had 44,507 employees (2002: 46,280 employees, 2001: 43,171 employees). Employees of the company and its subsidiaries were located as follows:

Europe	12,353
Americas	7,451
Africa	17,138
Asia/Pacific	7,565

The employee base was very stable and unplanned turnover was low during the year. BOC was successful at retaining the organisation's core skills and capabilities and, as a result, continues to be able to meet its business, customer service and health and safety targets. BOC's capability review and succession planning processes highlight that it has solid capability in most areas and adequate succession depth to meet both its technical and leadership requirements. Plans to strengthen this capability further are progressing well.

**Employee satisfaction and commitment**

Levels of employee satisfaction and commitment are generally high. Progress continues to be made in achieving a culture of accountability, collaboration, transparency and stretch, known as ACTS in BOC. The ACTS principles provide a framework that enables employees to evaluate and critique how they deal with each other as well as how they work with customers, suppliers and the community. Business units continue to work on improvement areas identified as a result of the 2002 Employee Survey. Progress will be measured through a follow-up survey.

**Employment policies and Code of Conduct**

The BOC Group takes its responsibilities as a global organisation seriously. It is committed to fostering a workplace that is safe and environmentally sound. It will always act in line with all applicable laws, regulations and industry standards. It expects people to respect confidential information and company time and assets. It believes in open and honest communication, fair treatment and equal opportunities. It opposes public corruption, anti-competitive behaviour and insider trading, and it supports the fundamental principles of good governance and human rights.

The company is a signatory of the UN Global Compact and subscribes to its nine principles of human rights. These principles represent minimum standards for BOC and in many of the areas covered, existing standards exceed those set out in the Global Compact.

During the year, BOC launched a global Code of Conduct, a framework of legal and ethical standards for all BOC people to work and live by. This is an important programme that draws together and builds on many existing standards and processes in BOC.

The code is supported by a number of processes. BOC has introduced a confidential helpline to deal with questions in every country where it operates. It has translated the standards into key languages. It is also making sure everyone has access to appropriate training and guidance.

In addition to the Code of Conduct, BOC provides guidance and leading-edge human resources policies to support BOC people in their day-to-day activities and long-term career planning. These are aligned to a set of corporate values and principles. The heart of this approach is the recognition that the energy and application of individuals and teams throughout the organisation will determine competitive advantage in today's complex global market.

BOC's employment policies are designed to underpin the Group's operating requirements and growth strategies. The human resources units implementing these policies are close to the business units in each geography and, as far as practicable, Group policies are adapted to meet local requirements.

**Communication and involvement**

BOC places a high priority on two-way communications with its people. The primary communication channels are within the business units, where local managers work with their people and two-way communication is most achievable.

The Group also uses a number of formal and informal communication channels to share information and to shape behaviour. In addition to traditional media such as videos, magazines, newsletters and briefing packs, BOC has continued to invest in e-mail and web-based communications technologies to ensure that consistent and coherent messages are conveyed speedily to its people around the world.

The Group actively searches for ways to involve employees in shaping the future. It is common to find teams of people meeting to review or jointly create processes, systems or strategies. A variety of employee structures exist for these purposes, including peer groups, special interest groups, teams of excellence and quality teams. Multi-disciplinary and cross-geographic groups of employees regularly meet, either face-to-face, or by using tele-, video- and web-based meeting technologies which have been installed for these purposes.

### Resourcing, training and development

Resourcing, training and development programmes are designed to ensure that the Group has a pool of well-qualified, gifted individuals able to meet day-to-day operational needs and plans for the future.

BOC conducts a robust annual process to assess the strengths and weaknesses of its units.

It is committed to providing its people with opportunities to develop and grow, but also to bring new blood into the organisation through targeted external recruitment. A global, web-based recruiting platform is being rolled out globally to supplement other recruitment channels.

BOC continued to place great emphasis on personal and career development over the past year. Employees are encouraged to be proactive about their future careers and development opportunities. The aim is for all employees to have regular discussions with their managers regarding their aspirations, prospects and development needs. These result in the formulation of an individual development plan, which is an agreed course of action to meet employees' needs as well as the needs of the organisation.



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### Employees continued

BOC offers many opportunities for career and personal development. Employee development takes the form of on-the-job coaching and training, development projects, secondments, e-learning, as well as more traditional classroom-based training.

In addition to the development that takes place to achieve current job effectiveness of all employees, high potential employees are identified and developed with future roles in mind. Lead is an ambitious executive development programme for high potential senior managers, facilitated by world class external providers as well as senior BOC executives. It is customised for BOC and is comprehensive in its scope. The programme offers a tailored curriculum and is designed to equip the participants with the broad range of skills and experiences they will need to be successful leaders within the Group. To date, over 100 senior leaders have had the opportunity to participate in Lead programmes.

During the past year, a new leadership development programme, iLead, has been designed and developed for high potential middle managers. It is the intention to run iLead programmes in each BOC region, each year. Lead and iLead augment many other management development initiatives, which are provided to supervisors and managers around the world.

BOC believes that how its employees work is as important as what they produce, which is why it has concentrated on the behaviours associated with accountability, collaboration, transparency and stretch – the ACTS cultural principles. Accountability comes through people knowing what they are accountable for and being empowered to deliver. Collaboration is about drawing on the rich diversity of styles, talents and skills across the Group to maximise achievements. BOC values transparency because of the belief that visible problems can be solved and that informed people make better decisions. Finally, stretch advocates continually pushing the boundaries of performance. BOC has created a set of leadership competency models, which are aligned to ACTS. All recruitment, development, recognition and enhancement processes are being aligned to this comprehensive and unified BOC view of leadership and management.

#### **Reward and recognition**

An organisation that aspires to excellence must recognise and reward the achievement of excellence. The Group continues to refine the key value drivers of its business units and to ensure it can reward and recognise outstanding individual and team performance in the fulfilment of business goals. Programmes to achieve this are cascaded throughout the organisation to heighten focus on effective performance at all levels.

The Group continues to move towards a total reward system that allows people to structure their remuneration and benefits to suit their individual needs. Senior executives' remuneration is linked to a Group-wide variable compensation plan, which is described in the report on remuneration on page 60.

#### **Retirement benefit plans**

BOC considers it important that its people provide for their retirement, and fully supports their efforts in this regard. Around the world, the Group provides opportunities for people to participate in retirement programmes tailored to suit local conditions. Just as important, the board's pensions committee takes prudent steps to monitor and control Group-wide retirement benefit plans with local managers being responsible for safeguarding the security of each retirement plan that they sponsor.

During the year, BOC closed its UK defined benefit pension schemes to new members and replaced them with a new defined contribution plan.

The financial position of the Group's main pension funds is detailed in note 8 to the financial statements.

#### **Diversity**

As one of the UK's few truly global companies, BOC highly values the rich diversity of its people. While the Group consistently champions a set of unifying values and principles, they are not imposed regardless of local sensibilities. Rather, the Group strives to build on the qualities inherent in its global environment by encouraging people with different views, styles and approaches. Wherever in the world it operates, BOC is committed to maintaining a workplace free from discrimination for reasons of race, creed, culture, nationality, religion, gender, sexual orientation, age or marital status.

Disability is not considered a barrier to employment and, as far as local conditions allow, employees are selected on the basis of their ability to perform the job. Further necessary training is arranged, taking account of their particular needs and the resources required to meet them.

#### **Employee share schemes**

Many BOC employees in the UK and some other countries have built up an equity interest in the Group's business through employee share schemes. Options may be granted at a discount to the market price at the date of grant. The term of options granted could be from three to seven years and any option is conditional on a commitment by the individual to make regular savings from pay that are then held by an independent organisation to purchase shares at the end of the option period. The exercise of options under these schemes can be satisfied by the issue of new shares or the transfer of existing shares.



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**Table of Contents****Safety, health and the environment****Overall safety performance**

	2002	2003 <sup>1</sup>
Lost workday case rate	0.37	<b>0.45</b>
Total recordable case rate	0.76	<b>1.18</b>
Passenger car avoidable accident rate	1.72	<b>1.99</b>
Truck avoidable accident rate	2.13	<b>2.75</b>

BOC is committed to excellence in safety, health and environmental management. Each employee is expected to comply with all external regulations and the Group's global Code of Conduct. BOC's commitment is best illustrated by the breadth of measures taken to equip employees with the appropriate safeguards, tools and training.

This year, BOC launched and implemented its Code of Conduct. The code sets out the values and standards which guide the way BOC businesses around the world conduct themselves. The legal, ethical and corporate responsibility dimensions of safety, health, environment and quality (SHEQ) management are key features of the code's programme of communication, training, adherence, checks and audits. The code also ensures that SHEQ issues are managed consistently across all countries and businesses.

A dedicated SHEQ department ensures that the Group has a deliverable policy, is proactive in its risk assessment and professional in its remediation.

BOC has well-established programmes governing SHEQ performance. These standards, procedures and tools are firmly embedded by the Group's global integrated management systems and standards (IMSS) database. IMSS disseminates the Group's SHEQ policies through the BOC intranet, outlining the minimum standards and actions needed to align with or conform to ISO 9000 (quality assurance), ISO 14001 (environment) and ISO 18001 (health and safety) management systems as well as the international safety rating systems (ISRS).

The management of safety and environmental performance is measured in the same way as are other key business indicators. BOC has improved efficiency with more recycling, better energy conservation and less raw materials waste from the Group's production and distribution processes.

**Safety**

BOC manufactures and distributes some products that are potentially hazardous, being stored at very low temperature or under pressure, with some exhibiting toxic or flammable properties. BOC is committed to practising and communicating safe operations around the world as part of its product stewardship process. It is as important for the Group to transmit safe working methodologies to customers and suppliers as it is to have clear, entrenched and measurable performance standards practised by all BOC plants, depots and distributors.

Each business unit has a safety function, reporting to the business unit's executive and to the Group SHEQ function through a peer group network. This ensures that global best practice and the functional requirements of the business are always at the forefront of management thinking.

Controlling process-related risks is of the utmost importance. Any incidents that do occur are thoroughly investigated and the lessons learned are applied throughout the organisation to minimise the likelihood of recurrence. Safety lessons are shared throughout the gases industry and BOC continues to participate fully in the development and application of industry-wide codes.

In 2001, BOC instigated a five-year plan to halve the Group's accident rate. Five-year strategies were developed across all business units to enable safety objectives to be achieved. The main items underpinning the strategy are implementing, communicating, measuring and reporting best practice as well as standardising worldwide competency levels, training and increasing focus on safety behaviours.

The competence and training of BOC employees is continually improving as the Group's IMSS package is rolled out globally. BOC's senior executives have committed to achieve agreed safety training competencies. This process is being cascaded throughout the organisation.

As part of its five-year strategy, BOC has started to implement a process focusing on safety behaviours to improve and sustain performance across the organisation. This process combines visible leadership, a binding safety policy, an integrated organisation

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for managing safety across the Group, a system of behavioural safety assessments and the use of positive leading indicators such as training and the clearance of corrective action to ensure the achievement of safety goals.

This year, the Group safety function changed the basis of its incident reporting. Incident reports have been extended to include recent mergers and acquisitions and all joint ventures. The graph figures detailing BOC's safety performance for 2003 are on this basis but it is not possible to rebase the preceding years.

It is with great sadness that the Group reported four employee fatalities this year. This is a matter of intense regret. None of the fatalities was process related. One employee died in Thailand after a roadside incident. One died in Chile when he fell from a warehouse roof. One died in South Africa when his tanker hit some debris on the road. One died in the UK in a road traffic accident.

A great deal of effort has been made to improve safety performance with increased scrutiny and implementation of rigorous procedures, including new Group and business unit safety processes. As in every year, BOC takes steps to prevent and address the underlying causes of serious incidents as well as to ensure employee security in the workplace. The Group uses four principal indicators to provide a consistent measure of its workplace and vehicle safety performance. These are:

Lost workday case rate (LWCR) per 200,000 hours. This includes all accidents resulting in the loss of one complete day of work, according to best international practice. Many companies only report cases resulting in three or more lost workdays as deemed reportable under RIDDOR regulations.

Total recordable case rate (TRCR) per 200,000 hours. This includes all LWCRs and medical treatment cases.

Passenger car avoidable accident rate (PCAAR) per million miles.

Truck avoidable accident rate (TAAR) per million miles.

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### Safety, health and the environment continued

#### **Occupational health and hygiene**

BOC requires its businesses around the world to manage employee health activities in accordance with local laws and regulations and according to BOC's own codes of practice. The Group's occupational health and hygiene (OHH) function continues to provide a global service, striving to eradicate the organisation's work-related health hazards. It also ensures that those who travel internationally on Group business are properly protected against disease and that the medical requirements of visas and work permits are met.

Access to global guidance on OHH, together with manuals, training videos and safety data sheets, is available through local and global SHEQ functions and on a dedicated intranet site.

The OHH function carries out reviews in all business units and regions to provide information and guidance on the main health issues that exist in BOC operations globally and how best these potential hazards may be minimised or eliminated. This is achieved by providing best practice standards and guidance to local SHEQ personnel who then implement policies as necessary. Adverse employee health effects are monitored through occupational health checks around the world. Some checks are managed internally and others are out-sourced to professional occupational health providers. Voluntary well-person and routine yearly medical examinations are conducted to monitor the health of employees.

The main potential health issues that exist in BOC operations differ across business units. In the gases businesses, the main potential health issues are: exposure to noise from gas compression activities and from cylinder handling; potential exposure to some gases filled into cylinders; potential exposure to chemicals used in metal cleaning; vehicle maintenance and painting operations; and ergonomic and manual handling risks, particularly associated with cylinders.

OHH programmes have been developed to deal with these issues and are applied across the Group through local initiatives and the SHEQ integrated management system. BOC programmes include: an education programme to raise awareness of the effects of noise; a manual handling training video; a legionella control programme for water systems such as cooling towers on sites; a programme for the assessment of display screen equipment to minimise ergonomic health risks; a chemical assessment and management programme and specific work to reduce the use of chemical solvents.

#### **The environment**

Although classified in the chemicals sector, BOC does not have the same direct or significant environmental issues to deal with as traditional chemicals manufacturers. The nature of BOC's activities and the type of chemicals handled are quite different. However, in line with other industries, BOC is committed to the conscientious stewardship of its products and services.

Management of environmental issues that are relevant to the Group's businesses are overseen by the SHEQ department operating at a global and local business unit level. Group environmental strategies continue to help to improve business performance in sites across the world. Many BOC business units have programmes to achieve ISO 14001 environmental certification.

In 2003, KPMG (a professional services firm) reviewed BOC's integrated management system and standards (IMSS) to assess whether IMSS environmental documentation conforms to the requirements of ISO 14001 for environmental management systems. KPMG concluded that IMSS documentation complies in all material respects with the standard. As a result, KPMG provided BOC with an assurance statement which can be seen on [www.boc.com](http://www.boc.com). Assurance by an independent auditor is an important indicator, showing that BOC takes environmental management seriously and has robust sustainability systems. If a BOC business can demonstrate that it has implemented the requirements of IMSS it can also show that it adheres to ISO 14001 without having to undergo ISO certification for all sites.

The SHEQ department continues to pursue a programme to integrate environmental goals into the organisation's management performance contracts and develop global best operating practices. BOC's global environment working group this year developed an improved annual environmental survey. This new web-based platform will be used to develop action plans and report performance on-line. Web-based management systems will contribute to significant efficiency enhancements in the future. For example, introduction of a new control system that enables a nitrogen liquefaction unit to be started remotely at BOC's Midland site in the US will lead to energy savings of some US\$1 million per annum.

BOC has operated a comprehensive environmental survey programme of its sites for more than ten years. The annual survey highlights issues relevant to the business and assesses how well they are being managed. Objectives for improved performance remain an integral part of business performance contracts.

The transport of product by road has a potentially significant environmental impact. BOC operates its vehicle fleet to the highest environmental standards. Gist, the Group's distribution and supply chain business, won the environment award at the 2003 Motor Transport Awards in London. Environmentally focused initiatives ranged from development of innovative vehicle design and use, such as noise minimisation equipment and new exhaust treatments, pallet recycling, waste reduction and various site-specific initiatives. For example, Gist and Marks & Spencer are co-operating to recycle 3.5 million food distribution trays.

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The use of energy in BOC operations is an area of constant focus. Over the last three years, Process Gas Solutions operations have focused on plant and distribution efficiency improvements, resulting in more than one thousand projects that will deliver significant annual savings.

BOC's commitment to environmental stewardship and partnership is shown in its approach to new plants, facilities and services. For example, BOC and Hudson Technologies signed a global alliance to promote technology that cleans and reclaims refrigerants. The technology will improve plant efficiency leading to greater energy savings for customers and environmental benefits from reduced carbon dioxide emissions.

Selecting the right supplier for BOC is fundamental to conducting business effectively and ethically. Throughout its businesses, BOC has adopted the SESPA™ process for supplier evaluation, selection and performance appraisal, together with a new ethical purchasing policy implemented by the supply management function.

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Environmental, safety and social considerations are key SESPA™ and supply management standards. BOC also uses a best practice guide to define supplier safety, health and environmental requirements. This looks for positive environmental attributes such as ongoing environmental performance, awards, legal action and proactivity.

BOC aims to comply fully with all material environmental laws and regulations. BOC received one administrative fine in the US of US\$1,500 in 2003. This related to the late submission of paperwork to a local regulatory authority. No prosecutions for breach of any environmental regulation were incurred and BOC was compliant with external standards, but not all businesses complied fully with all internal codes or practices. Where this is the case, it has responded with measures to abate and prevent future occurrences as part of the Group's programme of continuous improvement.

The US Environmental Protection Agency has named The BOC Group Inc as a potentially responsible party for clean-up costs at a number of hazardous waste sites. Although liability for the remediation of such sites may be legally imposed without regard to the quantity of waste contributed, based upon the information available management believes that it is unlikely that any costs incurred will have a significant impact on the financial position of the Group.

BOC continues to contribute technology and processes to meet the environmental needs of customers who are striving to improve their own environmental performance. The increase in the demands set by environmental legislation also presents BOC with a number of potential business opportunities. BOC's eco-efficiency technologies include the Vitox oxygen injection system, which improves water quality and can, for instance, help fish farmers improve production rates. BOC has also patented systems to recover carbon dioxide from other companies' productive processes and put it to constructive use. For example, reclaimed carbon dioxide is infused in drip-irrigation water or used to enrich atmospheres to enhance crop growth. The glass and metals industries use BOC's oxy-fuel burners to increase the efficiency of combustion, using less fuel and reducing polluting emissions.

BOC installed some of its new BOC low emission swirl (LES) oxy-fuel burner systems at a Johnson Matthey precious metals refinery in the UK this year. The oxy-fuel burners improve emission performance and operational efficiency.

BOC and Maxon Corporation jointly developed a new combustion technology, known as the oxy-therm low emission flat flame (LEFF) burner, that helps glass manufacturers to reduce energy costs and increase yield.

BOC put itself at the forefront of the UK double glazing industry's drive to combat global warming with a scheme to reduce heat loss through windows and cut carbon dioxide emissions. BOC also launched safety workshops for UK refrigerant gas users.

The Group continues to develop technology that is more energy efficient, which helps to support customers and partners meet their carbon dioxide emission reduction commitments under the Kyoto protocol on climate change. BOC's Hartford air separation plant in Illinois received the Compressed Gas Association's 2003 award for environmental excellence. This was the result of the plant's efforts to reduce power consumption by 320 kilowatts per hour while avoiding the use of ozone depleting substances.

The Group continues to work actively with its stakeholders—customers, suppliers, employees, local communities and governments—to ensure environmental issues are approached responsibly and supported actively. BOC sponsored the third BOC environment award at the UK's Institute of Chemical Engineers' annual award ceremony in July. The award was given to Dow Corning for an environmental management system that saved the company £8 million in the last two years. BOC was also awarded a special Green Ribbon award in recognition of its outstanding contribution to sustaining, protecting and enhancing the environment in New Zealand.

Underlining the Group's adherence to sound, internationally attested environmental practices, BOC is a signatory to the UN's Global Compact in support of human rights, labour and environmental principles. The continuing importance of global compliance, corporate social responsibility and sustainability amongst the Group's wider stakeholders means that BOC has continued to review and adapt its business practices appropriately by strengthening policies, training and implementation programmes and processes. This has been further enhanced by including environmental concerns in the Group's Code of Conduct. In the Americas, BOC supports the chemical industry's Responsible Care programme. BOC's Colombian business reached its third year of active support for cleaner production with 22 other companies in the north Aburra valley. BOC continues to participate in the Business in the Environment survey for the UK. This year the Group improved its overall survey score achieving 88 per cent against 76 per cent in 2002, taking BOC into the top 25 per cent of FTSE companies participating in its survey.

BOC Edwards also became a signatory to Global Care, a semiconductor industry initiative designed to establish a framework where members can strengthen their commitments to the environment, health and safety.

### **The BOC Foundation for the Environment**

The UK-based BOC Foundation for the Environment, which was established with an initial injection of £1 million in 1990, has so far supported nearly 120 projects. This year the company contributed £180,000 to Foundation projects. Since the Foundation's inception BOC has donated £3.7 million. The Foundation concentrates its funds on projects that improve air and water quality. Air is important to BOC because it is the source of BOC's raw materials: oxygen, nitrogen and argon. Water is both an essential part of many of BOC's production processes and a growing market opportunity.

The Foundation wants to make a practical contribution. It encourages those with good scientific ideas who need financial help to turn academic or early results into workable environmental solutions. It expects the projects it supports to make a measurable difference within a few years and to benefit the community as a whole, not just the recipient of the grant. The Foundation has worked in partnership with government departments, local authorities, environmental charities and commercial organisations.



**Table of Contents****Research, development and information technology****Research and development**

Research and development (R&D) is conducted around the world with key sites located in north America, the UK and Japan. The Group Technical Center (GTC) in Murray Hill, New Jersey, is a primary R&D location for market applications for Process Gas Solutions and for electronic materials for BOC Edwards.

Process Gas Solutions delivers technology through internal development, the formation of alliances and partnerships with universities and customers, licensing or acquisition of technologies from third parties and by participating in technology-based ventures. BOC now has access through Linde BOC Process Plants to much broader technology and product offerings, especially in hydrogen and syngas. The development of ceramic-based technologies for the production of hydrogen and syngas continues.

BOC has acquired proven technology from Eco-Snow for precision cleaning using carbon dioxide (CO<sub>2</sub>) snow. It also recently acquired ultra violet/ozone-based technology from RGF Environmental to provide additional food safety solutions by preventing the growth of listeria and extending product shelf life.

BOC joined Sumitomo Electric Industries and Intermagnetics General Corporation to demonstrate high temperature superconducting cable technology in Albany, New York with substantial government and state funding. The European Union is funding further development, with other companies and universities, into ceramic-based oxygen separation to enhance CO<sub>2</sub> sequestration.

BOC's investments in hydrogen energy include vehicle fuelling demonstrations, very high pressure gaseous hydrogen fuelling stations and participation in Chrysalix, a hydrogen energy venture capital fund.

Industrial and Special Products has developed the LASOX laser cutting technology jointly with partners. Through internal developments and participation in ventures it has invested in new opportunities in the medical sector. It has also used advanced techniques to drive operational and distribution efficiencies.

BOC Edwards uses joint development agreements with original equipment manufacturers and end users, along with guidance from the International Technology Roadmap for Semiconductors (ITRS), to prioritise its investments in semiconductor technology. Programmes draw on a combination of BOC technologies in gases, vacuum, purification, delivery and systemisation. An example is supercritical CO<sub>2</sub> technology for cleaning wafers with small features.

A new reconfigurable control system for chemical dispense equipment dramatically reduces set-up time, and allows for easy and flexible process changes. Enhancements have also been made to slurry delivery, including point of use delivery.

An important development area is high capacity abatement technology for flat panel applications. The Zenith line of integrated pumping and abatement systems are smaller and give reduced cost of ownership for customers in both silicon and compound semiconductor facilities.

BOC Edwards continues to focus on products for sub-90 nanometre integrated circuit fabrication. Pumping systems designed for 300mm fabs form the basis for a range of solutions for flat panel manufacturers, including the latest generation 7 factories in Asia and Japan.

BOC Edwards' advanced systems for copper technology include flexible, high accuracy blending technology for chemicals and chemical mechanical planarization (CMP) slurries, along with novel technology to address the waste generated by these advanced processes. Load cell technology increases blend accuracy, improves control over slurry distribution to the CMP tools and enhances equipment stability.

Patented metal removal technologies are being applied to the treatment of electro-less plating bath waste streams. Similarly, copper CMP slurry waste streams can now be abated using a process which removes copper from a stream of suspended solids without removing the solids.

Development programmes continue on materials designed to meet increasing purity requirements for the storage and delivery of gases and liquids. In situ sensors have been introduced for enhancing manufacturing productivity in semiconductor fabs.

Continuing work with a leading manufacturer of lithography tools aims to solve vacuum problems for extreme ultraviolet lithography tools, projected to be needed for sub-45 nanometre integrated circuit technology. Development continues on ultra-pure gas systems for 157 nanometre lithography tools.

Pumps have been developed with improved hydrogen performance for key applications in the dielectric deposition market. Development continues on low noise and vibration pumps, and to improve motors and drive mechanisms. For the scientific sector, the range of pumps has been expanded to bring dry pumping technology to the life sciences, primarily users of mass spectrometry.

Kachina's technology has developed from high purity cleaning of semiconductor chamber parts to the broader requirement of providing technology-based solutions that reduce the cost of ownership of the customer's operations.

BOC Edwards Pharmaceutical Systems continues to focus on developments in automated handling systems for aseptic packaging, driven by the industry's increasing requirement to separate potent drugs from human operators; and in-line product inspection, which is now receiving the support of the US Food and Drug Administration's Process Analytical Technology initiative. Its most recent inspection product uses nuclear magnetic resonance to weigh the contents of vials in high-speed motion down a packaging line.

Total R&D expenditure in 2003 was £39.9 million, compared with £47.0 million in 2002 and £59.7 million in 2001.



## Information technology

The number of countries running the SAP business computing system grew again this year when the system was further extended to the Process Gas Solutions and Industrial and Special Products business units in the US, Canada and Poland. Deployment throughout BOC Edwards worldwide also began. The global data centre, which provides a central facility for managing all SAP transactions from around the world, continued to function well. A fully-equipped back-up centre was established capable of instantaneous operation in the event of a failure.

The Webcentric project in the south Pacific demonstrated the feasibility of running all office-based software on remote computers, accessed by users as and when needed from simple terminals on their desktops. A number of new technologies were also deployed to support improved business processes and to offer competitive advantage in some key markets.

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### **Risk factors**

This document contains certain forward-looking statements which involve risk and uncertainty as they relate to future events and circumstances. The following risk factors, as well as those discussed on pages 47 and 48 of the financial review, could cause actual results to differ materially from those expressed or implied by these forward-looking statements:

#### **BOC is affected by the semiconductor business cycle**

Manufacturers of semiconductors represent BOC Edwards' major customer base, and BOC Edwards' profitability is directly linked to the demand of these manufacturers for vacuum equipment, services and industrial gases. The semiconductor industry has experienced significant growth over the long term, but is cyclical in nature. Owing to reduced demand from end users of technology products and excess supply of semiconductors, the semiconductor industry continues to experience a severe downturn, which negatively impacts the demand for BOC Edwards' products and services. A delay in the recovery of the semiconductor industry, or a further downturn in that industry, could continue to adversely impact BOC's financial results.

#### **Acquisitions may not be successful in achieving intended benefits and synergies**

BOC has completed a number of acquisitions in recent years as part of its growth strategy. While BOC will have identified expected synergies, cost savings and growth opportunities prior to acquisition and integration of acquired entities, these benefits may not be achieved owing to, among other things:

- delays or difficulties in completing the integration of acquired companies or assets;
- higher than expected costs or a need to allocate resources to manage unexpected operating difficulties;
- diversion of the attention and resources of BOC's management;
- inability to retain key employees in acquired companies;
- inability to retain key customers; and
- assumption of liabilities unrecognised in due diligence.

#### **The growth of BOC's gases business will depend on the ability to win and execute large projects profitably**

BOC, through its Process Gas Solutions line of business, has a strategy for growth that requires significant investment each year to serve key customers in different geographies. Failure to execute projects successfully for these customers will impact PGS's ability to win new projects from these customers, and therefore may impact BOC's future financial results. The specific risks associated with major projects include:

- failure to complete the project on time owing to unforeseen construction problems (which may require BOC to pay penalties under the terms of the customer contract);
- failure of the plant to deliver the contracted volumes and quantities of product required by the customer because of design errors or errors in manufacturing or construction (which may require BOC to pay penalties under the terms of the customer contract); and
- inability to operate the plant at costs assumed in BOC's financial evaluation of the project.

#### **The safety of BOC's operations is critical to success**

Industrial gases are hazardous substances and BOC recognises that managing safety in operations, transportation and products is critical to achieve growth and financial results. Failure to maintain high levels of safety can result in a number of negative outcomes, including:

- exclusion from certain market sectors deemed important for future development of the business (such as medical gases);
- damage to reputation;
- fines and penalties for breaches of safety laws; and
- liability payments and costs to employees or third parties arising from injury or damage.

#### **BOC operates in over 50 different countries and is therefore exposed to economic, political and business risks associated with international operations**

BOC's overall success as a business with global operations depends, in part, upon its ability to succeed in differing economic, political and business conditions. BOC encounters different legal and regulatory requirements in numerous jurisdictions. These include taxation laws, environmental regulations, regulations concerning operational standards and competition laws. BOC is also confronted by political risks such as the expropriation of assets and the inability to export currency. The business risks and challenges faced in each geography include the need to manage credit risks of local customers, appointing and retaining key staff, general economic conditions locally and currency fluctuation. Recognition of changing market conditions in local geographies is critical to BOC's long-term success. In addition, BOC's operations are exposed to varying degrees of natural catastrophe risk, such as earthquake and flood, as well as security risk, in the different countries in which BOC operates.

**BOC relies on development of, or access to, technology to support business growth**

BOC's success is dependent in part on its continued investment in technology to develop new products and services across all businesses, new applications for existing products or to design effective means for producing industrial gases. Failure to access or develop technology or anticipate, manage or adopt technological changes in operations or product applications on a timely basis could have a material impact on BOC's future results. For example, the rapid development of technology in the semiconductor sector requires BOC Edwards to be aware of changes in customer technology requirements and to introduce new products to meet those requirements in a timely manner. Failure to do so could result in reduced market share and profitability.

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### Risk factors continued

#### **BOC operates in a highly competitive environment**

The industrial gases market is very competitive, with several large competitors and a significant number of smaller local competitors in different territories. Although the current trend in the industry is to seek price increases for industrial gases, the industry has experienced falling prices in some previous years. There is no guarantee that the current trend will continue and there is a risk that competitors will seek to maintain or increase market shares by reducing prices. These price reductions would result in lower revenues, profits and cash flows.

#### **Recognising and anticipating changes in the manufacturing economy is key to BOC's success**

BOC's industrial gas businesses serve a wide range of manufacturing customers in major geographies such as the US, UK, Japan and Australia. This is particularly true of the Industrial and Special Products line of business which provides products and services to customers involved in the welding and cutting of metal, the largest source of revenue for this division. As customers in these traditional manufacturing-based economies seek to move their manufacturing operations to lower cost territories in, for example, Asia and Latin America, the risk arises that BOC's operations in the major geographies will have lower growth opportunities. Failure to recognise these trends and manage the consequences, through the development of alternative markets and/or meeting demand in higher growth territories, could have a negative impact on future Group results.

#### **BOC's success depends to a significant extent on its key personnel and employees**

BOC's performance depends on the skills and efforts of its employees and management team across all of its businesses. BOC recognises that failure to attract new talent and retain existing expertise, knowledge and skills in operations, products and infrastructure areas such as information technology could have a negative impact on revenues and profits. In addition, the success of BOC's acquisitions may depend, in part, on BOC's ability to retain management personnel of acquired companies.

#### **Litigation may have an adverse impact on financial results**

The global nature of BOC's business exposes it to the potential for litigation from third parties. From time to time BOC is involved in lawsuits in the US, as well as other geographies, resulting from current and past operations or products. The outcome of these lawsuits may result in damages and awards which could have a material impact on BOC's profitability, its business operations or financial condition. Details of current litigation where claims for damages in large amounts have been asserted are provided in the financial review on pages 49 and 50.

#### **Increased energy costs could reduce profitability**

The production of industrial gases requires significant amounts of electrical energy. Energy costs are a key component of the cost of manufacturing industrial gases, and increases in these costs can impact profitability if they cannot be passed on to customers. Accurately predicting trends in energy costs is difficult to achieve as energy costs are to a large extent subject to factors beyond the company's control – for example, political conditions in oil producing regions. BOC also operates large fleets of commercial vehicles in certain major geographies. An increase in energy costs associated with the use of these commercial vehicles may negatively impact profit levels.

#### **Ineffective implementation of computer software systems**

The introduction of software to improve efficiency and effectiveness of various business processes is an important contributor to BOC's growth strategy. Failure to design, select appropriate suppliers or implement such systems effectively could result in unplanned costs or reduced levels of customer satisfaction which could adversely affect Group results.



**Table of Contents****Operating review****Introduction**

The Group's results are prepared under UK Generally Accepted Accounting Principles (GAAP) and comply with UK Companies Act requirements. While the UK GAAP reporting basis provides the core information for users of this report and accounts to understand the financial performance of the Group, management believes that users will be assisted in understanding the performance relative to previous periods by presenting the results in an alternative manner. This presentation isolates the impact of currency movements from year to year and eliminates the impact of exceptional or non-recurring items. It is also the basis used by management to review performance of the business and is a component of variable compensation plans. The elements of this alternative presentation are described in more detail below.

**Impact of currency movements**

The Group has operations in some 50 countries around the world and the majority of its profit is generated outside the UK. Results of overseas operations are translated at the average rates of exchange against sterling for the year. Changes in such rates from year to year can significantly affect the Group's results when these are presented in pounds sterling. In some cases, such changes may make it difficult to understand underlying business performance trends without providing additional information. For example, the average value of the South African rand to pounds sterling changed by 15 per cent in 2003 compared with 2002. When looking at the financial performance of the Afrox hospitals business segment in 2003, it is therefore important to highlight this currency impact to users of the information.

Consequently, management has for many years monitored business performance on a constant currency basis. This basis eliminates the impact of changes in the rates of exchange used to translate the results of overseas businesses into sterling by retranslating the results of the comparative year at the rates of exchange used in the current year. This is the basis for all internal management reporting throughout the year.

In this operating review, the comparison of financial performance between years may in places be referred to as on this constant currency basis. Comments on all segmental performance are on a constant currency basis.

The impact of changes in the rates of exchange used to translate the results of overseas businesses into sterling is shown in the table below.

	2001 results (as reported) £ million	Impact of movements in currency £ million	2001 results (at 2002 rates of exchange) £ million	2002 results (as reported) £ million	Impact of movements in currency £ million	2002 results (at 2003 rates of exchange) £ million
Turnover (including share of joint ventures and associates)						
Process Gas Solutions	1,193.0	(35.4)	1,157.6	1,200.6	(50.5)	1,150.1
Industrial and Special Products	1,573.9	(75.4)	1,498.5	1,605.3	(5.0)	1,600.3
BOC Edwards	873.1	(26.7)	846.4	688.2	(30.3)	657.9
Afrox hospitals	287.8	(76.8)	211.0	259.0	46.9	305.9
Gist	231.4	0.2	231.6	264.8	(0.1)	264.7
<b>Total</b>	<b>4,159.2</b>	<b>(214.1)</b>	<b>3,945.1</b>	<b>4,017.9</b>	<b>(39.0)</b>	<b>3,978.9</b>
Operating profit						
Process Gas Solutions	103.7	(3.3)	100.4	161.2	(6.6)	154.6
Industrial and Special Products	227.0	(11.6)	215.4	229.3	2.1	231.4
BOC Edwards	62.7	(1.7)	61.0	(1.4)	(0.8)	(2.2)
Afrox hospitals	32.3	(8.6)	23.7	29.7	5.4	35.1
Gist	20.6		20.6	25.5	0.3	25.8
Corporate	(24.0)	0.1	(23.9)	(18.7)	0.4	(18.3)
<b>Total</b>	<b>422.3</b>	<b>(25.1)</b>	<b>397.2</b>	<b>425.6</b>	<b>0.8</b>	<b>426.4</b>

Adjusted operating profit						
Process Gas Solutions	156.5	(4.4)	152.1	185.2	(7.1)	178.1
Industrial and Special Products	248.8	(12.5)	236.3	248.0	2.0	250.0
BOC Edwards	78.8	(2.2)	76.6	26.1	(1.0)	25.1
Afrox hospitals	32.3	(8.6)	23.7	29.7	5.4	35.1
Gist	21.3		21.3	25.5	0.3	25.8
Corporate	(7.1)	0.1	(7.0)	(14.4)	0.4	(14.0)
Total	530.6	(27.6)	503.0	500.1		500.1

### Exceptional or non-recurring items

Management believes that to present the results of the Group in the most meaningful way, items of an exceptional nature should be separately identified and disclosed. This enables users of the information to have a better understanding of underlying business performance. Examples of such items in 2003 include a litigation settlement expense, the costs of the business initiative programme announced in August 2001, other restructuring programmes and charges relating to the integration of OSK (BOC's gases business in Japan) and part of the Air Liquide business in Japan to form Japan Air Gases. Additionally in 2002 there were charges in connection with the formation of the Linde BOC Process Plants business and a write-down in the value of the net assets of OSK ahead of the merger with part of Air Liquide Japan.

Exceptional items include those items classified as both operating and non-operating under UK GAAP.

**Table of Contents****Operating review continued**

The review of results excluding exceptional items is part of the normal internal management reporting process. The growth in operating profit excluding exceptional items is also one of the measures used in the variable element of the senior management compensation scheme.

Further information regarding the business initiative programme, which is now largely complete, as well as the other exceptional items is given in the financial review on page 46. An analysis of all operating and non-operating exceptional items is given in note 2 b) to the financial statements on page 83.

In this review, the adjustments to eliminate exceptional items have been made to operating profit (both Group and by segment), profit before tax and earnings per share. Exceptional items are commented on in the Group results section as well as in the individual business segments to which they relate. A reconciliation of these adjusted items to the equivalent UK GAAP measure is shown in the profit and loss account on page 72. When any results or measures used in this review have been adjusted to exclude exceptional items, they are referred to as adjusted.

Within the individual business segments of the operating review, operating exceptional items are commented on separately. Comments on other aspects of financial trends and performance are based on adjusted operating profit. This provides more meaningful comment on underlying business performance.

A reconciliation of adjusted operating profit to operating profit is given in the table below.

	2003			2002			2001		
	Adjusted operating profit £ million	Operating exceptional items £ million	Operating profit £ million	Adjusted operating profit £ million	Operating exceptional items £ million	Operating profit £ million	Adjusted operating profit £ million	Operating exceptional items £ million	Operating profit £ million
Process Gas Solutions	184.0	(6.9)	177.1	185.2	(24.0)	161.2	156.5	(52.8)	103.7
Industrial and Special Products	242.7	(4.5)	238.2	248.0	(18.7)	229.3	248.8	(21.8)	227.0
BOC Edwards	18.5	(10.6)	7.9	26.1	(27.5)	(1.4)	78.8	(16.1)	62.7
Afrox hospitals	46.1		46.1	29.7		29.7	32.3		32.3
Gist	29.2		29.2	25.5		25.5	21.3	(0.7)	20.6
Corporate	(14.9)	(45.0)	(59.9)	(14.4)	(4.3)	(18.7)	(7.1)	(16.9)	(24.0)
Total Group	505.6	(67.0)	438.6	500.1	(74.5)	425.6	530.6	(108.3)	422.3

**Other non GAAP measures**

This review also presents return on capital employed (ROCE) and adjusted return on capital employed. Adjusted return on capital employed removes exceptional items from the measure of operating profit used in the calculation. Adjusted return on capital employed is used by management for reasons similar to those described above.

A reconciliation of these two measures is shown below.

	2003			2002			2001		
	Operating profit £ million	Average capital employed £ million	ROCE %	Operating profit £ million	Average capital employed £ million	ROCE %	Operating profit £ million	Average capital employed £ million	ROCE %
Adjusted ROCE	505.6	4,053.4	12.5	500.1	4,053.8	12.3	530.6	4,108.2	12.9
Operating exceptional items	(67.0)			(74.5)			(108.3)		
ROCE	438.6	4,053.4	10.8	425.6	4,053.8	10.5	422.3	4,108.2	10.3



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1. ROCE is operating profit as a percentage of the average capital employed excluding net pension liabilities.

The Group commentary in this review also comments on free cash flow. Free cash flow is a measure often referred to by BOC management and other users of financial information to highlight the cash flow available from underlying ongoing business operations before acquisition and disposal activity. Whether or not this remains positive over time is an indicator that dividends to shareholders are being paid out of cash generated by existing Group businesses. As such it is a useful additional measure of financial performance.

A reconciliation of this measure to the nearest equivalent UK GAAP measure, net cash flow, is shown below.

	2003 £ million	2002 £ million	2001 £ million
Free cash flow	141.8	166.5	192.3
Exceptional cash items	(28.3)	(67.3)	(51.8)
Acquisitions and disposals	(118.3)	(215.5)	(133.6)
Other items within capital expenditure and financial investment:			
Purchases of intangible fixed assets	(1.2)	(0.1)	(0.3)
Net sales/(purchases) of current asset investments	16.6	4.3	(6.5)
Purchases of trade and other investments	(10.8)	(19.7)	(10.2)
Sales of trade and other investments	6.5	11.5	7.8
Net cash inflow/(outflow) before use of liquid resources and financing	6.3	(120.3)	(2.3)

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## Operating review (comparing 2003 with 2002)

## Group

Turnover including the Group share of joint ventures and associates was £4,323.2 million in 2003, up eight per cent compared with £4,017.9 million in 2002. Operating profit was £438.6 million, up three per cent compared with £425.6 million in 2002. After charging operating and non-operating exceptional items totalling £67.0 million and net interest and other financing items of £86.7 million, profit before tax was £351.9 million, up five per cent compared with £335.3 million in 2002. Earnings per share were 44.5p, up seven per cent compared with 41.4p in 2002. Excluding the exceptional items, adjusted operating profit for the year was £505.6 million, adjusted profit before tax was £418.9 million and adjusted earnings per share were 52.9p.

Comparisons with 2002 are affected by exchange rate movements. For the currencies that principally affect the Group's results, movements in the Australian dollar and the South African rand were favourable and movements in the US dollar and Japanese yen were adverse. If the results of a year ago had been translated at the rates applied to this year, turnover would have been reduced by £39.0 million. There would have been an increase in operating profit of £0.8 million and adjusted operating profit would have been unchanged. Adjusted profit before tax would have been £5.3 million higher and adjusted earnings per share would have been increased by 0.3p.

The table set out below summarises results reported both under UK GAAP and as adjusted. Results for 2002 are shown both as reported in that year and on a constant currency basis.

	2003	2002	2002 (at 2003 exchange rates) <sup>1</sup>
Turnover including share of joint ventures and associates (£ million)	<b>4,323.2</b>	4,017.9	3,978.9
Operating profit (£ million)	<b>438.6</b>	425.6	426.4
Adjusted operating profit (£ million) <sup>2</sup>	<b>505.6</b>	500.1	500.1
Profit before tax (£ million)	<b>351.9</b>	335.3	342.8
Adjusted profit before tax (£ million) <sup>2</sup>	<b>418.9</b>	430.0	435.3
Earnings per share	<b>44.5p</b>	41.4p	41.9p
Adjusted earnings per share <sup>2</sup>	<b>52.9p</b>	55.9p	56.2p

1. A reconciliation of turnover, operating profit and adjusted operating profit for 2002 at 2002 and at 2003 rates of exchange is shown on page 31.

2. A reconciliation of adjusted results with UK GAAP results is shown on page 32 and in the profit and loss account on page 72. Exceptional items in 2003 amounted to a charge of £67.0 million. The charge comprises £43.2 million for a litigation settlement, costs of £15.5 million for completion of restructuring programmes and £8.3 million relating to the integration of the BOC and Air Liquide businesses in Japan.

Exceptional items in 2002 included restructuring charges of £47.2 million and a £21.3 million charge relating to the closure of facilities in connection with the combination of BOC Process Plants with Linde Engineering in the US. An exceptional charge of £21.2 million was made to write down the value of OSK, BOC's gases business in Japan, in advance of the then proposed merger of OSK with part of Air Liquide Japan.

Adjusted return on capital employed for the year to 30 September 2003 was 12.5 per cent. Return on capital employed for the year to 30 September 2002 was 10.8 per cent. Free cash flow (as defined on page 32) remained positive and was £141.8 million in 2003. Net cash flow, after acquisitions, disposals and other investing activities, and including exceptional cash items, was £6.3 million in 2003. A reconciliation of these measures is shown on page 32.

A first interim dividend for 2003 of 15.5p per share was paid in February 2003 and a second interim dividend of 23.5p per share was paid in August 2003. In aggregate this was a 2.6 per cent increase over the annual dividend of the previous year. A first interim dividend for 2004 of 15.5 p per share has been declared for payment in February 2004.

Capital expenditure by subsidiaries (including interest capitalised) was £281.2 million in 2003, compared with £354.3 million in 2002. Capital expenditure by joint ventures and associates was £81.4 million in 2003, of which the BOC share was £36.1 million. Equivalent expenditure in 2002 was £74.2 million, of which the BOC share was £34.5 million. The Group also made acquisitions of businesses of £135.5 million in 2003 and proceeds from disposals were £3.9 million. Equivalent items in 2002 were £207.3 million and £10.6 million respectively.

## Process Gas Solutions (PGS)

	2003 £ million	Change on 2002	Change on 2002 <sup>1</sup> (constant currency)
Turnover	<b>1,242.7</b>	+4%	+8%
Operating profit	<b>177.1</b>	+10%	+15%
Adjusted operating profit <sup>2</sup>	<b>184.0</b>	-1%	+3%

1. A reconciliation of results for 2002 at 2002 and at 2003 rates of exchange is shown on page 31.
2. A reconciliation of adjusted operating profit with operating profit is shown on page 32.
3. All comments below are on a constant currency basis.

Increased turnover resulted from generally firm price trends as well as revenues from acquisitions and new plants serving chemical industry customers. The additional revenues came principally from BOC's joint venture with Yangtze Petrochemical Corporation (YPC) at Nanjing, China, from a new hydrogen and carbon monoxide (HyCO) plant at Map Ta Phut, Thailand and from the acquisitions of a partial oxydation syngas plant at Clear Lake, Texas, and the US water services company, Environmental Management Corporation.

Improved adjusted operating profit was also a result of operational efficiency gains. The closure of facilities in connection with the combination of BOC's Process Plants business with Linde Engineering in the US led to lower costs towards the end of 2002 and there was a full year of savings in 2003. There were also further cost reductions arising from continued progress in delivery scheduling and remote plant operation.

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### Operating review (comparing 2003 with 2002) continued

As in 2002, economic uncertainties constrained the authorisation of investment projects by customers during the year. A new hydrogen and carbon monoxide (HyCO) plant serving Citgo's oil refinery at Lemont in Illinois came into production in October 2003 and a new air separation plant is under construction in Nanjing. When completed in 2004 this will supply industrial gases to nearby chemical facilities being completed by a joint venture company established between BASF of Germany and the Chinese chemical company YPC.

Operating exceptional items in 2003 were for the completion of restructuring programmes, including those that were part of the programme announced in August 2001. Additionally, there were charges relating to the integration of the BOC and Air Liquide businesses in Japan to form Japan Air Gases.

**Europe** Turnover and adjusted operating profit increased in the UK and in Poland but declined slightly in Ireland. A full year of revenues from the plant commissioned in January 2002 to supply hydrogen to Huntsman on Teesside and from the Teesside pipeline system acquired in July 2002 were contributors to increased turnover in the UK. Despite continued weakness in UK manufacturing, sales volumes increased in the merchant market for liquefied gases and prices were also slightly firmer. The key factors behind the increase in adjusted operating profit were lower costs in 2003 as a result of restructuring and a charge of £3.6 million in 2002 for an asset write down and debt provision after a steel customer went into receivership.

The relocation of some customers and a general decline in manufacturing activity led to lower sales volumes and adjusted operating profit in Ireland. As in the UK, the trend of selling prices remained positive and marginally ahead of inflation.

Business in Poland benefited from stable economic conditions in anticipation of joining the European Union in 2004. The acquisition of the business of Praxair Polska took effect in February 2003 and added additional air separation capacity as well as BOC's first source of carbon dioxide in the region.

Cryostar is BOC's engineering company based in France, manufacturing cryogenic pumps, expansion turbines and compressors for a variety of industrial gas applications and for marine liquefied natural gas (LNG) tankers. Turnover and adjusted operating profit increased in 2003 as a result of strong demand for industrial gas applications in China and for shipboard expansion units on LNG tankers.

**North America** Despite a small increase in turnover, adjusted operating profit in 2003 was at a similar level to 2002. Selling price trends were favourable particularly in the second half of the year and were sufficient to offset cost inflation. Sales volumes were lower as a result of general weakness in manufacturing industries and some business was lost early in 2003 as customers changed to alternative supplies. At the same time, a significant volume of new liquefied gas business was obtained, mainly in the closing months of the year.

Steel industry customers that had benefited from US tariff protection in the previous year faced renewed competitive pressure in 2003. Some customers are operating under chapter 11 creditor protection.

Carbon dioxide for beverage applications continued to be in strong demand. During 2003 BOC improved analytical capabilities to upgrade product quality assurance for its Premier Beverage carbon dioxide service to the soft drinks industry.

At the end of January 2003, BOC acquired the partial oxidation syngas plant at Clear Lake, Texas, from Celanese. Under the agreement BOC fulfils a significant proportion of the industrial gas requirements for the Celanese chemical facility at Clear Lake. The Celanese facility is located on the Houston ship canal, and includes a world scale vinyl acetate monomer plant and the world's largest acetic acid plant. These require large quantities of oxygen and nitrogen as well as carbon monoxide.

A new HyCO plant serving Citgo's oil refinery at Lemont in Illinois began production in October 2003. This further expands BOC's hydrogen business with a variety of petroleum and chemical industry customers around the world.

**Latin America** Turnover increased significantly, although growth was held back by a general strike in Venezuela in the period December 2002 to February 2003. This inevitably affected customers' requirements for industrial gases. Adjusted operating profit also increased because of better sales volumes especially in Chile and Brazil and because of selling price increases that generally exceeded local rates of inflation.

BOC's joint venture company in Mexico supplying high-pressure pure nitrogen to Pemex for pressurising its Cantarell oilfield in the Gulf of Mexico performed steadily throughout the year.

In September 2003, a new 200 tonnes-a-day air separation unit was commissioned in Santiago to supply oxygen for leaching copper ores. Another plant is due to begin production in 2004 and will supply oxygen for CST, a steel producer in Brazil.

**Africa** Both turnover and adjusted operating profit increased in 2003. Sales volumes were broadly similar but selling prices were higher and cost controls also contributed to better margins. The focus of business development was on the use of gases in mineral processes in the extraction of precious metals.

**Japan** The combination of BOC's and Air Liquide's industrial and medical gases businesses in Japan took effect from January 2003. Until then the results of OSK, BOC's gases business in Japan, were consolidated as a subsidiary. Subsequently BOC has accounted for its share of turnover and profit of the merged company, Japan Air Gases, on an equity basis. This distorts

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the comparison of turnover and profit between 2003 and earlier years for BOC's three lines of business. On the respective bases used in each year, there was an increase in both turnover and adjusted operating profit for PGS in Japan for 2003.

The integration process that began in 2003 made good progress. The two organisations have been successfully integrated in the key areas and the number of branch offices has been reduced. Cryogenic equipment manufacturing has also been integrated into a single location. As a result of the merger, management remains confident of achieving cost savings at the annual rate of some Japanese yen 5 billion by the end of 2004.

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**North Asia** Turnover and adjusted operating profit were up significantly in 2003. Margins improved as a result of better operational efficiency coupled with some price increases.

Turnover gains were largely as a result of growth in north China but there was also growth in mainland south China, Korea and Taiwan. Turnover was down in Hong Kong as some customers relocated production to mainland China. Underlying growth of adjusted operating profit in south China was further boosted by additional profit arising from the renegotiation of a power supply contract. Results in north China benefited from the addition for a full year of the joint venture begun in May 2002 serving the petrochemical industry in Nanjing. Further liquefaction capacity was added to its existing air separation plant during 2003 to serve the local merchant market. Results also benefited from strong growth in the steel industry as a result of increasing local demand.

In October 2003 BOC announced that its joint venture with the Taiyuan Iron and Steel Corporation (TISCO), was to build two new air separation units (ASUs) to supply a total of 2,700 tonnes a day of oxygen to TISCO's plant in Shanxi province in north-central China. The new ASUs are expected to come on stream at the end of 2005. TISCO is the largest stainless steel producer in China and has been selected by the central government as one of two stainless steel development centres. Further investments at BOC's subsidiaries at Suzhou near Shanghai and plans to add some 400 tonnes a day of capacity at its associated company Pearl River Gases in southern China were also announced.

A new air separation plant is already under construction for BOC's joint venture in Nanjing. When completed in 2004 this plant will supply gases to the BASF and Yangtze Petrochemical Company (YPC) joint venture chemical facility under construction nearby.

**South East Asia** Economic growth was generally buoyant across the region but Singapore continued to be affected by the migration of electronics and other industries to lower cost countries in Asia. The outbreak of the SARS infection also curtailed travel and affected business activity. Economic trends in Thailand, Malaysia and Indonesia were favourable.

In aggregate, both turnover and adjusted operating profit increased across the region. Margins improved as a result of operational efficiency gains. Prices were held down by competitive pressures in Malaysia and Thailand but improved in Indonesia and the Philippines. Tonnage volumes increased in Malaysia as a result of sales to the steel industry and growing demand from the electronics assembly and food-freezing industries. Turnover was also boosted by a full year contribution from Nissan Industrial Oxygen Inc (NIOI) which became fully owned by BOC's associated company in Malaysia during September 2002.

Increased turnover in Thailand was based on better underlying demand as well as increased production. A new hydrogen and carbon monoxide (HyCO) plant began production at Map Ta Phut during 2003 and carbon dioxide capacity was doubled with the addition of a new 300 tonnes-a-day plant at Rayong to serve food and beverage customers.

Underlying trends were favourable in both Indonesia and the Philippines but results in the Philippines were adversely affected by the closure of a customer's plant.

**South Asia** Economic growth in India led to better sales of liquefied gases in the merchant market and sustained demand from the steel industry. A new 225 tonnes-a-day oxygen plant was commissioned in the last quarter of the year for the Tata Iron and Steel Company, BOC's principal tonnage customer in the region.

During the early part of 2004, a new plant should begin to supply beverage industry customers in Pakistan with carbon dioxide.

**South Pacific** Turnover and adjusted operating profit were slightly higher than a year ago despite adverse business trends in some Australian industries. The strengthening of the Australian dollar in 2003 had a negative impact on the important minerals sector, which responded by restructuring. There was also an adverse effect on the food industry. Volumes of liquefied gas sales in the merchant market were therefore lower.

The Australian steel industry was somewhat less affected and a low cost base enabled it to remain globally competitive. Tonnage volumes increased in 2003. New business has been obtained with BHP in New South Wales. In January 2003 BOC commenced supplying additional oxygen and nitrogen, following a process upgrade to BOC's Port Kembla facility.

Improved operational efficiencies helped to improve margins in the merchant market. Centralised plant operation was further extended during 2003 to the control of plants in New Zealand from an operations centre in Australia. Prices were raised in the merchant market and further increases will be required in 2004 to offset increased electricity costs that have resulted from the further rationalisation of generating capacity ownership.

**Process systems** During 2003 BOC continued to benefit from lower costs arising from the combination of its Process Plants business with Linde Engineering in the US to form the new company, Linde BOC Process Plants LLC, based in Tulsa, Oklahoma. This transaction was completed at the end of September 2002, making Linde Engineering the principal supplier of BOC's industrial gas plants worldwide with access to Linde's global technical capabilities in air separation, hydrogen production and other gas technologies.

2003 was another year of low demand for new industrial gas facilities. This was particularly so in the developed western economies and business opportunities were principally in the developing economies of the Far East. The rapid pace of expansion

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in the Chinese steel and chemical industries is expected to offer further opportunities to BOC next year.

**Water services** In October 2002, BOC acquired Environmental Management Corporation (EMC), a US water services company with the intention of using a similar business model to that of PGS in developing additional business with industrial customers.

EMC is a management company providing services for steam systems, cold and chilled water systems and wastewater treatment. Customers include small to medium sized municipalities and industrial customers, many of which are in the food manufacturing sector.

Turnover was on an increasing trend in 2003. Integration of the business was achieved smoothly but initial integration costs made the business unprofitable in this first period under BOC ownership.

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## Operating review (comparing 2003 with 2002) continued

**Industrial and Special Products (ISP)**

	2003 £ million	Change on 2002	Change on 2002 <sup>1</sup> (constant currency)
Turnover	1,751.2	+9%	+9%
Operating profit	238.2	+4%	+3%
Adjusted operating profit <sup>2</sup>	242.7	-2%	-3%

1. A reconciliation of results for 2002 at 2002 and at 2003 rates of exchange is shown on page 31.

2. A reconciliation of adjusted operating profit with operating profit is shown on page 32.

3. All comments below are on a constant currency basis.

Good business performances in most markets were offset by a disappointing result in the US. Market conditions remained depressed in the US and in the UK but there was an overall improvement elsewhere. Trends were particularly favourable in South Africa and in the south Pacific region during the first half of 2003 but the pace of growth slowed later in the year as a result of exchange rate movements, which affected exporting industries.

BOC's helium business continued to grow globally and so did the packaged chemicals business and the sales of medical gases. Margins improved in the liquefied petroleum gas (LPG) markets as a result of more rapid selling price adjustments to reflect changing input costs. In June 2003, BOC announced an agreement to obtain half the output from a new helium extraction facility to be constructed in Qatar. Deliveries from this new source are expected to begin in July 2005 and the location will assist in satisfying fast-growing demand in Asian markets.

Operating exceptional items in 2003 were for the completion of restructuring programmes, including those that were part of the programme announced in August 2001. Additionally, there were charges relating to the integration of the BOC and Air Liquide businesses in Japan to form Japan Air Gases.

**Europe** Turnover and adjusted operating profit increased in 2003 despite weak manufacturing activity in the key markets.

BOC has a strong market position in the mature UK manufacturing sector and achieved turnover growth by extending the range of products and services offered to its customers. Growth of adjusted operating profit was also assisted by productivity improvements, control of costs and favourable price trends. Sales to the medical sector increased because of service improvements and the introduction of new products notably lightweight portable cylinders for emergency applications. Sales of special gases including helium also increased and a new contract to supply the needs of Oxford Magnet Technology for medical imaging devices was announced during 2003. Sales of Sureflow hospitality gases and equipment improved, as did sales of refrigerant gases.

Economic growth in Ireland slowed during 2003. Despite improved hospitality product sales, turnover was almost unchanged and adjusted operating profit was marginally lower.

Increased turnover and adjusted operating profit in Poland were principally because of the addition of the business of Praxair Polska that took effect from February 2003. The integration with BOC's existing business in Poland and the introduction of common business systems has proceeded smoothly. Price increases in Poland were adequate to recover cost inflation during 2003.

**North America** In total, sales of gases in 2003 were similar to the previous year but sales of welding products were depressed. Weak conditions in the manufacturing economy across north America coupled with costs related to the implementation of a new business system in the US led to a sharp decline in adjusted operating profit.

Increased volumes of LPG and of special gases, including helium, together with modest price increases for most products were sufficient to offset lower volumes of industrial gases leading to a marginal improvement in gases turnover in the US.

Market conditions were also difficult in Canada but the acquisition of business from Air Products in Canada led to a higher turnover and adjusted operating profit.

**Latin America** There was an improvement in both turnover and adjusted operating profit across the region. This was generally based on trends that were favourable in terms of both volumes and selling prices.

Despite extended unrest and political uncertainty, there was a particularly strong performance in Venezuela. BOC's associated company based in Chile also achieved good growth. Business in Colombia was expanded during 2003 with the acquisition of an LPG business. Turnover from respiratory homecare products grew in Colombia, where a local homecare company was acquired during the year, as well as in Chile, where an acquisition was made in the previous year.



**Africa** Turnover and adjusted operating profit again increased significantly in 2003, as manufacturing activity was strong in South Africa. Although economic growth moderated later in the year as the rand strengthened, the increased international investment in manufacturing in South Africa continued to provide a firm base for sales of gases and welding products.

The mining industry also provided good business opportunities. There was a significant expansion of platinum mining and ferro-chrome was also in strong demand. Production of the Afrox Res-Q-Pak was further increased in 2003 as demand for the product continued to accelerate. Several of the major mining companies are issuing this device to their workforce to provide an emergency oxygen supply for those working underground.

Exports of Afrox welding products started the year well but growth was later curtailed by the strengthening of the rand, which began to reduce the competitive advantage. LPG sales increased and margins improved as a result of lower input costs.

Results from other countries in Africa were somewhat mixed with good performances in Namibia and Kenya offset by weakness in the Zambian copper industry. Overall, results were not significantly different in 2003.

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**Japan** The basis of accounting for BOC's business in Japan changed during 2003 as a result of a merger. Full details can be seen in the PGS section on page 34. On the respective bases used in each year, turnover and adjusted operating profit for ISP in Japan were lower in 2003.

**East Asia** Turnover increased but adjusted operating profit was marginally lower in 2003, with the full year benefit of acquisitions being reduced by the effect of industrial decline in the key market of Hong Kong and also by the increase in business overheads to support the future development of business in the region.

Two acquisitions affected business performance comparisons in 2003. Unique Gas and Petrochemicals Public Company Limited (UGP) was acquired by BOC's subsidiary in Thailand in May 2002 and BOC's associated company in Malaysia took full control of Nissan Industrial Oxygen Inc (NIOI) in September 2002. The integration of NIOI proceeded smoothly during 2003 and the business performed well. Although up on the previous year, results from UGP were adversely affected by sharply competitive conditions in the ammonia business but LPG, which is the other main product line for UGP, improved due to partial deregulation of end consumer prices.

While competition remained strong in industrial products, especially in Thailand and Malaysia, investments in special products facilities enabled this more profitable business to be expanded. Facilities for breaking bulk and repackaging refrigerant gases have already been installed in Hong Kong, the Philippines and Malaysia and a further facility will be built in Thailand during 2004.

**South Pacific** Although economic growth was less rapid in 2003 than it was in 2002, both turnover and adjusted operating profit improved. Increased turnover was largely a result of better prices rather than increased sales volume and firm prices were coupled with effective cost controls.

Good progress was made in developing the safety products business in 2003 with significant new business from major customers. The medical gas business also benefited from the introduction of new products. A web-based customer portal was launched enabling customers to carry out transactions as well as to track and pay their accounts over the Internet.

BOC's joint venture company, Elgas, a leading supplier of LPG in the eastern part of Australia, enjoyed a record year. Sharp increases in costs before the Iraq war were successfully recovered by rapid adjustments to selling prices. Although automobile gas is a minor part of the company's turnover, sales may be affected in the longer term by the Australian government's decision to remove the excise tax exemption for this application in the period 2008 to 2012.

After difficult conditions in 2002, better results were obtained from Papua New Guinea and the other Pacific islands during 2003.

**BOC Edwards**

	2003 £ million	Change on 2002	Change on 2002 <sup>1</sup> (constant currency)
Turnover	684.1	-1%	+4%
Operating profit	7.9	note 4a	note 4b
Adjusted operating profit <sup>2</sup>	18.5	-29%	-26%

1. A reconciliation of results for 2002 at 2002 and at 2003 rates of exchange is shown on page 31.

2. A reconciliation of adjusted operating profit with operating profit is shown on page 32.

3. All comments below are on a constant currency basis.

4a. Compares with a loss of £1.4 million in 2002

4b. Compares with a loss of £2.2 million in 2002

Operating exceptional items in 2003 were for the completion of restructuring programmes, including those that were part of the programme announced in August 2001. Additionally, there were charges relating to the integration of the BOC and Air Liquide businesses in Japan to form Japan Air Gases.

The semiconductor equipment downturn that affected most of 2002 continued throughout 2003. The second half of 2002 had benefited from some improvement in activity but this proved transient and no such upturn was repeated in 2003. Business was concentrated with those manufacturers with a specific investment strategy. This was predominantly for upgrades and expansions of existing facilities rather than new plants. Demand for general vacuum products from key customers in the chemicals, aerospace and automotive industries was also weaker in 2003. Turnover and adjusted operating profit were therefore lower.

The impact of these adverse business conditions was lessened by rationalising manufacturing facilities and by careful control of costs. Industrial vacuum and pressure products manufacturing in Philadelphia, Bolton and the Czech Republic was rationalised. Also in 2003, the size of a facility in Massachusetts was reduced to suit the lower volume of business available.

The pharmaceutical freeze-drying and packaging business suffered from delayed investment by pharmaceutical manufacturers during 2003 but order intake has since improved.

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Semiconductor gases turnover was essentially unchanged in 2003 as a whole, despite an improving trend in the second half. Additional volumes from new business were offset by pressure on prices as competition became more severe during the second year of the downturn. The focus was therefore on retaining market share, winning new business in Asia and on product development. Management believes that a major share of the bulk gas business has been secured for the new semiconductor fabrication plants being built in China. Production of nitrogen trifluoride has been increased and fluorine generators remain under evaluation by leading semiconductor manufacturers.

The basis of accounting for BOC's business in Japan changed during 2003 as a result of a merger. Full details can be seen in the PGS section on page 34. On the respective bases used in each year, turnover and adjusted operating profit for BOC Edwards in Japan increased in 2003.

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## Operating review (comparing 2003 with 2002) continued

Vacuum equipment volumes worldwide were slightly better in 2003 and much of the increase was derived from products for flat panel display manufacture. Management believes that BOC Edwards has achieved a leading share of this fast-growing market particularly in Taiwan and Korea. However, these pumps currently earn lower margins than semiconductor pumping systems. Although semiconductor equipment demand was weak in 2003, improved products were developed to strengthen BOC Edwards position in vacuum technology. These included single axis on-tool semiconductor pumps and a range of small dry pumps for the growing scientific equipment market.

The Kachina process tool component cleaning service grew in 2003 but the chemical management business suffered from the small number of new semiconductor plants being built. Cost levels were reduced to improve financial performance.

Contracts were won in Asia and Europe furthering a strategy to expand the range of value-added services to electronic manufacturers. These include gases management, chemicals supply, support services and materials logistics. Other developments included an improved offering of gases and vacuum systems for lithography and supercritical carbon dioxide cleaning technology.

**Afrox hospitals**

	<b>2003 £ million</b>	<b>Change on 2002</b>	<b>Change on 2002<sup>1</sup> (constant currency)</b>
Turnover	<b>353.4</b>	+36%	+16%
Operating profit	<b>46.1</b>	+55%	+31%
Adjusted operating profit <sup>2</sup>	<b>46.1</b>	+55%	+31%

1. A reconciliation of results for 2002 at 2002 and at 2003 rates of exchange is shown on page 31.

2. A reconciliation of adjusted operating profit with operating profit is shown on page 32.

3. All comments below are on a constant currency basis.

Although hospital occupancy rates increased only marginally, turnover and adjusted operating profit both increased significantly. This resulted from some minor acquisitions, positive price trends and a reduction in overhead costs. New facilities continued to be added to existing hospitals in order to widen the range of available services.

There was a significant change in the reimbursement system during 2003 and the trend is expected to continue in 2004. Insurance companies had previously paid private health care providers such as Afrox hospitals a fee for their services but this is changing to a risk reimbursement system. A fixed payment is made for each kind of procedure thus transferring some financial risk to the provider if complications arise.

Although acute care hospitals continued to make up the great majority of both turnover and adjusted operating profit, there were better results from the Lifecare chronic care business, from occupational health services and from the Direct Medicines pharmacy services business following restructuring to address more competitive market conditions.

In July 2003 African Oxygen Limited (Afox) announced that it was in the process of considering its strategic options with regard to its shareholding in Afrox Healthcare Limited. On 17 November 2003, Afrox announced that it had agreed to sell its entire holding in Afrox Healthcare Limited to a consortium of Black Economic Empowerment investors. The sale remains subject to certain conditions including clearance from the relevant competition and other regulatory authorities.

**Gist**

	<b>2003 £ million</b>	<b>Change on 2002</b>	<b>Change on 2002<sup>1</sup> (constant currency)</b>
Turnover	<b>291.8</b>	+10%	+10%
Operating profit	<b>29.2</b>	+15%	+13%
Adjusted operating profit <sup>2</sup>	<b>29.2</b>	+15%	+13%

1. A reconciliation of results for 2002 at 2002 and at 2003 rates of exchange is shown on page 31.

2. A reconciliation of adjusted operating profit with operating profit is shown on page 32.

3. All comments below are on a constant currency basis.

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Improved turnover reflects both new contracts and increased volumes with existing customers. The increase in adjusted operating profit is not only as a result of higher turnover but also because of a gain of some £4.1 million arising principally from the termination of operations for the Marks & Spencer General Merchandise business.

Gist continues to operate all of Marks & Spencer's chilled and ambient food distribution and services and remains its largest supply chain provider.

In 2003, a contract with Carlsberg-Tetley, a leading brewer, was expanded to manage the entire primary transport distribution business. A contract to manage the international inbound supply chain was also secured with New Look, the UK high street fashion retailer.

**Table of Contents****Operating review (comparing 2002 with 2001)****Group**

Turnover including the Group share of joint ventures and associates was £4,017.9 million in 2002, down three per cent compared with £4,159.2 million in 2001. Operating profit was £425.6 million, up one per cent compared with £422.3 million in 2001. After charging operating and non-operating exceptional items totalling £94.7 million and net interest and other financing items of £70.1 million, profit before tax was £335.3 million, down seven per cent compared with £362.2 million in 2001. Earnings per share were 41.4p, down ten per cent compared with 46.0p in 2001. Excluding the exceptional items, adjusted operating profit for the year was £500.1 million, adjusted profit before tax was £430.0 million and adjusted earnings per share were 55.9p.

Year ago comparisons are adversely affected by exchange rate movements, mainly for the South African rand and, in the closing months of the year, for the US dollar. If the results of a year ago had been translated at the rates applied to this year, turnover would have been reduced by £214.1 million. The corresponding reductions in operating profit and adjusted operating profit would have been £25.1 million and £27.6 million respectively. Adjusted profit before tax would have been £22.7 million less and adjusted earnings per share would have been reduced by 1.7p.

The table set out below summarises results reported both under UK GAAP and as adjusted. Comparisons with the previous year are shown both as reported in that year and on a constant currency basis.

	2002	2001	2001 (at 2002 exchange rates) <sup>1</sup>
Turnover including share of joint ventures and associates (£ million)	4,017.9	4,159.2	3,945.1
Operating profit (£ million)	425.6	422.3	397.2
Adjusted operating profit (£ million) <sup>2</sup>	500.1	530.6	503.0
Profit before tax (£ million)	335.3	362.2	340.7
Adjusted profit before tax (£ million) <sup>2</sup>	430.0	466.9	444.2
Earnings per share	41.4p	46.0p	44.4p
Adjusted earnings per share <sup>2</sup>	55.9p	57.5p	55.8p

1. A reconciliation of turnover, operating profit and adjusted operating profit for 2001 at 2001 and at 2002 rates of exchange is shown on page 31.

2. A reconciliation of adjusted results with UK GAAP results is shown on page 32 and in the profit and loss account on page 72. Exceptional items in 2002 included restructuring charges of £47.2 million and a £21.3 million charge relating to the closure of facilities in connection with the combination of BOC Process Plants with Linde Engineering in the US. An exceptional charge of £21.2 million was made to write down the value of OSK, BOC's gases business in Japan, in advance of the then proposed merger of OSK with part of Air Liquide Japan.

Exceptional items in 2001 included restructuring charges of £35.8 million, a charge of £24.5 million for the write-down and impairment of assets, a charge of £21.0 million for the write-down of unproductive assets identified for disposal and a charge of £16.7 million for a prior period amendment to pension plan benefits.

Adjusted return on capital employed for the year to 30 September 2002 was 12.3 per cent, after six successive quarters of improvement. Return on capital employed for the year to 30 September 2002 was 10.5 per cent. Free cash flow (after interest, tax, dividends and capital spending but before acquisitions) remained positive and was £166.5 million in 2002. Net cash outflow, after acquisitions, disposals and other investing activities, and including exceptional cash items, was £120.3 million in 2002. A reconciliation of these measures is shown on page 32.

A first interim dividend for 2002 of 15.5p per share was paid in February 2002 and a second interim dividend of 22.5p per share was paid in August 2002. In aggregate this was a 2.7 per cent increase over the annual dividend of the previous year.

Capital expenditure by subsidiaries (including interest capitalised) was £354.3 million in 2002, compared with £352.6 million in 2001. Capital expenditure by joint ventures and associates was £74.2 million in 2002, of which the BOC share was £34.5 million. Equivalent expenditure in 2001 was £109.7 million, of which the BOC share was £53.3 million. The Group also made acquisitions of businesses of £207.3 million in 2002 and proceeds from disposals were £10.6 million. Equivalent items in 2001 were £145.9 million and £2.7 million respectively.

**Process Gas Solutions (PGS)**

Change

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	2002 £ million	Change on 2001	on 2001 <sup>1</sup> (constant currency)
Turnover	1,200.6	+1%	+4%
Operating profit	161.2	+55%	+61%
Adjusted operating profit <sup>2</sup>	185.2	+18%	+22%

1. A reconciliation of results for 2001 at 2001 and at 2002 rates of exchange is shown on page 31.
2. A reconciliation of adjusted operating profit with operating profit is shown on page 32.
3. All comments below are on a constant currency basis.

In addition to the revenues added by new plants coming into production and firm pricing trends, operational efficiency gains were a key factor behind the adjusted operating profit increase. Towards the end of 2002, cost savings were realised from the closure of facilities in connection with the combination of BOC's Process Plants business with Linde Engineering in the US. Costs were also reduced as a result of better delivery scheduling and remote plant operation. Operational service centres were already established in the UK, the US and Australia. Management then believed that a further 70 plants could benefit from remote operation during the next 18 months and new links were being established to bring Asian plants into the network.

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### Operating review (comparing 2002 with 2001) continued

New plants were commissioned for OneSteel at Whyalla in South Australia in November 2001, a hydrogen plant for Huntsman on Teesside in the UK during January 2002, an air separation unit for WCI Steel in Ohio in May 2002 and another at Midland, North Carolina in June 2002. These further strengthened BOC's established base in the metals sector and highlighted a growing commitment to the chemicals and oil sectors.

Economic uncertainties reduced the number of investment projects receiving authorisation from customers in 2002. However, despite the somewhat dull market conditions BOC Process Systems was able to win new business by offering integrated solutions that added value for process industry customers.

Operating exceptional items in 2002 were mainly for the write-down of assets in the OSK business in Japan based on valuations ahead of the merger with Air Liquide and further restructuring costs as part of the programme announced in August 2001.

Operating exceptional items in 2001 related to the business initiative programme announced in August 2001 with the objective of releasing cash tied up in unproductive assets and improving cash generation.

**Europe** Turnover increased in the UK but adjusted operating profit was marginally lower despite success in reducing overhead costs. The increase in turnover was due to additional sales from the plant commissioned in January 2002 to supply hydrogen to Huntsman's chemical plant on Teesside but this was offset by the effect of weak manufacturing output in the UK. This affected sales volumes and prices in most sectors as some customers closed plants in the UK and moved production to lower cost areas. Adjusted operating profit was also depressed by a temporary shutdown of a customer's steel furnace, leading to less efficient operation of BOC's air separation plant in south Wales. Another steel customer went into receivership towards the end of 2002 and a provision of £3.6 million was made for a bad debt and to write down the value of BOC's plant supplying a facility that has closed.

In July BOC acquired pipeline assets serving customers on the Teesside chemical complex. This gave BOC more direct contact with its customers in this important area.

Although turnover in Ireland was similar to the previous year, adjusted operating profit increased as a result of success in reducing costs. Adjusted operating profit also increased in Poland for the same reason and because a bad debt provision depressed adjusted operating profit in 2001.

**North America** Overall turnover increased slightly but growth was restrained by generally weak economic conditions in the US and by lower power and fuel costs leading to the reduction or elimination of surcharges. Some increases in tonnage volumes arising from the recovery of steel output in the US and increased sales of carbon dioxide to the food and beverage sector were offset by generally lower demand for liquefied gases in the merchant market.

Adjusted operating profit grew faster than sales as a result of firmer prices and cost savings, which more than made up for some bad debt provisions for customers in liquidation.

New plant and acquisitions that affected the comparison with a year ago included a replacement plant commissioned in May 2002 to supply WCI Steel in Ohio, a plant commissioned in September 2002 at Midland, North Carolina, and a plant supplying Vitrotex in Texas that started up in July 2002. Assets purchased from Messer increased BOC's capacity to supply the growing market for carbon dioxide in the US.

**Latin America** Despite continuing political uncertainty, BOC's business in Venezuela achieved significantly better adjusted operating profit in 2002. Demand from the glass industry was strong and sales of both nitrogen and carbon dioxide to the food and beverage sector also increased. More efficient plant operation coupled with control of overhead costs made an important contribution to adjusted operating profit growth in 2002.

Adjusted operating profit in Colombia was also better as a result of improved operating efficiency coupled with better activity in the steel industry. Indura, BOC's associate based in Chile, also achieved a better adjusted operating profit as a result of new business in both Chile and in Argentina. Selling price increases that exceeded inflation also made an important contribution to adjusted operating profit growth in Chile.

BOC's associated company in Mexico supplying a Pemex company with high-pressure nitrogen continued to demonstrate the value of re-pressurisation to enhance oil recovery. A number of equipment problems that emerged after commissioning were investigated and corrective action was taken in 2002. This had no significant impact on the adjusted operating profit for the year. BOC increased its share of the company from 30 per cent to 35 per cent in early 2002.

**Africa** Buoyant conditions in the South African manufacturing economy made it possible to achieve a significant increase in turnover. Together with strict cost controls, this drove a still greater increase in adjusted operating profit. Demand from steel industry customers was high and sales to other sectors were expanded. New business was obtained in the pulp and paper sector and an oxygen plant was commissioned to satisfy a supply scheme contract. Price increases were sufficient to offset inflation in 2002.



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**Japan** Turnover and adjusted operating profit were lower in 2002, reflecting continued weakness in the Japanese economy, which affected both gas equipment sales and demand for liquefied gases. The impact on adjusted operating profit was limited by operational cost savings. During 2002 BOC's under-utilised air separation unit at Himeji was closed and BOC began to supply its customers by purchasing products from another gas producer. Despite the weak economic conditions, three new on-site generators were commissioned in 2002 and a further one is due to be completed in 2003.

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**North Asia** Growth of sales revenues in Korea was limited by weak economic conditions but adjusted operating profit was significantly better as a result of operational and overhead cost savings and improved plant efficiency.

Rapid economic growth attracted exceptionally high levels of foreign direct investment into China during 2002. A number of manufacturers began to expand in China at the expense of existing production in other parts of the world. This was accompanied by heavy expenditure on local infrastructure and these factors combined to create a particularly favourable environment for BOC's business in China. Turnover increased significantly and adjusted operating profit nearly doubled. Existing joint ventures performed strongly partly in response to rising steel production, which boosted the performance of BOC's venture supplying the Taiyuan Iron and Steel Company in north China. At the same time BOC took the opportunity to withdraw from underperforming joint ventures and succeeded in improving the performance of others. New liquefaction capacity was added to supply the growing merchant market in south China.

In April 2002, BOC established a joint venture in Nanjing with Yangtze Petrochemical Corporation (YPC), which is a subsidiary of Sinopec, China's leading petrochemical company. BOC purchased existing air separation assets with effect from May 2002 and committed to installing a new air separation plant. This gave BOC a strategic position as a key supplier in the Nanjing area, which is being developed through foreign investment as a leading centre for chemical production in China. BOC's joint venture is to supply industrial gases to a new BASF and YPC joint venture plant now under construction and scheduled to begin production in 2004. In order to take advantage of the new business opportunities presented by the rapid growth of investment in China, BOC Process Systems designated China as a new and separate marketing zone during 2002.

Taiwan was one of the main regions to be affected by the diversion of investment into mainland China during 2002. Manufacturing growth was weak, leading to a more competitive environment in the gases business and some pressure on prices. In response to these structural changes in the Taiwanese economy, a cost reduction programme was initiated during 2002. Activity related to the electronics industry increased somewhat during the second half of 2002.

Business conditions in Hong Kong remained weak in 2002 as some customers also prepared to relocate production to lower cost areas.

**South East Asia** Economic growth in the region was led by Thailand, supported by somewhat slower growth in Malaysia. Singapore suffered from the slowdown in the electronics sector during 2002. Economic conditions in the Philippines and Indonesia remained difficult.

There was some improvement in demand from the steel sector and petrochemical activity remained stable. Direct foreign investment, which had supported growth previously, was diminished as more new investment was directed towards north Asia.

Improved turnover and adjusted operating profit were driven mainly by increased merchant sales in Thailand particularly in the food sector. During 2002 BOC was able to supply its customers with food freezing equipment constructed to BOC standards by a manufacturer in Thailand.

A new hydrogen and carbon monoxide (HyCO) plant was under construction at Map Ta Phut in Thailand.

BOC's associated company in Malaysia acquired Nissan Industrial Oxygen Inc (NIOI) during 2002. The acquisition began with the purchase of 35.6 per cent of the company in March 2002. Following a tender offer, 100 per cent ownership was achieved in September 2002. NIOI has significant business in the glass sector. BOC's associated company in Singapore acquired part of Messer's merchant industrial gases business there in late September 2002.

**South Asia** BOC's line of business structure was not then fully implemented in this region. The following commentary therefore applies to both the Process Gas Solutions business and to the smaller element of Industrial and Special Products business in the region.

During 2002, concerns about security and political stability continued to limit foreign direct investment. Business opportunities were therefore limited to those generated by the local economies.

In India, asset disposals contributed towards a sharp increase in adjusted operating profit but there was also a significant improvement in underlying sales and adjusted operating profit. A new supply scheme to provide industrial gases to Tata Iron and Steel was won and the new plant was constructed in 2003.

Sales and adjusted operating profits also increased in Bangladesh and Pakistan. New carbon dioxide capacity was added in 2003 to satisfy growing demand from the beverage industry in Pakistan.

**South Pacific** Recent investments in new plants were reflected in higher sales. The plant commissioned to supply BP at Brisbane came into production during 2001 and contributed for a full year in 2002. A plant to supply OneSteel at Whyalla in South Australia began production early in 2002. Increased customer demand following a process change resulted in increased sales from the plant at Port Kembla that came into production during 1999. Demand for carbon dioxide used in the food and beverage industries grew and increased awareness of food safety issues placed additional emphasis on product quality. Plant investments made during 2001 provided additional product supply security in 2002.

Adjusted operating profit increased significantly faster than sales as a result of improved operating efficiency and control of overhead costs. Plant reliability was increased and 12 of the key production plants in Australia became controlled from a central operations centre. In South Australia, production from the new plant at Whyalla commissioned in November 2001 allowed savings to be achieved through the closure of an older and less efficient plant at Adelaide. Price increases in the merchant markets for liquefied gases were generally slightly below inflation but the shortfall was more than offset by operational efficiencies and

overhead cost reductions.

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## Operating review (comparing 2002 with 2001) continued

**Process Plants** In March 2002, BOC reached a master agreement to combine its Process Plants business with Linde Engineering in the US to form a new company, Linde BOC Process Plants LLC, based in Tulsa, Oklahoma. The transaction was completed at the end of September 2002 and makes Linde Engineering the principal supplier of BOC's industrial gas plants worldwide with access to Linde's global technical capabilities in air separation, hydrogen production and other gas technologies.

Spending on new air separation plants remained generally depressed in 2002 but the new arrangement with Linde allowed a significant reduction of unrecovered costs in the second half of the year as the agreement was implemented. Costs were also reduced by the closure of BOC Process Plants' UK manufacturing facility at Edmonton in north London.

BOC's Cryostar turbine and compressor business based in France produced significantly better adjusted operating profit in 2002 following diversification to reduce its former dependence on investments in new air separation projects. Sales of equipment to process liquefied natural gas (LNG) on board tankers were significantly increased.

**Industrial and Special Products (ISP)**

	2002 £ million	Change on 2001	Change on 2001 <sup>1</sup> (constant currency)
Turnover	1,605.3	+2%	+7%
Operating profit	229.3	+1%	+6%
Adjusted operating profit <sup>2</sup>	248.0	Nil	+5%

1. A reconciliation of results for 2001 at 2001 and at 2002 rates of exchange is shown on page 31.

2. A reconciliation of adjusted operating profit with operating profit is shown on page 32.

3. All comments below are on a constant currency basis.

Weak manufacturing activity in the key markets of the US and the UK affected sales of industrial products but there was growth in both South Africa and in the south Pacific region. Sales of special products, medical gases as well as hospitality products and services increased in all markets. Margins improved mainly as a result of increased productivity following restructuring.

Operating exceptional items in 2002 were mainly for the write-down of assets in the OSK business in Japan based on valuations ahead of the merger with Air Liquide and further restructuring costs as part of the programme announced in August 2001.

Operating exceptional items in 2001 related to the business initiative programme announced in August 2001 with the objective of releasing cash tied up in unproductive assets and improving cash generation.

**Europe** A modest improvement in UK turnover was matched by a similar increase in adjusted operating profit. Sales of industrial products declined in line with falling manufacturing output but this was offset by increased sales of special and medical gases and the growth of BOC's Sureflow hospitality gases and cellar service business. A lightweight medical oxygen cylinder with integral regulator has proved popular for portable applications such as in the emergency services. A new arrangement has been made with an equipment wholesaler to improve sales of refrigerant gases to the contractor market and a refrigerant filling plant in the UK is being extended to include additional production and storage capacity.

Sales and adjusted operating profit also increased in Ireland and BOC's commercial systems accommodated the change to the new euro currency without problems.

Although ISP was a minor part of BOC's business in Poland during 2002, there was a significant improvement in sales and adjusted operating profit. In September BOC announced that it had agreed to acquire Praxair's industrial gases business in Poland. This transaction then remained subject to approval by the competition authority in Poland. This approval was subsequently granted in 2003.

**North America** Turnover increased only slightly as the trend in overall sales volumes was essentially flat and price increases for most products were modest. Weakness in the manufacturing sector was reflected in lower sales of welding and cutting equipment and consumable products in particular. In such conditions and with the initial financial impact of installing a new enterprise resource and planning system during the year, adjusted operating profit in north America decreased despite successful cost reduction programmes.

Helium prices were an exception to the generally slow trend and continued to rise more rapidly as higher input costs were recovered in selling prices. BOC invested in new purification and liquefaction capacity in the US during 2002 to support its worldwide helium business.

During the year a new plant was opened to supply special gases to customers on the Gulf coast and a range of gas apparatus was launched under the Airco brand name. These products were sold through distributors during 2003. During 2002, BOC

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continued its roll-out of a medical gas cylinder with an integrated regulator.

Although economic conditions in Canada were similar to those in the US, there was a greater increase in sales. Two acquisitions, Technogas and Matheson Gas Products Canada Inc, were successfully integrated with the existing business in Canada in 2002. The Matheson acquisition added important special products capability to BOC's product range in Canada.

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**Latin America** Turnover and adjusted operating profit increased significantly in each of the key markets. While export-related heavy industry prospered, general manufacturing remained weak in Venezuela but growth was driven by increased sales of special products and carbon dioxide. While sales of special products, including refrigerants and ammonia, also increased in Colombia, the main source of growth was the medical gas and home health care markets in an otherwise difficult industrial economy.

Indura, BOC's associated company based in Chile, benefited from a stable political environment that served to insulate the Chilean economy from heavy devaluations in neighbouring Argentina and Brazil. This led to a firm pricing environment that allowed the benefits of cost controls to be realised.

**Africa** Turnover and adjusted operating profit increased significantly in 2002 as a result of a sustained resurgence in South African manufacturing. This was reflected in the growth of sales volumes in the core cutting and welding business for the first time in five years. New business in packaged chemicals and other special gases further increased the growth of turnover as new propellants and refrigerants were added to the product range. Adjusted operating profit also increased significantly despite making additional provisions for bad debts.

Sales volumes of liquefied petroleum gas grew slowly but higher input costs were successfully recovered in selling prices. Hospitality products and services, and medical gases were also less important sources of sales growth in 2002. However, a recently introduced rescue pack providing a portable oxygen supply for mineworkers continued to generate strong demand, which exceeded production capacity.

Exports of cutting and welding equipment from South Africa principally to other African countries increased strongly in 2002.

**Japan** During 2002 difficult economic conditions were reflected in essentially unchanged turnover and a decline in adjusted operating profit. This was despite good growth in gases for applications in lasers, medical gases and measurement equipment.

**East Asia** Turnover and adjusted operating profit both increased but mainly as a result of acquisitions. Economic growth in Taiwan and Singapore was curtailed by their dependence on various aspects of electronics manufacturing, which remained depressed in 2002, particularly during the first half. Weak demand also restrained price increases, which were generally below the level of inflation.

The chief source of turnover and adjusted operating profit growth in the region during 2002 was the acquisition of Unique Gas and Petrochemicals Public Company Limited (UGP) in Thailand in May. UGP is a leading supplier of liquefied petroleum gas and packaged ammonia.

BOC's associated company in Malaysia acquired 35.6 per cent of the gases company Nissan Industrial Oxygen Inc in March 2002 and, following a tender offer, the holding was increased to 100 per cent in September 2002 providing a wider platform for growth in 2003.

**South Pacific** Strong economic and manufacturing growth supported increased sales and adjusted operating profit in the key markets of Australia and New Zealand. The underlying growth of adjusted operating profit was ahead of the sales increase. Civil turmoil and political uncertainty curtailed growth in the Pacific islands.

Increased manufacturing activity particularly in Australia but also in New Zealand supported growth in every part of BOC's business. Mining, manufacturing for export and infrastructure projects were particularly strong sectors. Prices remained firm and overhead cost reduction, coupled with rationalisation of the supply chain for welding and safety products, helped to widen margins.

The sales and adjusted operating profit of BOC's associated company, Elgas, which supplies liquefied petroleum gas (LPG) in south-eastern Australia, increased sharply. Imported LPG prices remained stable and a relatively cold winter encouraged sales in the home energy sector. The use of LPG as a vehicle fuel declined.

**BOC Edwards**

	2002 £ million	Change on 2001	Change on 2001 <sup>1</sup> (constant currency)
Turnover	688.2	-21%	-19%
Operating profit	(1.4)	-102%	-102%
Adjusted operating profit <sup>2</sup>	26.1	-67%	-66%

1. A reconciliation of results for 2001 at 2001 and at 2002 rates of exchange is shown on page 31.

2. A reconciliation of adjusted operating profit with operating profit is shown on page 32.

3. All comments below are on a constant currency basis.

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Despite the reduction in adjusted operating profit for the year, BOC Edwards remained profitable in each quarter and was strongly cash generative during 2002.

Operating exceptional items in 2002 were mainly for the write-down of assets in the OSK business in Japan based on valuations ahead of the merger with Air Liquide and further restructuring costs as part of the programme announced in August 2001. Operating exceptional items in 2001 related to the business initiative programme announced in August 2001 with the objective of releasing cash tied up in unproductive assets and improving cash generation.

The severe reduction in capital expenditure by semiconductor manufacturers that began in the second half of 2001 continued into 2002. Although there was some revival of demand for semiconductor equipment in the second half of 2002, the rate of order intake declined at the end of the year.

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## Operating review (comparing 2002 with 2001) continued

Those Asian markets that were the basis of the mid-year revival did not sustain the earlier investment trends but opportunities were presented by a number of customers investing in China. In August 2002 BOC formed a joint venture with Lienhwa Corporation of Taiwan to help to take advantage of new business opportunities presented by Taiwanese electronics companies investing in China. The venture combined the marketing capabilities of Lienhwa with BOC's existing resources in China. It delivered three new gas supply contracts to supply semiconductor fabrication plants, including those under construction by Belling and HJT in the Shanghai area. BOC Edwards also won an order to supply a new plant in Singapore.

Apart from the semiconductor industry, some other vacuum equipment markets such as aerospace and chemicals also became more difficult in 2002. The pharmaceutical and biotechnology markets remained buoyant and BOC Edwards was notably successful in increasing sales of pharmaceutical drying and packaging systems.

Gases sales were also affected by weak conditions in the semiconductor industry worldwide, which led to reduced plant utilisation and closures by some customers. The overall profit impact of lost revenue on adjusted operating profit was offset by increased productivity. In 2002 a programme to rationalise production facilities for electronic materials was completed. This involved the closure of electronic gases facilities at some sites, including Immingham in the UK and part of the facility at Research Triangle Park in North Carolina, in order to concentrate global production into fewer locations.

The capacity to produce nitrogen trifluoride at BOC's plant in South Africa was increased during 2002 to reach 50 tonnes a year. This product, which is used for cleaning semiconductor process tool chambers, is undergoing qualification trials with major customers. It will be possible to raise output further if it is justified by demand.

The pause in semiconductor capacity expansion did not prevent a drive by manufacturers to invest in projects designed to reduce unit costs. Typically this included outsourcing of major sub-systems, materials and services. BOC Edwards participated in this movement through the development of several important new products, through its close relationships with original equipment manufacturers and by acquisitions in new business areas. During 2002 the Kachina process tool component cleaning business was expanded by opening new facilities to service customers in the US (Oregon), France and China.

In 2002 BOC Edwards acquired the industrial vacuum and pressure businesses of the Smiths Group. This acquisition expanded BOC Edwards' existing general vacuum product range into new markets and added new high volume pumping technology to the portfolio. Typical customers are in the metallurgy, water treatment, food, power and chemical industries. The integration of the business was completed smoothly and it was operating profitably by the end of the year.

The most significant acquisition was of Seiko Instruments' turbomolecular pumps business based in Japan, which was completed in March 2002. Management believes that the addition of Seiko turbomolecular pumps to the BOC Edwards range of products should enhance the opportunity to develop vacuum sub-systems to satisfy the growing trend towards on-tool pumping.

The acquisitions of Hydromatix and Semco were also completed in January and April 2002 respectively with the intention of positioning BOC Edwards in those market segments that are expected to grow most rapidly. These companies now form part of BOC Edwards' Chemical Management Division.

Hydromatix is based in the US and helps companies in the surface finishing industry to recycle rinse waters with a minimum amount of waste, allowing them to cut discharges. Customers are involved in plating, printed circuit boards and galvanising, as well as higher-technology fields such as disc and semiconductor production.

Semco designs and manufactures high efficiency, process-critical, liquid chemical blend, delivery and collection systems used in rapidly growing wet deposition processes, such as copper plating, a common application in the semiconductor manufacturing industry.



**Table of Contents****Afrox hospitals**

	2002 £ million	Change on 2001	Change on 2001 <sup>1</sup> (constant currency)
Turnover	259.0	-10%	+23%
Operating profit	29.7	-8%	+25%
Adjusted operating profit <sup>2</sup>	29.7	-8%	+25%

1. A reconciliation of results for 2001 at 2001 and at 2002 rates of exchange is shown on page 31.
2. A reconciliation of adjusted operating profit with operating profit is shown on page 32.
3. All comments below are on a constant currency basis.

The acquisitions of the Amahosp and Wilgers hospital groups in the first half of 2002 added to turnover and more significantly to adjusted operating profit as integration benefits were realised. The acquisitions added approximately 1,000 acute care beds to Afrox hospitals' existing capacity. Existing hospital facilities were also enhanced during 2002 through investment in new services such as renal dialysis, physical and mental rehabilitation, pathology and radiography.

Acute care hospitals accounted for the majority of both turnover and adjusted operating profit. The remainder was made up of health care services including chronic care, occupational health and pharmacy services. During 2002 there was a downturn in the Afrox direct medicines business that facilitates the supply of chronic medication to patients by post. This followed increased competition as health care funding organisations set up their own supply mechanisms at the same time as limiting reimbursement for patients.

Turnover of nursing staff continued to be a problem in South Africa as trained nurses were lured overseas by higher pay. Afrox responded by increasing spending on training activities to ensure that sufficient well-qualified staff were available.

**Gist**

	2002 £ million	Change on 2001 <sup>1</sup>
Turnover	264.8	+14%
Operating profit	25.5	+24%
Adjusted operating profit <sup>2</sup>	25.5	+20%

1. A reconciliation of results for 2001 at 2001 and at 2002 rates of exchange is shown on page 31.
2. A reconciliation of adjusted operating profit with operating profit is shown on page 32.
3. All comments below are on a constant currency basis.

Despite competitive conditions in the logistics market, Gist achieved strong results with improved margins and some notable business wins. Turnover increased by 14 per cent to £264.8 million and adjusted operating profit rose 20 per cent to £25.5 million.

Operating supply chains for customers remained at the core of the business and improved adjusted operating profit reflects both new contracts and increased volume with existing customers. Gist now handles all of Marks & Spencer's chilled and ambient food distribution and services as well as the entire warehouse and distribution operations for Budgens, another major UK retailer.

E-business continued to grow steadily and offered a number of opportunities with commercial promise to order on-line products and services. Gist provided e-fulfilment warehousing operations for Ocado, an on-line grocery shopping and home delivery company established in partnership with the Waitrose supermarket chain, for Marks & Spencer's Lunch to Go operation and for Blueheath, the on-line wholesaler.

With increasing emphasis on global supply chains, Gist's experience, skills and systems capabilities were already being used to manage complex international supply chains, such as managing supplies for BOC Edwards' global manufacturing operations. Gist also provided stand-alone consulting services to a range of customers.



**Table of Contents****Financial review****Post balance sheet events**

An action was filed against The BOC Group Cash Balance Retirement Plan (the Plan) in the US. At the time of the preliminary announcement of the Group's results on 13 November 2003, no provision was made in respect of this case, as at that time the outcome of the litigation was uncertain and the amount of any loss could not be reliably estimated. Subsequently the parties have reached an agreement in principle to settle at US\$69 million, subject to approval by the court at a fairness hearing. Under UK accounting principles (FRS17) this amount has been recognised as a charge in the profit and loss account of the Group. It has been shown as an exceptional item. The settlement will be paid out of Plan assets. Further information is given on page 50.

On 17 November 2003, the Group's South African subsidiary company African Oxygen Limited announced that it had agreed to sell its entire holding in Afrox Healthcare Limited. The sale remains subject to certain conditions, including clearance from the relevant competition and other regulatory authorities.

**Corporate transactions**

Group expenditure on acquisitions of businesses was £135.5 million (2002: £207.3 million). The main acquisitions during 2003 were Environmental Management Corporation, a privately held US water services company, Praxair's Polish gases business and the Canadian packaged gas and related welding equipment business of Air Products. During 2002 the main acquisitions were the turbomolecular pumps business of Seiko Instruments Inc, the vacuum and pressure business of the Smiths Group and Unique Gas and Petrochemicals Public Company Limited in Thailand.

In September 2002 BOC completed the merger of its Process Plants operations with Linde Engineering in the US to form a new company, Linde BOC Process Plants LLC. The costs of £21.3 million for closing BOC's Process Plants business were charged as an exceptional item in 2002. In September 2002 BOC and Air Liquide announced a conditional agreement to merge their industrial and medical gases businesses in Japan to form Japan Air Gases Limited. Valuations undertaken as part of the business combination resulted in an exceptional write down of £21.2 million in 2002. The combination took effect in January 2003 and BOC has accounted for its 45 per cent share of Japan Air Gases Limited as a joint venture from that date.

**Restructuring**

Costs of restructuring programmes amounting to £23.8 million have been charged in 2003. This includes £5.0 million related to the business initiative announced in August 2001 to divest some assets and to restructure and improve returns in the businesses being retained. These programmes are now completed and have resulted in some 1,600 job losses. Further restructuring opportunities identified resulted in an additional cost of £10.5 million charged this year and these programmes are also completed. Management expects that savings from restructuring programmes will amount to over £50 million a year. Costs of £8.3 million were also incurred relating to the integration of the BOC gases business and part of the Air Liquide business in Japan to form Japan Air Gases Limited.

In 2002 £47.2 million was charged for restructuring of which £34.4 million related to the business initiative announced in August 2001 and £12.8 million related to further restructuring opportunities. Both of these programmes continued into 2003 and were completed in 2003.

**Financial indicators**

The trends of financial indicators which, taken together, are a measure of the performance and efficiency of the Group's finance and tax structures, are:

	2003	2002	2001
Interest cover (times) <sup>1</sup>	4.6	4.1	3.4
Adjusted interest cover (times) <sup>2</sup>	5.3	4.9	4.3
Net debt/equity (%)	71.5	73.6	57.2
Net debt/capital employed (%)	36.9	36.9	32.0
Average cost of net borrowings (%)	5.6	6.2	7.2

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Group tax rate (%)	<b>27.4</b>	31.7	28.9
Adjusted Group tax rate (%) <sup>3</sup>	<b>29.0</b>	30.0	32.5

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Adjusted means excluding exceptional items.

1. Interest on net debt covered by operating profit.
2. Interest on net debt covered by adjusted operating profit.
3. The adjusted tax charge expressed as a percentage of adjusted profit before tax.

The ratios are commented on below in the appropriate section.

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### **Financing**

The Group has access to a range of funding. Debt finance is raised by issuing bonds, commercial paper, other obligations to investors and through borrowings from banks.

As well as medium and long-term borrowings, the Group maintains short-term borrowings, principally in the form of commercial paper and bank borrowings. The Group maintains US\$450 million (£271 million) of committed multi-currency facilities with a group of relationship banks. These facilities mature in 2008 and provide back-up for the issue of commercial paper as well as general liquidity for the Group. Additional committed facilities are maintained by the principal operating units in the Group.

Overall, net debt increased by £42.5 million as a result of a net cash inflow of £6.3 million, a £3.7 million inflow from the issue of shares, an outflow of £31.8 million for the impact of business acquisitions and disposals and £20.7 million for the effect of exchange rate movements. In 2002, net debt increased by £53.5 million as a result of a net cash outflow of £120.3 million offset by £25.0 million inflow from the issue of shares and £41.8 million for the effect of exchange rate and other movements. During the year, borrowings by the parent company increased reflecting the company's effort to centralise its longer term funding needs.

The gearing ratio (net debt including finance leases as a percentage of capital employed) was 36.9 per cent in 2003 compared with 36.9 per cent in 2002 and 32.0 per cent in 2001. The decline in the value of pension fund assets following the fall in world equity markets accounted for some three per cent of the increase in 2002. The 2003 year end net debt/equity ratio was 71.5 per cent, compared with 73.6 per cent in 2002 and 57.2 per cent in 2001.

The Group has access to a diverse range of debt finance including commercial paper, public bonds and bank borrowings which, it believes, will be available to meet long-term financing needs. The Group has sufficient facilities to cover likely borrowing needs. Management anticipates that capital expenditure in 2004 will be at a slightly higher level than in 2003 and will be covered by cash inflow from operating activities.

### **Management of financial risks**

The board of directors sets the treasury policies and objectives of the Group which include controls over the procedures used to manage currency, interest rate and credit risk. The approach to managing risk is set out below. This approach is expected to continue during the next financial year. On a day-to-day basis, Group treasury carries out these policies, with regular review meetings with the Group finance director. Specific and significant activities need approval from the finance committee, which includes any two directors of the company.

The Group does not undertake any trading activity in financial instruments nor does it enter into any leveraged derivative transactions.

**Currency risk** The Group faces currency risk principally on its net assets, most of which are in currencies other than sterling. Currency movements can therefore have a significant effect on the Group's balance sheet when translating these foreign currency assets into sterling. In order to reduce this effect the Group manages its borrowings, where practicable and cost effective, to hedge its foreign currency assets.

Where possible, hedging is done using direct borrowings in the same currency as the assets being hedged or through the use of other hedging methods such as currency swaps. Group borrowings are currently held in a wide range of currencies and, after swaps, 81 per cent of net debt (2002: 86 per cent) is denominated in the principal currencies affecting the Group: US dollars, Australian dollars, Japanese yen, South African rand and sterling. The aggregate of the notional principal values of currency swaps was £474.7 million (2002: £360.7 million) spread over a range of currencies. The fair value of such swaps is included in note 21 b) i) to the financial statements.

The balance sheets of overseas operations are translated into sterling at the closing rates of exchange for the year and any exchange difference is dealt with as a movement in reserves. This is explained more fully in the accounting policy note on page 77. The profit and loss accounts of overseas businesses are translated at average rates of exchange and this translation impact directly affects the profit and loss account of the Group.

The Group manages its currency flows to minimise currency transaction exchange risk and forward contracts are used as appropriate to hedge net currency flows and selected individual transactions. The Group's foreign exchange cover is mainly managed in the UK, Australia, Japan and South Africa. The UK manages the cover for exposures on net trade flows of the Group's companies in the US and certain other countries. The aggregate principal amount of forward cover outstanding at 30 September 2003 amounted to £173.8 million (2002: £133.9 million).



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## Financial review continued

**Interest rate risk** At 30 September 2003, the Group's net debt position after interest rate hedging activity included a net exposure of £436.3 million (2002: £497.3 million) to floating interest rates. Based on the Group's 2003 year end level and composition of net debt, an increase in average interest rates of one per cent per annum would result in a decrease in future earnings, before tax, of £4.4 million per annum (2002: £5.0 million).

In order to manage interest rate risk the Group maintains both floating rate and fixed rate debt. At 30 September 2003, there was a 32:68 ratio (2002: 38:62) between floating and fixed rate net debt. Underlying borrowings are arranged on both a fixed rate and a floating rate basis and, where appropriate, the Group uses interest rate swaps to vary this mix and to manage the Group's interest rate exposure.

At 30 September 2003, the aggregate of the notional principal values of swap agreements which affect the floating rate/fixed rate mix was £417.6 million (2002: £420.0 million). The fair value of such swaps is included in note 21 b) i) to the financial statements.

**Foreign exchange risk** At 30 September 2003, the Group had outstanding forward exchange contracts totalling £173.8 million (2002: £133.9 million) in respect of its actual and forecast transaction exposures. The fair value of these contracts at 30 September 2003 amounted to a gain of £5.8 million (2002: a gain of £4.9 million). A ten per cent appreciation of sterling would increase the fair value of these contracts by £13.7 million (2002: £7.4 million).

In addition to these forward contracts, the Group is exposed to foreign exchange movements on its net debt position. At 30 September 2003 net debt, after currency swaps, comprised net sterling liabilities of £285.3 million (2002: £345.2 million) and net currency liabilities of £1,082.8 million (2002: £980.4 million). Based on the Group's 2003 year end level and composition of net debt, a ten per cent appreciation of sterling would result in a reduction in the value of net currency liabilities of £90.5 million (2002: £89.1 million).

**Counterparty risk** Cash deposits and other financial instruments give rise to credit risk on the amounts due from counterparties. Credit risk is managed by limiting the aggregate amount and duration of exposure to any one counterparty depending upon its credit rating and by regular reviews of these ratings. The possibility of material loss arising in the event of non-performance by a counterparty is considered unlikely by management.

The currency and interest rate hedging profile of the Group's borrowings at 30 September 2003 is shown in note 21 to the financial statements. Further information on financial risk management is also given in note 21 to the financial statements.

**Interest on net debt**

The net charge before the Group's share of interest of joint ventures and associates was £75.8 million in 2003 (2002: £78.6 million, 2001: £98.5 million), which, after excluding interest income from loans to joint ventures and associates, represented 5.6 per cent of average net borrowings during the year. After taking into account capitalised interest and the Group's share of joint ventures and associates the net charge was £96.1 million. Adjusted interest cover (the number of times that the interest charge on net debt is covered by adjusted operating profit) increased to 5.3 times (2002: 4.9 times, 2001: 4.3 times).

**Net interest on pension financing items**

The interest on pension scheme liabilities was £110.2 million in 2003 (2002: £106.1 million, 2001: £107.2 million). The expected return on pension scheme assets was £119.6 million in 2003 (2002: £139.1 million, 2001: £166.9 million). The decline in the expected return on pension scheme assets reflects the fall in the value of world equity markets.

**Debt maturity profile**

The maturity profile of the Group's gross borrowings is as follows:

	2003		2002	
	£ million	%	£ million	%
More than five years	521.8	36.1	549.5	36.4
Two to five years	416.4	28.8	390.6	25.8
One to two years	146.5	10.1	180.9	12.0
Within one year	360.9	25.0	390.1	25.8

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Total	<b>1,445.6</b>	<b>100.0</b>	1,511.1	100.0
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A portion of the debt which matures within one year is commercial paper issued by various Group companies. The Group maintains US\$450 million (£271 million) of committed multi-currency facilities with a group of relationship banks. These facilities mature in 2008 and provide back-up for the issue of commercial paper as well as general liquidity for the Group. Additional committed facilities are maintained by the principal operating units in the Group.

Additional information on the Group's gross borrowings can be found in note 20. Details of the Group's share of net debt of joint ventures and associates, the majority of which is non-recourse, are given in note 13a).



**Table of Contents****Other contractual obligations**

The maturity of other contractual obligations of the Group is as follows:

	Operating leases £ million	Unconditional purchase obligations £ million	Total contractual cash obligations £ million
Due after more than five years	120.7	575.7	696.4
Due within two to five years	93.3	247.4	340.7
Due within one to two years	46.6	69.3	115.9
Due within one year	55.4	70.1	125.5
<b>Total</b>	<b>316.0</b>	<b>962.5</b>	<b>1,278.5</b>

See also note 25 to the financial statements.

**Off-balance sheet arrangements**

The Group has provided guarantees of £26.8 million to third parties at 30 September 2003. For further information on guarantees see note 26 a). Other than disclosed, there are no off-balance sheet arrangements that have or are reasonably likely to have a current or future material effect on the Group's financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

**Inflation**

Over the last three years, inflation has not had a material impact on the revenue or profit of the Group.

**Taxation**

The tax charge for 2003 of £96.4 million is calculated in accordance with UK accounting standards, including FRS19 (deferred tax), under which full provision is made for deferred taxes.

The effective tax rate on adjusted profit in 2003 was 29 per cent (2002: 30 per cent, 2001: 32.5 per cent). The total tax rate was 27.4 per cent (2002: 31.7 per cent, 2001: 28.9 per cent). The Group pays corporation tax in the UK at a rate of 30 per cent.

The Group is currently liable to pay federal tax at the rate of 35 per cent in the US. This is reduced by the existence of tax credits. In the other principal subsidiaries, the tax rate is typically between 30 per cent and 42 per cent.

**Contingencies**

The Group monitors all contingent liabilities including matters relating to litigation and the environment via a process of consultation and evaluation which includes senior management, internal and external legal advisers and internal and external technical advisers. This process results in conclusions with respect to potential exposure and provisions are made or adjusted accordingly. Management believes that the Group has adequately provided for contingencies which are likely to become payable in the future.

**Legal proceedings**

Group companies are parties to various legal proceedings, including some in which claims for damages in large amounts have been asserted.

The outcome of litigation to which Group companies are party cannot be readily foreseen, but the directors believe that such litigation should be disposed of without material adverse effect on the Group's financial condition or profitability.

**Welding fumes litigation** BOC has been named in numerous lawsuits in the US alleging injury from exposure to welding fumes. Many of these cases were filed during 2003. Certain of these cases have been either filed in, or transferred for pre-trial purposes to, the federal district court in the Northern District of Ohio, where a multi-district litigation (MDL) proceeding has been commenced. The MDL proceeding is still at an early stage. The MDL proceeding is a vehicle for coordinating pre-trial proceedings in cases pending in different federal district courts in the US. In addition to the cases in federal court, BOC is a defendant in a number of similar cases pending in state courts. These cases are in different stages of procedural development, and certain cases are scheduled for trial from time to time.

From the time it purchased Airco in 1978 until this year BOC had never had an adverse jury verdict returned against it in a case alleging injury from exposure to welding fumes. On 28 October 2003, a jury in Madison County, Illinois, rendered a verdict against BOC and two co-defendants. The jury awarded US\$1 million to Mr Elam, a former labourer who asserted that his idiopathic Parkinson's disease was attributable to his exposure to welding fumes over a period of years. BOC believes that the verdict is inconsistent with the decisions rendered by juries in previous cases, is not supported by the existing scientific evidence and intends to pursue vigorously its post-trial and appeal rights.

BOC believes that it has strong defences to the claims asserted in these various proceedings related to alleged injury from exposure to welding fumes and intends to defend vigorously such claims. Based on BOC's experience to date, together with BOC's current assessment of the merits of the claims being asserted, and applicable insurance, BOC believes that continued defence and resolution of these proceedings will not have a material adverse effect on its financial condition or profitability and no provision has been made.

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### Financial review continued

**Fluorogas litigation** In February 2003, the company was notified that a jury verdict in the US District Court for the Western District of Texas was obtained for US\$132 million against Fluorogas Limited, The BOC Group Inc and The BOC Group plc. The verdict arises primarily out of an alleged breach of a memorandum of understanding by Fluorogas Limited before it was acquired by The BOC Group plc in September 2001. In March 2003, the court also awarded interest and costs against the defendants, making them jointly and severally liable for a total of US\$174 million. A bond for the full amount has been posted with the Court as part of the normal appeals process.

The company believes that the jury's verdict reflects a misunderstanding of the law and does not reflect the facts of any loss that may have been suffered by the plaintiff. The company is challenging the verdict through the appropriate appeals process in the US and hence no provision has been made. In addition, Fluorogas Limited was placed in administration under the Insolvency Act of 1986 pursuant to an order of the English Courts. In a related proceeding in a US Bankruptcy Court, the UK administrators have obtained injunctive relief preventing the plaintiff in the Fluorogas litigation from commencing or continuing any action or proceeding enforcing any judgement against Fluorogas Limited in the US.

**ERISA litigation** An action was filed in the US District Court for the Southern District of Illinois against The BOC Group Cash Balance Retirement Plan (the Plan). The plaintiffs brought this action on behalf of themselves and all others similarly affected, alleging that the Plan improperly calculated lump sum distributions from the Plan in violation of the Employee Retirement Income Security Act. The maximum potential liability could have reached US\$116 million and any award would be paid out of Plan assets.

The parties have reached an agreement in principle to settle at US\$69 million. The settlement documents are being prepared. The settlement is subject to approval by the court at a fairness hearing. A provision of US\$69 million has been made in the financial statements. Under UK accounting principles (FRS17), this has been recognised as a charge in the profit and loss account of the Group. It has been shown as an exceptional item.

### Insurance

Operational management is responsible for managing business risks. Several Group departments advise management on different aspects of risk and monitor results. Insurance cover is held against major catastrophes. For any such event, the Group will bear an initial cost before external cover begins.

### Critical accounting policies

The principal accounting policies affecting the results of operations and financial condition are set out on pages 77 and 78 of the financial statements. The application of certain of these policies requires assumptions or subjective judgements by management. Management bases these on a combination of past experience and any other evidence that is relevant to the particular circumstances.

The application of these assumptions and judgements affects the reported amounts of profit during the year and the assets and liabilities at the balance sheet date. Actual results may differ from the estimates calculated using these assumptions and judgements. Management believes that the following are the critical policies where the assumptions and judgements made could have a significant impact on the consolidated financial statements.

**Tangible fixed assets** A significant part of the capital employed of the Group, particularly in the Process Gas Solutions and Industrial and Special Products lines of business, is invested in tangible fixed assets. The nature of the business demands significant capital investment to renew or increase production capacity or to enable the business to achieve greater productivity and efficiency.

It is the Group's policy to depreciate tangible fixed assets, except land, on a straight line basis over the effective lives of the assets. This ensures that there is an appropriate matching of the revenue earned with the capital costs of production and delivery of goods and services. A key element of this policy is the estimate of the effective life applied to each category of fixed assets which, in turn, determines the annual depreciation charge. In deciding the appropriate lives to be applied, management takes into account various factors including, among other things, the accumulated experience of the effective asset lives from historic business operations and an assessment of the likely impact of any changes in technology.

While Group earnings in any period would fluctuate if different asset lives were applied, in some cases the original estimated life of an asset is closely related to contractual arrangements with large customers. Some of the earnings impact of choosing a different asset life would be mitigated, as the different life may reflect different contractual arrangements with such customers. Nevertheless, variations in the effective lives could impact the earnings of the business through an increase or decrease in the depreciation charge. It is estimated that a change of one year in the effective life of all plant, machinery, vehicles and cylinders would have an impact of between £15 million and £20 million on annual Group operating profit. A change in the effective life of buildings would have only a negligible impact.

**Intangible fixed assets** In a similar manner to tangible fixed assets, management uses its judgement to determine the extent to which goodwill arising from the acquisition of a business has a value that will benefit the performance of the Group over future periods. It is the Group's policy to amortise goodwill on a straight line basis over its useful economic life. This takes into account, among other things, the maturity of the business acquired and its product and customer base. Any change in these assumptions would have an impact on the earnings of the Group.

It is estimated that a change of one year in the useful economic life of all goodwill would have an impact of approximately £1 million on annual Group operating profit.

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**Retirement benefits** Results of the Group include costs relating to the provision of retirement benefits for employees. It is the directors' responsibility to set the assumptions used in determining the key elements of the costs of meeting such future obligations. The assumptions are based on actual historical experience and are set after consultation with the Group's actuaries. They include the assumptions used for regular service costs and for the financing elements related to the pension schemes' assets and liabilities. Whilst management believes that the assumptions used are appropriate, a change in the assumptions used would affect both the operating profit and net interest cost of the Group.

There are a number of elements used in the assumptions. These vary for the different countries in which the Group operates, and there may also be an inter-dependency between some of the assumptions. As a result, it would be impractical and potentially misleading to give any approximate impact on annual Group operating profit of a change in any one assumption in isolation.

**Environmental provisions** In certain parts of the business, mainly in the US, the Group has obligations to carry out environmental clean-ups at former and current production sites. Many of these obligations will not arise for a number of years, and the costs are difficult to predict accurately. Management uses its judgement and experience to provide an appropriate amount for the likely cost of such clean-ups, and the amounts, if material, are discounted to present values. Both the amount of anticipated costs, and the interest rates used to discount such costs, are subjective. The use of different assumptions would impact the earnings of the Group.

It is estimated that a change of one per cent in the interest rate used to discount such costs would have an impact of approximately £1 million on annual Group profit before tax.

**Current asset provisions** In the course of normal trading activities, management uses its judgement in establishing the net realisable value of various elements of working capital – principally stocks, work-in-progress and accounts receivable. Provisions are established for obsolete or slow moving stocks, bad or doubtful debts and product warranties. Actual costs in future periods may be different from the provisions established and any such differences would affect future earnings of the Group.

The provisions are established at levels appropriate to the circumstances within individual Group business units, and not on a Group-wide systematic basis. It is therefore considered that any estimate of the impact on annual Group operating profit of any change in such provisions may not be meaningful. Nevertheless, a change of ten per cent in the level of provision for bad and doubtful debts at 30 September 2003 would have an impact of approximately £3 million on annual Group operating profit.

The critical accounting policies under UK GAAP do not materially differ from those under US GAAP. Further details of the differences between UK and US GAAP are given in note 30 to the financial statements.

## **Accounting**

The Group's accounting policies are based on accounting policies generally accepted in the UK (UK GAAP). No new UK GAAP accounting standards have been issued or have come into force since 30 September 2002. The accounts for the year to 30 September 2003 have therefore been prepared on an accounting basis consistent with that applied in the financial year ended 30 September 2002.

The report and accounts also continues to include US reporting requirements. This enables the Group to meet the reporting obligations for a foreign private issuer as required by the US Securities and Exchange Commission.

The report on remuneration follows the disclosure requirements of the UK Listing Authority Listing Rules and the UK Companies Act 1985. Where appropriate, in order to improve clarity, voluntary disclosures are also given.

As a global business the Group supports initiatives to harmonise accounting standards. The Group is preparing for the move to report under International Financial Reporting Standards in line with the timetable set out in European Union legislation. The first annual report and accounts to which this will apply will be for the year ended 30 September 2006.

The Group plays an active part in accounting developments by responding to new proposals and by appropriate representation.

## **US GAAP**

The financial statements of the Group have been prepared in accordance with UK GAAP, which differs in certain respects from US GAAP.

The US accounting information in note 30 to the financial statements gives a summary of the principal differences between the amounts determined in accordance with the Group's accounting policies (based on UK GAAP) and amounts determined in accordance with US GAAP together with the reconciliation of net profit and shareholders' funds from a UK GAAP basis to a US GAAP basis, presentation of the US GAAP measure of comprehensive income and a movement in shareholders' funds on a US GAAP basis.

The net income for the year ended 30 September 2003 under US GAAP was £264.3 million (2002: £255.4 million, 2001: £234.2 million), compared with the net profit of £219.1 million in 2003 (2002: £202.9 million, 2001: £224.1 million) under UK GAAP. Shareholders' funds at 30 September 2003 under US GAAP were £1,872.5 million (2002: £2,061.0 million), compared with

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£1,734.8 million (2002: £1,684.1 million) under UK GAAP. The difference primarily results from the differing accounting treatment of pensions, goodwill, financial instruments, investments and fixed asset revaluations.

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## Financial review continued

**Exchange rates**

The majority of the Group's operations are located outside the UK and operate in currencies other than sterling.

The effects of fluctuations in the relationship between the various currencies are extremely complex and variations in any particular direction may not have a consistent impact on the reported results. In 2003, sterling strengthened against two of the four principal currencies affecting the Group: by nine per cent against the US dollar and by four per cent against the Japanese yen. Sterling weakened by five per cent against the Australian dollar and by 15 per cent against the South African rand.

In 2002, sterling strengthened against the US dollar, the Japanese yen and the South African rand. It was almost unchanged against the Australian dollar.

In 2001, sterling weakened against the US dollar, but strengthened against the Australian dollar, the Japanese yen and the South African rand.

The rates of exchange to sterling for the currencies which have principally affected the Group's results over the last five years were:

	2003	2002	2001	2000	1999
<i>US dollar</i>					
At 30 September	<b>1.66</b>	1.57	1.47	1.48	1.65
Average for the year	<b>1.60</b>	1.47	1.44	1.56	1.63
Highest rate during year	<b>1.69</b>	1.58	1.50	1.67	1.72
Lowest rate during year	<b>1.54</b>	1.41	1.37	1.40	1.55
<i>Australian dollar</i>					
At 30 September	<b>2.45</b>	2.89	2.98	2.73	2.52
Average for the year	<b>2.62</b>	2.77	2.76	2.56	2.55
Highest rate during year	<b>2.89</b>	3.00	3.03	2.85	2.87
Lowest rate during year	<b>2.40</b>	2.54	2.62	2.45	2.33
<i>Japanese yen</i>					
At 30 September	<b>185.60</b>	191.45	175.09	159.77	175.34
Average for the year	<b>191.01</b>	184.34	170.04	166.03	191.43
Highest rate during year	<b>199.49</b>	193.05	181.26	178.67	230.73
Lowest rate during year	<b>182.17</b>	173.82	153.13	149.77	168.23
<i>South African rand</i>					
At 30 September	<b>11.57</b>	16.58	13.24	10.68	9.88
Average for the year	<b>13.24</b>	15.64	11.47	10.24	9.82
Highest rate during year	<b>16.41</b>	19.49	13.26	11.18	10.43
Lowest rate during year	<b>11.40</b>	13.00	10.54	9.92	9.12

On 13 November 2003, the latest practicable date for inclusion in this report and accounts, the rates of exchange to sterling for the principal currencies were as follows: US dollar 1.69; Australian dollar 2.34; Japanese yen 182.44; South African rand 11.39.

The highest and lowest rates of exchange for sterling against the US dollar for the last six months were:

	May	June	July	August	September	October
High	1.65	1.69	1.67	1.62	1.66	1.70
Low	1.59	1.63	1.58	1.57	1.57	1.66

### Principal operating companies

The following operating companies principally affect the amount of profit or assets of the Group:

The BOC Group Inc, a wholly-owned Delaware corporation and a subsidiary of The BOC Group Inc, a wholly-owned Nevada corporation.

BOC Limited, a wholly-owned English company.

BOC Limited, a wholly-owned Australian company.

Gist Limited, a wholly-owned English company.

Japan Air Gases Limited, a Japanese company, in which the Group's Japanese 98 per cent owned subsidiary holds 45 per cent.

African Oxygen Limited, a South African company, in which the Group's shareholding is 56 per cent.

### Supplier payment policy

The Group applies a policy of agreeing and clearly communicating the terms of payment as part of the commercial arrangements negotiated with suppliers and then paying according to those terms. In addition the UK-based businesses have committed to the Better Payment Practice Code . A copy of the code can be obtained from the Department of Trade and Industry, DTI Publications Orderline, Admail 528, London SW1W 8YT.

For UK businesses, of amounts owing to suppliers, trade creditors represents 54 days at 30 September 2003.

### Going concern

The directors are confident, after having made appropriate enquiries, that both the company and the Group have adequate resources to continue in operation for the foreseeable future. For this reason, they continue to adopt the going concern basis in preparing the accounts. Management believes that its current credit facilities provide sufficient working capital to meet the present requirements of its existing businesses and that the gearing ratio is appropriate given the nature of the Group's activities.

### Substantial holdings

Details of substantial holdings of Ordinary shares at 13 November 2003 are shown on page 125.



**Table of Contents****Corporate governance**

The BOC Group is committed to business integrity, high ethical values and professionalism in all its activities. As an essential part of this commitment, the board supports the highest standards in corporate governance.

**The board**

At 30 September 2003 the board comprised the chairman, five executive directors and six non-executive directors. Biographies of each of the directors can be found on pages 8 and 9. BOC has operated with a board comprised of 12 members for some time and considers this to be an effective size and balance for the company. The executive directors are the chief executive, Group finance director and the three chief executives of the lines of business. The non-executive directors bring a wide range of experience and expertise to the board and all are considered by the board to be independent. Sir Christopher O Donnell is the senior independent director, having been appointed to this role in March 2003 following the retirement of Göran Lundberg. The board composition allows for changes to be made with minimum disruption. The board reviews annually the senior managers and their succession and development plans.

The roles of chairman and chief executive are separate. This has been so since 1994. The chairman leads the board, ensuring that each director, particularly the non-executive directors, are able to make an effective contribution. He monitors, with assistance from the company secretary, the information distributed to the board to ensure that it is sufficient, accurate, timely and clear. The chief executive maintains day-to-day management responsibility for the company's operations, implementing Group strategies and policies agreed by the board. This division of responsibilities between the chairman and the chief executive has been agreed with the board as a whole.

During the year the chairman's other commitments have changed. Whilst remaining a non-executive director of Anglo American plc he has stepped down from the chairmanship of its audit committee and has assumed the role of senior independent director. The board has reviewed the chairman's current obligations and is satisfied that he has sufficient time available to meet all his commitments.

The board has a formal schedule of matters reserved to it. In particular the board's main focus is on strategic and policy issues and reviewing performance. These matters are reviewed annually at a combined board and strategy meeting, lasting over a period of two days, with updates provided to the board on a regular basis.

The board delegates certain functions to committees. There are six board committees, details of which are given below. The board, however, takes direct responsibility for the review and monitoring of key company policies in such areas as risk management, treasury matters and corporate social responsibility including safety, environment and the Code of Conduct. The board currently approves all Group commitments in excess of £25 million. Decisions relating to commitments below this level are delegated by the board to the business unit heads, line of business chief executives, investment committee and the executive management board in accordance with specified financial levels agreed by the board. The board monitors the financial performance of the company. It is given presentations on major projects and receives reviews from each of the individual businesses.

The board meets six times a year, with two meetings held at major operating subsidiaries and one of those two meetings at a location outside the UK. The attendance of directors at the board and principal board committee meetings during the year are detailed in the chart below.

	Board (six meetings)	Audit committee (four meetings)	Nomination committee (six meetings)	Remuneration committee (six meetings)
R J Margetts	6		6	
A E Isaac	6		6	
F R Arredondo	5	4	5	4
J M Baddeley	6	4	6	6
J A Bevan <sup>1</sup>	4			
A R J Bonfield <sup>2</sup>	1	1	1	1
R S Grant <sup>3</sup>	2			
G U U Lundberg <sup>4</sup>	2	1	2	3
R Médori	6			
R G Mendoza <sup>5</sup>	5	4	4	4
M F C Miao	6		5	4
Sir Christopher O Donnell	5	4	5	4
Dr K Rajagopal	6			

- 
1. appointed on 5 December 2002.
  2. appointed on 29 July 2003.
  3. resigned on 31 December 2002.
  4. resigned on 4 March 2003.
  5. appointed on 9 October 2002.

The chairman meets twice a year with the non-executive directors without the executive management present and at each meeting there is a session without the chairman present, chaired by Sir Christopher O'Donnell as the senior independent director, during which they review the chairman's performance.

The company maintains directors' and officers' liability insurance with a limit of cover of £100 million for each and every claim or series of claims arising from the same set of circumstances.

The board reviews board meeting papers, regular reports on the company and market sector activity together with updates on governance and regulatory matters and litigation affecting the Group.

All directors have access to the advice and services of the company secretary and there is a well established procedure enabling any director, in the furtherance of his or her duties, to seek independent professional advice at the company's expense.

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### Corporate governance continued

#### **Directors and officers**

The directors holding office at the date of this report are named on pages 8 and 9. John Bevan joined the board as an executive director on 5 December 2002 and Dick Grant resigned as an executive director on 31 December 2002. Roberto Mendoza was appointed a non-executive director on 9 October 2002 and, following the resignation of Göran Lundberg on 4 March 2003, Andrew Bonfield was appointed a non-executive director on 29 July 2003.

The officers of the company are the executive directors and other members of the executive management board as named on pages 10 and 11. All held office throughout the year ended 30 September 2003 except Dick Grant who resigned on 31 December 2002 and Kent Masters who became a member of the executive management board on 11 December 2002. There have been no further changes up to the date of this report.

#### **Non-executive directors**

The Group has long recognised the vital role that non-executive directors play in ensuring high governance standards. The BOC board has for many years had a significant presence of high calibre non-executive directors. The nomination committee identifies and evaluates candidates to fill vacancies and these are nominated for approval by the board as a whole. Non-executive directors are initially appointed for a three year term after which, whilst not automatic, their appointment may be extended subject to mutual agreement and shareholder approval.

The non-executive directors have full access to management and both internal and external auditors, and are encouraged to stay fully abreast of the Group's business through site visits and meetings with senior management. Appropriate training and briefings are available to all directors on appointment and subsequently, as necessary, taking into account their qualifications and experience. During 2003 a non-executive director attended two relevant external training courses. For all new non-executive directors a full induction programme is provided including site visits and meetings with each of the line of business chief executives, each member of the executive management board and also the company's key external advisers.

#### **Board committees**

There are six board committees to which the board delegates specific areas of responsibility as described below.

#### **Audit committee**

Members: Fabiola Arredondo, Julie Baddeley, Andrew Bonfield, Roberto Mendoza, Matthew Miao and Sir Christopher O'Donnell (chairman).

The audit committee meets four times a year. Time is set aside at two of these meetings for the committee to meet with the internal and external auditors without executive management present. The committee reviews the effectiveness of internal controls, matters raised by the internal and external auditors in their regular reports to the committee and the quarterly financial statements prior to their release. The committee reviews the programme and effectiveness of risk management within the Group as well as ensuring that an appropriate relationship between BOC and the external auditors is maintained. The audit committee terms of reference are available on the company's website ([www.boc.com](http://www.boc.com)).

Andrew Bonfield, an independent non-executive director, is considered by the board to be the audit committee financial expert. He is considered to be independent in accordance with a definition of that term by the New York Stock Exchange. The qualifications of all members of the committee are given on pages 8 and 9.

A report from the audit committee on its activities during 2003 is given on page 55.

#### **Nomination committee**

Members: Fabiola Arredondo, Julie Baddeley, Andrew Bonfield, Tony Isaac, Rob Margetts (chairman), Roberto Mendoza, Matthew Miao and Sir Christopher O'Donnell.

The nomination committee meets periodically as required, and in the year ended 30 September 2003 met six times. The committee primarily monitors the composition and balance of the board and its committees and identifies and recommends to the board the appointment of new directors. Whilst the chairman of the board chairs this committee he is not permitted to chair meetings when the appointment of his successor is being reviewed. The nomination committee terms of reference are available on the company's website ([www.boc.com](http://www.boc.com)).

Following developments in corporate governance during the year, the committee reviewed the terms of reference of each of the principal board committees. It recommended changes which were approved and implemented by the board.

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The committee carries out, on an annual basis, a review of the board and executive management board, monitoring the succession plans for the board. This is complemented by an annual board evaluation which in 2002 was an internal review and in 2003 has been a more comprehensive review conducted by an external facilitator. The results of the evaluation assist the committee in its consideration of the opportunities for improvement in the performance of directors generally and in the reappointment of non-executive directors upon expiry of their term of office and also on their proposed re-election as directors retiring by rotation at the Annual General Meeting.

The results of the 2003 evaluation were very positive. In particular, the evaluation confirmed that the board and each of the principal board committees worked effectively. The contributions by individual directors to board and committee discussions were also considered to be high. The review did highlight the need for continuing improvement in the overall efficiency of board and committee meetings in order to maintain the focus of discussions on key strategic and policy matters.

In the appointment of new directors the committee reviews the current balance of skills on the board. It draws up a specification to include any specific knowledge or expertise it considers of future benefit to the board having regard to the business throughout the Group and the overall strategy. It recruits using external search agents who would put forward a short list of candidates for the committee to review before submitting its recommendation to the board as a whole.

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During the year the committee assessed the time commitment it considers appropriate for each non-executive director to devote to BOC to ensure that they have enough time in addition to their existing commitments. This agreed time commitment is taken into account when considering new appointees to the board.

### **Remuneration committee**

Members: Fabiola Arredondo, Julie Baddeley (chairman), Andrew Bonfield, Roberto Mendoza, Matthew Miao and Sir Christopher O'Donnell.

The remuneration committee meets six times a year. The committee recommends to the board the policy on executive directors' remuneration and the specific remuneration, benefits and terms of employment of each executive director. The remuneration committee terms of reference are available on the company's website ([www.boc.com](http://www.boc.com)).

The committee's report on directors' remuneration is set out on pages 60 to 69.

### **Pensions committee**

Members: Julie Baddeley (chairman), Tony Isaac, Rob Margetts, René Médori, Roberto Mendoza.

The pensions committee meets twice a year and oversees the review of governance and control procedures applying to all employee retirement benefit plans and reviews and makes recommendations on the investment policies and strategies applied to the Group's retirement benefit plans.

### **Executive management board**

The members of the executive management board are detailed on pages 10 and 11. The executive management board is chaired by Tony Isaac.

The executive management board meets regularly having primary authority for the day-to-day management of the Group's operations and policy implementation pursuant to the Group's strategy agreed by the board.

### **Investment committee**

Members: John Bevan, Tony Isaac (chairman), René Médori, Raj Rajagopal, Greg Sedgwick, John Walsh and representatives from the finance function.

The investment committee meets regularly and reviews and approves Group commitments up to certain levels set by the board.

### **Accountability and audit**

Statements of the respective responsibilities of the directors and auditors for these accounts are set out on pages 70 and 71.

To enhance further the confidence of investors in the independence of the independent auditors and their report, the board of BOC has introduced a policy that defines which other services PricewaterhouseCoopers LLP may or may not provide to BOC. The policy requires the provision of these services to be approved in advance by the audit committee of the board. A full statement of the fees paid for audit and non-audit services is provided in note 2 c) to the financial statements.

### **Audit committee report**

The audit committee meetings in 2003 reviewed the following issues:

- i) interim financial results.
- ii) interim report from the internal audit function of progress against the 2003 audit plan.
- iii) corporate governance issues arising in the US under the Sarbanes-Oxley Act and in the UK in the revised Combined Code. The audit committee reviewed the Group's actions and disclosure items in response to these matters designed to enhance the Group's corporate governance practices.
- iv) the external 2003 audit plan for the Group's auditors, PricewaterhouseCoopers LLP (PwC). This review included the audit objectives, auditor independence and objectivity policies managed by PwC, partner rotation, audit scope, team, timetable, deliverables and fee proposal.
- v) the Group's risk management process, including progress on the management of key risks identified by the Group, and within the Group's lines of business.
- vi) the 2003 full year results.
- vii) the annual report disclosure items relevant to the audit committee.
- viii) full year report on internal audit and effectiveness of internal control.
- ix) the external auditors' year end report.

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x) the independence and objectivity of the external auditors, including a review of non-audit fees.

During this period the audit committee met with the Group's external auditors without the presence of management.

Regular attendees to audit committee meetings, at the invitation of the chairman of the committee, include: the chairman, chief executive, Group finance director, company secretary (or his designate), director of risk management and head of business assurance audit.

During 2003 the audit committee has reviewed the arrangements for staff to report, in confidence, financial reporting, financial control issues or other matters. The committee has also reviewed the Group's policy on the hiring of former external auditor personnel and has received reports from management on changes in accounting requirements and accounting policies relevant to the Group.

The audit committee has reviewed its terms of reference and amended them in accordance with the policies and procedures introduced by BOC to enhance corporate governance practices.

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### Corporate governance continued

The audit committee has reviewed and approved a policy for the provision of non-audit services by the auditor. This policy defines services which can be provided by the auditor and specifies services which cannot be provided. The policy requires all non-audit services to be approved in advance by the audit committee, which has delegated this task to the chairman of the audit committee. The approval process requires full disclosure of the objectives and scope of the services to be performed and fee structure. The audit committee reviews all approved services at subsequent meetings.

The audit committee has reviewed and approved a policy to safeguard auditor objectivity and independence. This policy requires annual review of:

- i) policies and procedures adopted by the auditor.
- ii) policies implemented by the Group to manage non-audit services, employment of former auditor employees, audit partner rotation and influence on the conduct or objectivity of the audit.

The audit committee concludes that, based on the foregoing, it has discharged its responsibilities as set out in the terms of reference and is satisfied that auditor independence and objectivity have been maintained.

### **Risk management and internal controls**

This statement of compliance with the Combined Code on Corporate Governance in respect of risk management and internal controls is in line with the arrangements set out by the UK Listing Authority.

The board has overall responsibility for the Group's system of risk management and internal controls.

The schedule of matters reserved to the board ensures that the directors maintain full and effective control over all significant strategic, financial, organisational and compliance issues.

**Risk management in BOC** The BOC risk management programme assists management throughout the Group to identify, assess and manage business risk.

The risk management programme is supported by a dedicated central team of risk specialists. To ensure all parts of the Group have a firm understanding of risk, the central team has led over 170 risk workshops and reviews around the world in the past three years. These risk assessments have been broad, covering: risks in strategy; risks to achieving commitments contained in performance contracts; risks in organisational change; risks associated with major projects and risks involving acquisitions. The risk management process operates throughout BOC and is applied equally to the global lines of business, the business units and corporate functions.

The output from each assessment is a list of prioritised risks with associated action plans to mitigate them. Line managers are responsible for these action plans and their progress is reported, as required, as part of their performance contract reviews.

A report is made to the board twice a year. The relevant business executives presented to the board in May and November 2003, covering actions which had been completed and the status of continuing action plans to manage the Group's key risks.

BOC views risk management as integral to good business practice. The programme is designed to support management's decision making and to improve the reliability of business performance. BOC will continue to embed the management of risk into all its management processes.

**Internal controls in BOC** The directors have delegated to executive management the establishment and implementation of a system of internal controls appropriate to the various business environments in which it operates. The Group operates under a system of controls that has been developed and refined over time to meet its current and future needs and the risks and opportunities to which it is exposed. These controls, which are communicated through various operating and procedural manuals and processes, include but are not limited to:

- the definition of the organisational structure and the appropriate delegation of authorities to operational management.
- procedures for the review and authorisation of capital investments through the investment committee including post-acquisition reviews and appraisals.

- strategic planning and the related annual planning process including the ongoing review by the board of the Group's strategies.

- the establishment of individual business unit annual performance targets and the quarterly business review of actual performance.

- the monthly financial reporting and review of financial results and other operating statistics such as the health and safety reports as well as the Group's published quarterly financial statements, which are based on a standardised reporting process.

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accounting and financial reporting policies to ensure the consistency, integrity and accuracy of the Group's accounting records.

specific treasury policies and objectives and the ongoing reporting and review of all significant transactions and financing operations.

The internal control system is monitored and supported by an internal audit function that operates on a global basis and reports its results to management and the audit committee on the Group's operations. The work of the internal auditors is focused on the areas of greatest risk to the Group determined on the basis of a risk management approach to audit.

There have been regular reviews by the audit committee of the board of the effectiveness of the Group's overall internal control processes throughout the year.

The directors therefore believe that the Group's system of risk management and internal controls provides reasonable but not absolute assurance that assets are safeguarded, transactions are authorised and recorded properly and that material errors and irregularities are either prevented or would be detected within a timely period.

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Having reviewed its effectiveness, the directors are not aware of any significant weakness or deficiency in the Group's system of internal controls during the period covered by this report and accounts. There were no changes in the Group's internal control over financial reporting that occurred during the year ended 30 September 2003 that have materially affected, or are reasonably likely to materially affect, the Group's internal control over financial reporting.

### **Disclosure controls and procedures**

The chief executive and Group finance director, after evaluating the effectiveness of the Group's disclosure controls and procedures as at the end of the period covered by this annual report and accounts, have concluded that, as at such date, the Group's disclosure controls and procedures were effective.

### **Going concern**

The directors' report on going concern is included in the financial review on page 52.

### **Communications with shareholders**

The board considers communications with shareholders, whether institutional investors, private or employee shareholders, to be extremely important. Results are published quarterly, and half year and annual reviews are sent to all shareholders. A copy of the full report and accounts is available by election or on request. The Annual General Meeting provides an opportunity for shareholders to question directors about the company's activities and prospects. The chairmen of each of the principal board committees are normally present. During the year responses are given to letters received from shareholders on a variety of subjects. There is a programme of regular dialogue with major institutional shareholders and fund managers and summaries of these discussions and meetings are provided to the board. In addition the board receives copies of most analyst and broker reports issued on the company. These summaries and reports enable the directors to gain an understanding of the views and opinions of those with an interest in the company.

The company's website ([www.boc.com](http://www.boc.com)) provides financial and other business information about The BOC Group. It contains an archive of past announcements and annual reports, share price information and a calendar of events as well as BOC's social responsibility policies, including the company's Code of Conduct.

### **Compliance**

The board has applied the principles contained in Section 1 of the Combined Code on Corporate Governance appended to the UK Listing Authority Listing Rules and has complied throughout the year, with the exception that Dick Grant, a director who resigned with effect from 31 December 2002, had a service contract that could be terminated by the company on two years' notice.

Directors submit themselves for re-election at regular intervals and at least every three years in accordance with the company's Articles of Association and the Combined Code.

Although the new Combined Code is only effective for reporting years beginning on or after 1 November 2003, BOC has already made changes to its corporate governance procedures such that at this time the company is significantly advanced towards compliance with the new code.

### **US corporate governance compliance**

BOC has securities registered in the US and, as a result, is required to comply with those provisions of the Sarbanes-Oxley Act 2002 (the Act) as it applies to foreign issuers. Whilst the company believes its corporate governance structure to be robust and in line with best practice, changes have been made in order to ensure compliance with the Act as far as it applies to BOC. The board continues to monitor the new rules being issued pursuant to the Act and will comply with any new legal and regulatory requirements as they are introduced.

As recommended by the US Securities and Exchange Commission (SEC) BOC has established a disclosure committee comprising the Group finance director, Group legal director and representatives from the finance, company secretarial, treasury, investor relations, risk management and human resources functions. The committee meets regularly and is responsible for performing an oversight and advisory role in the disclosure process for the quarterly announcements and the content and form of the annual report and Form 20-F. The committee makes recommendations to the chief executive, Group finance director and executive management board on the adequacy of processes to permit signing of the certifications required by the Act.

In November 2003, the SEC approved changes to the listing standards of the New York Stock Exchange (NYSE) related to the corporate governance practices of listed companies. Under these rules, listed foreign private issuers, like BOC, must disclose any significant ways in which their corporate governance practices differ from those followed by US domestic companies under the NYSE listing standards. There are no significant differences in the corporate governance practices followed by BOC, as compared to those followed by US domestic companies under the NYSE listing standards, except that BOC follows the recommendations contained in the Combined Code with respect to the membership of its nomination committee which permits membership of this

committee to be composed of a majority of independent non-executive directors. The NYSE listing standards require that the nomination committee be composed entirely of independent directors.

### Corporate social investment

BOC's social investment programme has four key objectives:

- i) to continue to focus on projects to improve environmental stewardship;
- ii) to strengthen BOC's educational support in selected areas;
- iii) to continue to devolve the choices of charitable donations to employees through matched giving and volunteering schemes;  
and
- iv) to broaden the organisation's involvement in social programmes around the world.

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### Corporate governance continued

These objectives were accompanied by the launch of BOC's global Code of Conduct, which underpins the Group's commitment to high legal and ethical standards in business. The code is being transmitted to the organisation through an extensive communication, training and change management process. It details and builds on many of the Group's existing social, environmental, legal and ethical standards as well as improving areas where there were perceived gaps or deficiencies. The code includes many standards: safe working practices; sound environmental management; fair competition and trade practices; rejection of corrupt practices; respect for the principles of human rights; and community engagement and support. The code can be accessed on the company's website at [www.boc.com](http://www.boc.com)

The code is reinforced by a supporting programme, including clear channels for employees to lodge questions, concerns or complaints. The BOC helpline operates 24 hours a day, seven days a week. Translators are available to handle concerns in every major business language. Using the helpline, employees can post, e-mail, fax or telephone concerns to be handled confidentially by an independent helpline administrator or by BOC's global compliance department.

BOC operates a wide-ranging social investment and charitable donations programme, directing resources at areas where the organisation feels it can make a difference or where employees have a direct involvement.

In 2003, BOC made charitable donations totalling £1.12 million including £476,000 to UK-registered charities through direct donations from the Group and matched giving. As in previous years, no political donations were made in the European Union.

#### **Supporting the environment**

The Group's environmental flagship remains the UK-based BOC Foundation for the Environment, which was established with an initial injection of £1 million in 1990. The Foundation has supported over 120 projects. This year, the Group contributed £180,000 to Foundation projects and saw eight new initiatives come on stream. Since the Foundation's inception BOC has donated £3.7 million. Combined funding from BOC and its co-sponsoring partners now exceeds £12 million. This year the Foundation was reorganised to concentrate on projects that improve air and water quality and to increase the proportion of its environmental spending that goes in direct support of selected projects.

BOC made a number of positive contributions to other environmental projects including the BOC New Zealand community environmental grants programme, which provides assistance to schools and local community groups. Together with the New Zealand Water Environment Research Foundation, BOC manages a scheme providing funding to help communities maintain, protect and improve their water resources.

#### **Charitable programmes**

At a local level, BOC employees have continued to involve themselves in charitable fundraising and voluntary support. To this end, BOC's matched giving scheme again proved its worth as a way of aligning corporate funding with the personal generosity of BOC employees. Matched giving schemes have been operating in the UK, the Americas and the south Pacific for some time. In the course of 2003, BOC in the UK donated £201,000 (included in the UK total above) through the Charities Aid Foundation to match employee beneficence.

In addition to the numerous causes supported through matched giving, BOC also supported a number of Group causes, including the Royal British Legion, Thrive, St John's Ambulance, Macmillan Cancer Relief and ProShare. BOC ran the second year of the BOC Emerging Artist Award to encourage and support a committed UK-based artist for a year. The 2003 award was won by Manchester Metropolitan University graduate Tom Hackney who emerged as the overall winner of the £20,000 bursary from 200 applicants.

The Group's logistics business, Gist, has formed a partnership with FareShare, adopting the cause as its headline charity. FareShare is a national network that redistributes surplus food to homeless and vulnerable people around the UK. Food that is nearing its expiry date is delivered to the FareShare depots from big retailers. Volunteers at the depots then sort, grade, refrigerate and deliver the food to day centres. Money saved on food is then used to provide other support services such as training, medical services and counselling to help people rebuild their lives.

#### **Community involvement**

Outside the UK, the development of community activities rests in the hands of local BOC businesses, each one being responsible for its own project selection and funding. This devolved approach has resulted in the funding of a rich variety of programmes that are truly relevant to the communities in which BOC companies operate.

In the US, through a combination of financial support and many hours of volunteer involvement, BOC and its employees continued to assist the United Way charitable appeal, helping to make a difference in many deprived sectors of the community. BOC in the US also pursued a number of other projects including support for local arts and educational causes.

In the south Pacific, the company matches employees' fundraising for three charities a year. In Australia, employees once again chose the Salvation Army's Red Shield Appeal, Daffodil Day, a fundraising event for cancer research, education and patient support, and Jeans for Genes, an international campaign that raises funds for research into genetic disorders. In New Zealand,

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employees selected Daffodil Day, the Westpac Rescue Helicopter and the Society for the Prevention of Cruelty to Animals. BOC in Australia continues a long-established relationship with the Malcolm Sargent Cancer Fund for Children. BOC employees support this cause with financial contributions and employee support through volunteering and fundraising activities.

In South Africa, BOC's subsidiary Afrox and its staff continued to support the company's community involvement process (CIP), which includes the management of 125 projects to improve the lives of disadvantaged young people. Once more, the highlight of the year was Bumbanani (meaning 'let's build together') Day when 13,500 children attended events hosted by BOC staff. This year, Afrox's CIP was identified by the United Nations as a model community programme and the Springs Parkland clinic received the president's merit award for outstanding social commitment.

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In addition, Afrox hospitals engage in a wide range of health care and safety initiatives, including sponsorship of the South African Heart Foundation. A Mended Hearts support group and cardiac rehabilitation team, supporting people in their recuperation and rehabilitation after heart surgery, continued to roll out their programmes on an increasingly national basis. Some Afrox hospitals have a special outreach service in the form of rape crisis centres. Medical examinations are conducted in a non-threatening environment with the emphasis placed on maintaining the dignity of the victim. Preventive medication and antiretroviral drugs are given against sexually transmitted diseases.

BOC and its employees have been active in many other markets. BOC in China has embarked on a support programme to facilitate screened blood donations to local hospitals. In Thailand, BOC sponsored a sports programme helping to discourage drug use. BOC in Pakistan, continued to provide support to community organisations dealing with poverty alleviation, education and health care. This year, support continued for: the Layton Rehmatulla Benevolent Trust, an organisation dedicated to providing free eye care; the Marie Adelaide Leprosy Centre; the Shaukat Khanum Memorial Cancer Hospital, the first institution in Pakistan dedicated to cancer treatment; and the Aga Khan Medical Hospital and Foundation. BOC was one of the founding contributors to the Aga Khan Foundation which runs a world class university hospital affiliated to the Harvard Medical School.

In Chile, BOC supported the Catholic University of Chile with sponsorship of part of the expenses for a new engineering school and the establishment of departments of mining investigations, environmental management and teaching through the Internet. In Venezuela, BOC donated funds and helium balloons to schools and orphanages and breathing oxygen to local fire stations. In Curacao, the organisation channels support through the local Rotary Club and contributed to various youth education and care for the elderly projects. In India, BOC made a number of contributions across a range of poverty alleviation and community welfare initiatives.

### **Investing in education**

Several BOC businesses initiated or strengthened their educational contributions. For example, in southern Africa, BOC companies supported education and training with external and employee bursaries, grants, in-house vocational courses and incidental donations as well as continued support for a welding school and the Afrox College of Nursing. In Thailand, employees adopted a local primary school and supported it with books and stationery. It also supported several establishments with equipment and scholarships for employee dependants. In the UK, BOC launched an education website entitled Inspiring Gases, which is designed to help students and their teachers understand more about gases and their uses. The website will be developed further as a focal point for other educational activities.

Where appropriate, BOC continues to play an active part in local communities by harnessing its educational capabilities through school tours, lessons in the properties of gases, technical support and academic research. It also funds programmes and events such as the BOC Gases Challenge, which encourages UK secondary school students to develop chemical engineering ideas based on the uses of helium and carbon dioxide, sponsorship of the UK's Council for Industry and Higher Education, the annual Institute of Chemical Engineers' environment award, and the Salters' Festivals of Chemistry for the propagation of science amongst the young. BOC signed a five year deal in 2001 to support the Salters' festival season. Last year, 34 festivals of chemistry involving 500 different schools took place at universities across the UK and Ireland.

### **Annual General Meeting**

The Annual General Meeting will be held at the Institution of Electrical Engineers (Lecture Theatre), Savoy Place, London WC2R 0BL on Friday 23 January 2004 commencing at 11.00 am. The Notice of the Annual General Meeting, which includes explanations of all resolutions, is contained in a separate circular which is being sent to all shareholders more than 20 working days before the meeting.

Resolutions will seek approval to the following:

- a) receipt of the report and accounts;
- b) approval of the directors' remuneration report;
- c) reappointment of Andrew Bonfield, Sir Christopher O'Donnell, Julie Baddeley and John Walsh as directors;
- d) reappointment of PricewaterhouseCoopers LLP as auditors and granting authority to the directors to fix their remuneration. Following the change in legal status of the auditors PricewaterhouseCoopers to a Limited Liability Partnership (LLP) from 1 January 2003, PricewaterhouseCoopers resigned on 13 February 2003 and the directors appointed PricewaterhouseCoopers LLP to fill the casual vacancy until the next Annual General Meeting. Special notice of this resolution has been received;
- e) the dividend policy;
- f) political donations and expenditure pursuant to the Political Parties, Elections and Referendums Act 2000;
- g) renewal of the authority of the directors to allot shares;
- h) renewal of the authority for the directors to allot shares for cash other than to existing shareholders in proportion to their holdings;
- i) granting of general authority for the company to purchase its own shares up to a maximum of ten per cent of issued share capital. No purchases were made following last year's authority; and
- j) amendments to the Articles of Association.

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The report of the directors has been approved by the board and signed on its behalf by:

**Nick Deeming** Secretary  
21 November 2003

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## Report on remuneration

## The remuneration committee

The remuneration committee comprises, with the exception of the Group chairman, Rob Margetts, all the independent non-executive directors namely Julie Baddeley (chairman), Fabiola Arredondo, Andrew Bonfield (appointed July 2003), Roberto Mendoza (appointed October 2002), Matthew Miao and Sir Christopher O'Donnell. Göran Lundberg had been the chairman of the remuneration committee until his retirement on 4 March 2003. Whilst neither the Group chairman nor the chief executive are members of the remuneration committee they both attend the meetings by invitation but are not present when their personal remuneration is discussed and reviewed. The human resources director acts as secretary to the committee and provides it with information and data from national and international surveys. In addition, during the year the remuneration committee appointed Towers Perrin to review the remuneration arrangements for senior executives. No other services are provided by this adviser.

The remuneration committee sets the overall remuneration policy of the Group and makes recommendations to the board on the framework of executive remuneration. It meets six times a year. Individual member attendance at the meetings is shown on page 53. The terms of reference are reviewed annually to ensure that they conform with best practice. Specifically, the remuneration committee determines, on behalf of the board, the detailed terms of service of the executive directors and other members of the executive management team including basic salary, performance related bonus arrangements, benefits in kind, long-term incentives and pension benefits. The remuneration committee also reviews the remuneration of the chairman, following a recommendation from the chief executive and the senior independent director. The board as a whole determines the non-executive directors' fees.

## Remuneration policy

BOC's remuneration policy for executive directors and other executive management is designed to attract and retain executives of the highest calibre so that the Group is managed successfully to the benefit of its stakeholders. In setting remuneration levels the remuneration committee takes into account the remuneration practices found in other UK-listed companies of similar size, internationality and complexity and seeks to benchmark executive remuneration at about the median level for this group.

During 2002 the remuneration committee reviewed the executive remuneration packages and decided that a realignment was necessary to support the company's business strategy to improve both earnings growth and capital efficiency and to ensure that the packages were market competitive. To this end, a proposal to adopt new long-term incentive arrangements was put to shareholders and approved at the 2003 Annual General Meeting. These arrangements comprise a long-term incentive plan and an executive share option scheme. They are intended to encourage innovation and value-added growth and strengthen the link between short-term performance and sustainable improvement in shareholder value over the longer term. It is the view of the remuneration committee that performance-related remuneration should form a substantial element of total remuneration. As such, these arrangements together with the variable compensation plan, which is a performance related cash plan, form the variable elements of executive remuneration. It is expected that the achievement of on target performance of these variable elements will amount to about 60 per cent of total executive remuneration.

No changes to the framework of executive remuneration are proposed for 2004. The remuneration committee will, however, review the policy on a regular basis and make any amendments it deems appropriate to ensure that it meets the objectives of recruiting, retaining and motivating high performing individuals and ensuring that the Group is market competitive.

## Remuneration components

**Basic salary** Salaries for executive directors and executive management board members are based on median market rates drawn from two external market data sources and take account of an executive's experience, responsibilities and performance. Performance is assessed both from an individual and business perspective. Executive salaries are normally reviewed annually by the remuneration committee. Remuneration for those executives of businesses outside the UK is denominated in the local currency.

**Benefits in kind** Benefits in kind comprise company car benefits and membership of BOC's health care insurance scheme. Where appropriate, directors on international assignment receive overseas allowances such as housing and children's education fees. These allowances are on similar terms to those applying to other employees on the international programme. Such benefits are in line with those offered by peer group companies. Benefits in kind do not form part of pensionable earnings.

**Variable compensation plan** The executive directors and senior management participate in the variable compensation bonus plan. The plan focuses on annual objectives and links individual performance with business plans. The financial targets for the

executive directors and other executive management board members are set on an annual basis by the remuneration committee and performance against these targets is reviewed by the remuneration committee on a six-monthly basis. The remuneration committee considers that a six-monthly review acts as a significant incentive and is conducive to sustaining performance throughout the year. The financial targets are based equally on adjusted earnings per share (EPS) and adjusted return on capital employed (ROCE) at Group level. Adjusted means excluding exceptional items. Bonuses are assessed two-thirds on these financial targets with the remaining third based on personal objectives derived from BOC's strategic priorities, including safety and growth initiatives. During 2002 the remuneration committee reviewed the plan and agreed the maximum bonus payable for the achievement of financial and personal objectives would be 80 per cent of salary. There is a threshold performance level below which no bonus is paid.

The bonuses for the executive directors and other members of the executive management board are paid half yearly following the remuneration committee review. Details of the payments to directors are included in the directors' remuneration for the year on page 64.



**Table of Contents****Current long-term incentive arrangements**

**Long-Term Incentive Plan (LTIP)** Executive directors, members of the executive management board and a number of other key executives selected from the company's global operations participate in the LTIP. The remuneration committee has the discretion to grant awards up to a maximum of two times salary. The award made in February 2003 to the chief executive was based on 1.5 times salary and for other board directors one times salary. There are three performance conditions: total shareholder return (TSR), adjusted earning per share (EPS) and adjusted return on capital employed (ROCE). Up to one third of the award could vest in respect of each performance condition

The TSR performance condition compares BOC's TSR performance with two separate comparator groups, a UK comparator group comprising 31 industrial and manufacturing companies and a global industrial gases group of six leading companies as follows:

**UK group**

Aggregate Industries	BPB	Invensys	Scottish & Southern Energy
AMEC	Centrica	Johnson Matthey	Scottish Power
Anglo American	Corus Group	Kelda Group	Severn Trent
AWG	FKI	National Grid Transco	Shell Transport & Trading
BAE Systems	Hanson	Pilkington	Smiths Group
BG Group	IMI	Rio Tinto	Tomkins
BHP Billiton	ICI	RMC Group	United Utilities
BP	International Power	Rolls-Royce	

When determining BOC's performance relative to the global gases group, the TSR for BOC and the comparator companies will be amended (amended TSR) so that it reflects the excess (or shortfall) in returns relative to the local stockmarket index where each company has its primary listing. The nationality and the local stockmarket index that will be used to calculate the amended TSR for each company is shown in parentheses below

**Global gases group**

Airgas	(US S&P 500 Index)
Air Liquide	(France CAC 40 Index)
Air Products & Chemicals	(US S&P 500 Index)
Linde	(Germany DAX 30 Index)
Nippon Sanso	(Japan NIKKEI 225 Index)
Praxair	(US S&P 500 Index)
The BOC Group	(UK FTSE 100 Index)

For the awards made in 2003 the target set by the remuneration committee is such that if the company's TSR position measured over a three year period is median in respect of both comparator groups, then 40 per cent of the shares in respect of the TSR part of the award will vest. If the company's TSR position is upper quartile all of the shares in respect of the TSR part of the award will vest. If the TSR performance is between the median and upper quartile a proportion of between 40 per cent and all of the shares in respect of the TSR part of the award will vest. If the company's TSR position is below the median for both comparator groups the TSR part of the award will lapse.

The adjusted EPS performance condition is based on the company's EPS before exceptional items relative to three year targets on a sliding performance scale. For the award made in 2003 the target set by the remuneration committee requires a five per cent per annum growth rate over three years for minimum vesting. If this is achieved, 40 per cent of the shares in respect of the EPS part of the award will vest. All of the shares in respect of the EPS part of the award will vest if the company achieves a ten per cent per annum growth rate over three years. If the growth rate is between five per cent and ten per cent a proportion of between 40 per cent and all of the shares in respect of the EPS part of the award will vest. If the growth rate is less than five per cent per annum over the three year period the EPS part of the award will lapse.

The adjusted ROCE performance condition is based on the company's ROCE before exceptional items relative to three year targets on a sliding performance scale. The minimum target set by the remuneration committee for awards in 2003 is 13 per cent at the end of the three year performance period. If this is achieved 40 per cent of the shares in respect of the ROCE part of the award will vest. All of the shares in respect of the ROCE part of the award will vest if the company achieves a ROCE of 14.5 per cent. If

the ROCE performance is between 13 per cent and 14.5 per cent a proportion of between 40 per cent and all of the shares in respect of the ROCE part of the award will vest. If the ROCE is less than 13 per cent the ROCE part of the award will lapse.

In setting three performance conditions for the LTIP award, the remuneration committee took the view that these were the most important measures that drive or measure sustainable improvements in shareholder value – the TSR performance condition measures comparative performance while EPS and ROCE reflect a core part of the company's business strategy, which is to improve both earnings growth and capital efficiency.

**Executive Share Option Scheme 2003 (ESOS 2003)** Executive directors, members of the executive management board and other selected middle and senior management throughout the company's global operations participate in the ESOS 2003. The remuneration committee have the discretion to grant awards up to a maximum of two times salary. The awards made in February 2003 to the chief executive and other members of the board were based on 1.75 times salary. The performance condition set for the ESOS 2003 by the remuneration committee is that the growth in the adjusted EPS over a three year performance period must be equal to or greater than the growth in the UK retail prices index (RPI) plus three per cent per annum over the three year performance period. The performance is assessed on the company's published results. If the performance condition is satisfied at the end of the performance period then the awards would be exercisable in full. In the event that the performance condition is not satisfied over

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### Report on remuneration continued

the original three year period then the remuneration committee has the discretion to re-test performance after five years, but only where the remuneration committee believes the extension to be a fair and reasonable basis for assessing the sustained underlying performance of the company. In line with current corporate governance best practice there is no rolling re-testing of performance. The remuneration committee considers this performance condition to be a challenging performance hurdle when compared to the company's adjusted EPS compound annual growth rate over the last ten years of around four per cent.

Awards under the LTIP and ESOS 2003 may be satisfied in cash or other assets, for example, where it is necessary for legal or tax reasons. The amount to be paid will, in the case of share options, be equal to the participants gain on the exercise of the share option. Also, the remuneration committee may decide, prior to grant, that an award shall be expressed to be a right to acquire a cash sum rather than shares. This type of award, known as a phantom award, will normally only be granted to participants in jurisdictions where, because of local security laws or exchange control provisions, it is difficult to issue or transfer shares to employees. The LTIP and ESOS 2003 awards may be satisfied by using existing shares purchased in the market through The BOC Group plc Employee Share Trust or by issuing new shares.

Awards under the LTIP and ESOS 2003 are not pensionable.

**Savings Related Share Option Scheme** UK based directors are eligible to participate in the BOC Savings Related Share Option Scheme. The scheme is approved by the Inland Revenue and it is open to all UK employees with one year's service or more.

#### **Former long-term incentive arrangements**

**Executive Share Option Scheme 1995** The last grant of options to the executive directors and members of the executive management board took place in February 2002 and the last award to other Group employees took place in December 2002. No further awards will be made under this scheme. The options vest when the company's adjusted EPS growth is equal to, or exceeds, the growth in the retail prices index (RPI) by three per cent per annum over any three year performance period.

**Senior Executive Share Option Scheme, 1994 Executive Share Option Scheme, Executive Share Purchase Plan** The last grants under these schemes took place in November 1994, February 1994 and August 1994 respectively. In line with market practice at the time when these schemes were introduced the vesting of these awards was not subject to performance conditions.

**Share Incentive Unit Plan** Between 1989 and 1995 awards were made to executives under an incentive arrangement linked to the growth in the company's share price. No awards have been made under the plan since 1995. The final payment was made in November 2002.

#### **Retirement benefits**

Pension arrangements for executive directors are in line with those of comparable executives in the countries in which the directors are located.

In the UK, the BOC Senior Executive Pension Scheme is a funded, tax-approved, defined benefit pension arrangement. Where necessary, the director's pensionable pay is limited by the earnings cap provisions of the Finance Act 1989. In such cases, the company pays the director a salary supplement on earnings above the earnings cap to reflect the loss of pension coverage. This supplement is recorded in the director's emoluments and is not taken into account in calculating bonuses or any other form of remuneration.

BOC closed its UK defined benefit pension arrangements to all new employees on 30 June 2003. Pension arrangements for new employees will be provided for under a defined contribution Retirement Savings Plan. The company will make contributions to the plan equal to two times the employee's core contributions which can be three, four or five per cent of salary.

In the US, the BOC Top-Hat Pension Plan is an unfunded, non-tax-qualified, defined benefit pension arrangement.

In Australia, the BOC Gases Superannuation Fund is a defined contribution arrangement underpinned by a defined benefit guarantee for long-serving employees who were members under a prior benefit structure.

#### **Shareholding guidelines**

The remuneration committee encourages executive management to grow personal shareholding in the business over time. It is anticipated that each executive would build towards a shareholding of one times salary. The remuneration committee believes that the vehicle of the long-term incentive arrangements will facilitate the building of such a shareholding over a period of time.

Details of directors' individual remuneration, share options, LTIP awards, share incentive units and share holdings are given on pages 64 to 68. As set out in the remuneration policy statement performance related remuneration is expected to amount to about 60 per cent for each of the executive directors. The performance conditions for each current and former share option and long-term incentive plan are set out above.

### Non-executive directors

Non-executive directors are generally appointed for an initial period to the next Annual General Meeting and subject to reappointment at the meeting, for a further three year term. Subsequent reappointment is with the agreement of the board and approval of shareholders. The fees are set at a level which will attract individuals with the necessary experience and ability to make a significant contribution to the Group's affairs. The responsibilities of, and the time commitment expected from, non-executive directors have increased in recent times and fees paid to non-executives are increasing to reflect this. As a result, from 1 January 2004 the non-executive directors' fees will increase from £37,000 to £40,000 per annum, £10,000 of which, less tax, will be invested in BOC shares. The fees for chairing a

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committee will increase from £8,000 to £10,000 per annum, £5,000 of which, less tax, will be invested in BOC shares. The fee for the chairman, Rob Margetts, is set at £225,000.

The non-executive directors do not have contracts of service nor do they participate in the Group's variable compensation arrangements, its long-term incentive arrangements or its pension arrangements, nor do they receive any benefits in kind. The graph above has been included to meet the requirement set out in the Directors' Remuneration Report Regulations 2002. It shows BOC's TSR performance, assuming dividends are reinvested, compared with all FTSE 100 companies. This has been chosen because it provides a basis for comparison against companies in a relevant, broad based equity index of which BOC is a constituent member. The remuneration committee decided that other comparator groups were more appropriate as performance measurement for the LTIP. A graph showing BOC's TSR performance compared with the six major gases companies relative to respective local indices, which is one of the comparator groups chosen for the LTIP, is shown in the chairman's statement on page 5.

## **Service contracts**

The company's policy is for all executive directors to have contracts of employment that terminate on the attainment of retirement age. In order to mitigate its liability on early termination, the company's policy is that it should be able to terminate such contracts on no more than 12 months' notice, and that payments on termination are restricted to the value of salary, car benefit and bonus entitlement (calculated on the basis of the average of actual payments over the preceding two years) for the unexpired portion of the notice period. Pension provisions on termination are detailed in the individual service contracts below.

**Individual service contracts** Mr Bevan has a contract dated 5 December 2002 that can be terminated by the company on 12 months' notice. In the event of early termination, the contract provides for the payment of compensation based on the value of salary, car benefit and bonus entitlement (calculated on the basis of the average of actual payments over the preceding two years) for the unexpired portion of the notice period. Mr Bevan would also be entitled to his deferred pension, with the unexpired portion of the notice period being added to his pensionable service in the calculation of his pension entitlement.

Mr Isaac has a contract which expires on 30 June 2005 subject to possible extension by mutual agreement. The contract can be terminated by the company on 12 months' notice. In the event of early termination, the contract provides for the payment of compensation based on the value of salary, car benefit and bonus entitlement (calculated on the basis of the average of actual payments over the preceding two years) for the unexpired portion of the notice period. Mr Isaac would also be entitled to a special contribution to his funded unapproved retirement benefit scheme amounting to the sum of 40 per cent of his pay above the earnings cap imposed by the Finance Act 1989 and 50 per cent (58.33 per cent from 6 April 2003) of his pay up to the cap for the unexpired portion of his notice period.

Mr Médori has a contract dated 19 November 2002 that can be terminated by the company on 12 months' notice. In the event of early termination, the contract provides for the payment of compensation based on the value of salary, car benefit and bonus entitlement (calculated on the basis of the average of actual payments over the preceding two years) for the unexpired portion of the notice period. Mr Médori would also be entitled (a) to have his deferred pension from the UK senior executive pension scheme paid without actuarial reduction from age 55; and (b) to an immediate payment representing the discounted value of the difference in the capital values of a pension calculated as in (a) and a pension calculated as in (a) but with the addition of the unexpired portion of his notice period in the calculation of pensionable service.

Dr Rajagopal has a contract dated 1 May 1999, amended 22 November 2002, that can be terminated by the company on 12 months' notice. In the event of early termination, the contract provides for the payment of compensation based on the value of salary, car benefit and bonus entitlement (calculated on the basis of the average of actual payments over the preceding two years) for the unexpired portion of the notice period. Dr Rajagopal would also be entitled to have his deferred pension from the UK senior executive pension scheme (a) calculated with the inclusion of the unexpired portion of his notice period in the calculation of pensionable service; and (b) paid without actuarial reduction from age 55.

Mr Walsh has a contract dated 21 November 2002 that can be terminated by the company on 12 months' notice. In the event of early termination, the contract provides for the payment of compensation based on the value of salary, car benefit and bonus entitlement (calculated on the basis of the average of actual payments over the preceding two years) for the unexpired portion of the notice period. Additionally, the unexpired portion of Mr Walsh's notice period would be added to his pensionable service in the calculation of his pension entitlement.

All the above contracts can be terminated by the individual director on six months' notice.

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## Report on remuneration continued

**Directors' emoluments and compensation**

	2003 £ 000	2002 £ 000
<b>Charged against profit in the year</b>		
Salaries and benefits	2,665	2,586
Annual bonuses payable for the year	1,123	1,631
Termination payments <sup>6</sup>	1,507	
Other emoluments		500
Fees to non-executive directors	443	352
	<b>5,738</b>	<b>5,069</b>
Company pension contributions to money purchase plans	279	184
Company pension contributions to lump sum benefit plans	196	927
Provision for share incentive schemes <sup>1</sup>	387	194
Payments to former directors and their dependants <sup>2</sup>	461	52
	<b>7,061</b>	<b>6,426</b>

	Year ended 30 September 2003					2002
<b>Individual remuneration</b>	<b>Basic salary/fees £ 000</b>	<b>Allowances and benefits<sup>3</sup> £ 000</b>	<b>Termination payments £ 000</b>	<b>Bonus payable £ 000</b>	<b>Total remunera- tion £ 000</b>	<b>Total remuneration £ 000</b>
<i>Chairman</i>						