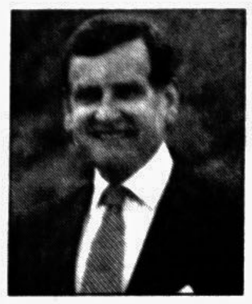


Message

Strong local positions and world class expertise are just two of the many characteristic that differentiate The BOC Group from many other industrial companies.
Nowhere is this more evident than in Bangladesh.
For more than 24 years, BOC Bangladesh Limited has been a substantial and respected member of this country's business and industrial community. However, more recently, the advantages of being part of a global organisation have come to the fore to an unprecedented extent.
The decision to invest in the new facility at Rupganj was our response to an upturn in demand for industrial and medical gases. I am confident that the state-of-the-art air separatic plant, coupled with a committed and highly skilled work force, will prove to be an unbeatable combination.
I wish BOC Bangladesh - and its customers - every success.

David john
Chairman - The BOC Group

Message

The members of the Board of Director of BOC Bangladesh are extremely happy and thankful that the Hon'ble President of the People's Republic of Bangladesh has kindly agreed to formally inaugurate the Company's prime production site at Rupganj. It contains the country's largest Air Separation Plant and Welding Plant. We are also grateful that the Hon'ble President has very kindly agreed to lay the foundation stone for a new Air Separation Plant on this occasion. The new plant will be capable of meeting the growing demand's of the economy as Bangladesh enters the 21st Century with expanded industrialisation.
Keeping in view the objective of staying on the cutting edge of technology, the Company has been maintaining a growing level of investment over the past several years. The policy of modernisation of the Company's production and management processes is being reinforced by adoption of upto date information technology and planned development of human resources. In these efforts BOC Bangladesh has received strong support from the BOC Group plc. and the concerned agencies of the government, specially the Ministry of Energy, Industry and Finance. BOC Bangladesh is always ready to take advantage of opportunities emerging from government's economic policy reforms and the effort to create a business environment friendly to domestic and foreign private investors. The members of the Board of Directors are proud to associate themselves with the efforts of the management and employees of the company at all levels in their contribution to the economic growth of Bangladesh.

Mr. M. Syeduzzaman
Chairman of Board of Directors-BOC Bangladesh Limited

BOC GROUP AND KEY EVENTS

The BOC Group, of which BOC Bangladesh Limited is a member, has its headquarters at Windlesham in the UK. The Company comprises over 100 companies operating in more than 60 countries. In each of these countries, the Group manufactures and markets one or more of its three major product lines - Industrial Gases, Medical Products, and Welding Equipment and Supplies. It employs over 40,000 people and contributes to the world-wide economies, with a turnover in excess of US $ 6 billion.

The BOC Group is one of only a handful of British companies that are truly "global" in terms of their market, management, technology and production.

1775
Oxygen is discovered by Priestley in England and Scheele in Sweden, with Lavoisier doing similar work in France.

1850
Discovery of a chemical process to extract and store oxygen from the atmosphere.

1886
Incorporation of Brin's Oxygen Company Ltd. in England on 26 January.

1887
First plant in operation, producing 142, 116 cubic feet of oxygen per day in Horseferry Road, London.

1900
Development of cryogenic processes (low temperature distillation) for separating atmospheric gases.

1903
Oxy-Acetylene welding process used in industry.

1906
Company name changed to The British Oxygen Company Ltd (23 July).

1935
Formation of the Indian Oxygen & Acetylene Co Ltd.

1948
The MIG (Metal Inert Gas) welding process is developed by the Air Reduction Company in the US (later to become Airco Inc) using an inert gas to shield the electric arc. This opens up a new market for Argon and Helium.

1950s
Steel manufacturing progressively adopt the practice of blowing oxygen through converters to increase productivity drastically and bring down the cost of steel. Oxygen demand booms as a result.

1960s
Nitrogen becomes the growth gas as its range of applications steadily increases.

Argon too become important with the increasing use of high-productivity welding processes using shielding gases which include carbon dioxide and helium as well.

1975
Company name changed to BOC international Ltd (10 April).

1981
BOC International Ltd became BOC International plc (6 March).

1982
Company name changed from BOC International plc to The BOC Group plc (1 March).

1986
BOC celebrates its first century.

1995
Change to a BOC trading identity for gases companies in India, Bangladesh, Venezuela, the pacific islands, Kenya, Curacao, Aruba, South Africa, Papua New Guinea, Korea.

Message

The BOC Group is committed to being the world's most customer focused gases company. This is a worthy intention, but an ambitious one too, when you consider that we operate in some 60 countries worldwide, and serve hundreds of thousands of customers - from welding to food processing; from effluent treatment to oil refining.
Strong and enthusiastic local companies like BOC Bangladesh Limited know better than anyone else what those customers want. Meanwhile, in return, The BOC Group has a unique ability to respond with global solutions.
Cost effectiveness and technical support are all part of the BOC 'package'.
I congratulate BOC Bangladesh on its latest investment and I am confident that it will work to the benefit of not only our company, but also our loyal customers.
Congratulations to everyone involved in the new Air Separation Plant project.

Danny Rosenkranz
Chief Executive - The BOC Group

British High Commission
Dhaka

Message

I am delighted that BOC Bangladesh Limited, which already has a long and distinguished record in Bangladesh, is now increasing its capacity to produce industrial gases in a very substantial way with the new air separation plant at Rupganj.

This considerable investment demonstrates a real long term commitment and confidence in the future growth of the economy. I am sure that confidence is well merited and I warmly congratulate BOC Bangladesh Limited for it.

DC Walker
High Commissioner

THE ORIGINS OF COMMERCIAL OXYGEN

The first commercial gas was Oxygen. Although Joseph Priestley published his method for separating oxygen from air in 1775, developing a reliable commercial process to produce oxygen proved to be difficult. By 1871, technical problems led to the spectacular failures of several companies attempting to manufacture oxygen.

Nevertheless, in 1886, two brothers, Arthur and Leon Quentin Brin, decided to set up a company to separate oxygen from air based on a process developed by the French chemist, Boussingault. Undeterred by the fact that Boussingault himself had worked for 30 years and failed to come up with a successful commercial process, the Brin brothers established the Brin's Oxygen Company Limited on 26 January 1886. In June, they engaged a young Scotsman, Kenneth Sutherland Murray, as an assistant engineer at a salary of £2 per week.

After joining the company Murray soon turned his attention to modifying Boussingault's process. This work proved to be the salvation of the new company.

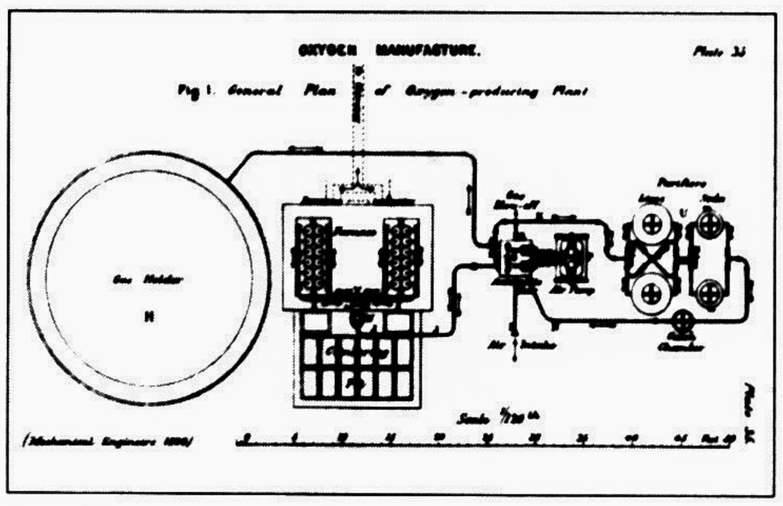
Improving the process

In Boussingault's original process oxygen was produced by heating barium monoxide, or baryta (BaO) to 1000o F (537° C) causing it to absorb oxygen from the air to form barium dioxide BaO_2 was heated to 1700° F (926° C). This released oxygen and converted the BaO_2 back into BaO.
But, as Murray notes in a paper published in January 1890 "He [Boussingault] found, however, that the barium oxide gradually lost its power of recovery ..... To the brothers Brin is due the credit of having surmounted this difficulty, and thereby paved the way for a method which within the last two years has been developed by the Brin's oxygen company into a reliable commercial process."

The Brin brothers process to which Murray refers was one he developed himself. In Murray's process the first to use pressure swing for gas separation, variations in pressure, rather than temperature, were used to bring about the oxidation of the barium. Oxidation took place, in Murray's words, "under a slight pressure", while de-oxidation took place "under a partial vacuum." In this way Brin's "were able to reduce the range of the temperature and thus to avoid the high deoxidising temperature previously employed, which had acted destructively on the baryta."

After this early success, Murray went on to become Brin's works manager in 1889. After Brin's changed its name to British Oxygen Company Ltd in 1906, Murray rose through the ranks to become first a managing director and then, in 1925, chairman of the company.

When he died in 1935, the Institution of Mechanical Engineers Proceedings featured him in a memoir noting that "Kenneth Sutherland Murray will be remembered for his achievements in making oxygen gas a commercial product."



A general plan of the oxygen producing plant described by Kenneth Murray in his paper of the Mechanical Appliances Employed in the Manufacture and Storage of Oxygen published in the institute of Mechanical Engineers Proceedings in January 1890. Murray's plant was the first to use pressure swing for gas separation.

How industrial gases are made

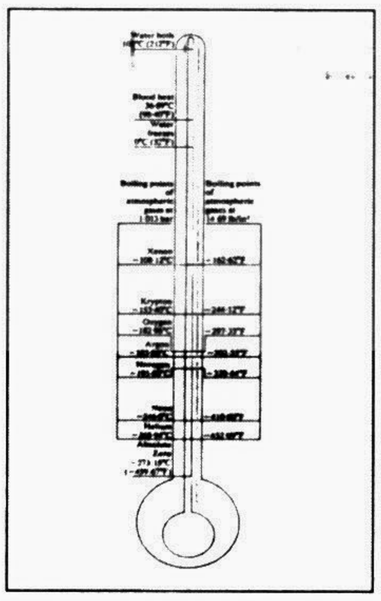
The production of gases is a well established technology. The principles behind the techniques have remained unchanged for decades.

But as a visit to a BOC production plant soon makes clear, the level of the engineering involved is high, with the aim always being to reduce the cost base of the product by making the production process as efficient as possible- a question of fine-tunning and a commitment to continuous improvement.

How an air separation unit works

The industrial atmospheric gases are oxygen, nitrogen, and argon. The atmosphere contains other gases as well, in very small quantities. The rare gases- neon, krypton and xenon - are produced by air separation. Carbon dioxide, helium, hydrogen, ozone and nitrous oxide, although present in air are more economically obtained by using other processes.

An air separation Unit (ASU) is a complex piece of equipment, incorporating many subtle design features and special material to attain high levels of efficiency. The raw materials - air - is free for the taking, but gases production is an energy intensive business, requiring large amounts of power to drive the compressors.



The principles of operation of any ASU are based on simple schoolroom physics. It is its ingenious design that enables it to extract from air even its most finely dispersed constituent, such as xenon, the rarest atmospheric gas. In a hall 75 feet by 45 feet by 10 feet high (23m X 14m X 3m), the quantity of xenon present would occupy the volume of a tennis ball.

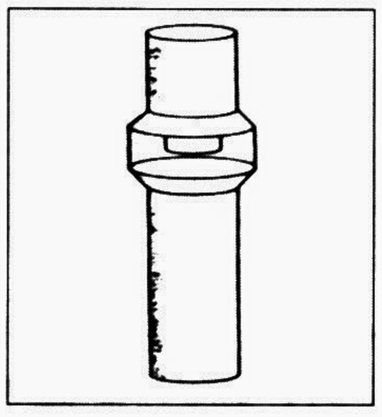
The principles of production

- When a gas is compressed it gets hotter. When it expands, it gets cooler.

- When the pressure of a gas is increased, the temperature at which it liquefies become higher. When the pressure is reduced, the liquefaction temperature falls.

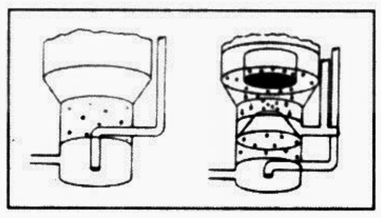
-Different gases liquefy at different temperatures. So the liquefaction points of the gases in the air, even when they are totally mixed, can be varied by altering the pressure.

There are two parts to an ASU. The first is like a large refrigerator, but instead of circulating freon gas to cool a space to around 00C (32° F) it sucks in huge volumes of air and cools it to liquefaction temperature (-170° C at a pressurg of 5.5 bars, - 274°F at a pressure of 80lb/in²) before delivering it to the second section.



The second section is where the separation takes place. It consists of a tall column divided into two parts, with the top half operating at a lower pressure than the bottom.(The pressure is above atmospheric in both halves.)

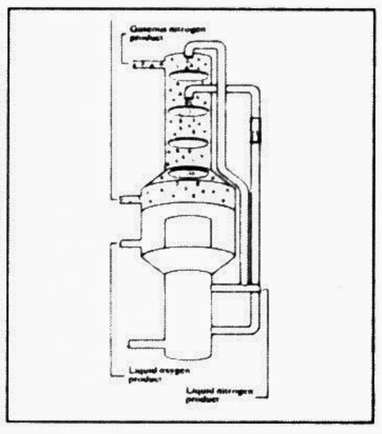
In the lower half of the column, the temperature of -170° C (-274 F) is higher than the liquefaction point of nitrogen at a pressure of 5.5 bars (80 lb /in2), so nitrogen gas evaporates from the liquid air and rises up the column, leaving oxygen-rich liquid air at the bottom. This liquid is piped up to a point near to the top of the upper part of the column.



In the roof of the lower column is a condenser, cooled to -180°C (-292 F) by liquid oxygen surrounding it at the base of the upper column. The nitrogen liquefies, drains down and is collected in a trough. From this pool of liquid nitrogen, most is piped away as product, but some is taken to the top of the upper column.

Integrated plant producing oxygen and nitrogen

Here the separation process is repeated at lower pressures and temperature. Liquid flowing slowly down the column through perforated trays becomes richer in oxygen, so that liquid oxygen collects at the base of the upper column around the condenser, where it is taken off as liquid oxygen product. Gaseous oxygen product is taken off just above this point. Vaporised gas becomes richer in nitrogen as it rises up the column and is taken off at the top as nitrogen gas product. All gases leaving the column are piped through the heat exchanger section of the ASU to cool the incoming air.



Argon, which concentrates in the upper column, is taken for further distillation in an auxiliary column to a purity of 98 percent.

Of the rare gases, krypton and xenon are obtained by distillation of liquid oxygen in a separate column and purified by an adsorption process. Neon is similarly distilled in a separate column operating at extremely low temperatures, from liquid nitrogen taken from the lower column.

Other widely used gases include carbon dioxide and hydrogen, made as a by-product of chemical processes, and acetylene, manufactured by the BOC from calcium carbide.

Helium has the lowest liquefaction temperature of all within 4oC (7.2°F) of absolute zero. It is separated by a similar process to that described above from helium-rich natural gas, found mainly in the American continent and Poland.

MAJOR PRODUCTS AND PROPERTIES

Gases Products

OXYGEN

Density 1.354 kg/m3 at 15°C & 1.13 bar
Boiling point-182.96°C at 1.013bar.

Applications:

* Steel making
* Gas welding cutting
* Brick making
* Glassmaking
* Non-ferrous melting
* Breathing gases
* Odour control
* Papermaking
* Pollution control
* Rocket fuel oxidant
* Tea fermentation
* Coal gasification

NITROGEN

Density 1.185 kg/m3 at 15°C & 1.13 bar
Boiling point-195.8°C at 1.013 bar.

Applications:

* Pipeline purging
* Tanker purging
* Road Tanker purging
* Mine safety
* Oil and gas operation
* Heat treatment
* Gas holder safety
* Glass making
* Plant purging
* Inert packaging
* Silo atmosphere
* Instrument packaging
* Food transport
* Steel making
* Electronic component
* Tissue freezing
* Artificial insemination
* Food freezing
* Freeze grinding
* Shrink fitting
* Moulding deflashing
* Scrap reclamation
* Die cooling
* Equip. cooling
* Steelworks
* Solvent recovery
* Chemicals manufacture

ARGON

Density 1.691kg/m3 at 15°C & 1 bar
boiling point - 185.86° C at 1 bar

Applications:

* Non-ferrous Welding
* Light tubes
* Steel making
* Light bulb

CARBON DIOXIDE

Density 1.872 kg/m3 at 15°C & 1 bar
Sublimation point -78.5°C at 1 bar

Applications:

* Food freezing
* Fire Fighting
* Foundries
* Welding
* Carbonation

DRY ICE

Solid Temperate - 78.5°C at 1.113 bar

Applications:

* Reaction Cooling
* Shrink Fitting
* Food Freezing and Transportation

ACETYLENE

Density 1.109 kg/m3 at 15°C & 1 atm
boiling point - 84°C at 1 atm

Applications:

* Cutting
* Brazing
* Welding
* Gouging
* Hardening
* Cleaning
* Straightening
* Line Bending
* Spot Heating

LPG (Liquid Petroleum Gases)

Liquefied Petroleum Gases (LPG) commercially as propane (C3) and butane(C4) is hydrocarbon gas that forms a liquid at normal temperature when a pressure is applied to it. Both propane and butane are clean burning gases with high calorific value and heat output.

	Density at 15°C kg/l	Vapour Psr at 40°C	Boiling point
LPG	.57 - .575	58-203	-7° -45°
Propane	.57	58 psi	-45°C
Butane	.575	203 psi	-7°C

Applications:

* Domestic
* Commercial
* Agricultural
* Industrial
* Transport
* Refinery
* Chemical
* Power Generation

Main Uses

* Heating
* Cooking
* Engine Fuel

Welding Product

FERROSPEED
General purpose mild steel Electrode.

Applications:

* Grills
* Gates
* Repair Work
* Frame Work
* Steel Furniture
* Truck & Bus bodies
* Ships Structure
* Fabrication Work

VORTIC MARINE
Mild steel all purposes Electrode.

Applications:

* General construction
* Structure & framework
* Railway Carriages, frame & bodies.
* Sheet metal work
* Storage Tank
* Ship building
* Wagons

FEROLOID
Cast Iron Machinable Electrode

Applications:

* Filling up flaws
* Blow holes & pockets

MULTICRAFT
Mild steel low hydrogen.

Applications:

* Medium & high carbon steel.
* Construction of off-shore platforms.
* LPG gas pipes and storage tanks.
* Welding of mild steel of heavy sections & Medium tensile structural steels.
* Repair of earth moving equipment.
* Low alloy engineering steels.
* Storage tanks
* Cast iron & high Sulphur steel.

Medical Product:

Our products helps patients in every aspect and stage of health care, from labor and delivery, to family doctor visits, to emergency care, to recovery, long term care, and home care.
Because of our market leadership and breadth of products, our customers can count on choice, quality, and value when they standardise on equipment and supplies of BOC Medical.
Range of Products of BOC Medical covers:

Anaesthesia:
Anaesthesia is a pre requisite of every major operation. We supply and support the following equipment's related to Anaesthesia.

* Anaesthesia Machines,
* Anaesthesia Ventilators,
* Monitors,
* Anaesthesia Syringe pumps
* Pulse Oximeters.

Operation Theatre Equipment:
Our state of art OT furniture are as follows:

* OT tables
* OT Lights
* Suction machines
* Autoclave/ Sterilizers
* Scrub Stations

Infant Care:

* Infant Warmers
* Photo therapy
* Infant Incubators
* Open Care Centre

Medical Pipeline:

* Complete Medical pipeline system for any size of Hospital/clinics