UIAA Mountain Medicine Centre Information Sheet 8

Intended Distribution: Mountaineers, Skiers, Trekkers

OXYGEN SYSTEMS FOR USE AT HIGH ALTITUDES

Introduction

These notes summarise the oxygen systems currently available for climbing at high altitudes. They do not comment on the need for oxygen or its advisability or ethics on peaks over 8000 metres.

General Information

Historically several oxygen systems have been used on expeditions. These have been:

- Closed circuit systems - using soda lime to absorb expired carbon dioxide.
- Diluter demand systems
- Constant flow systems - using an oxygen bottle @ 4500 psi (306 ATA), reducer valve, regulator (0.5 - 4 litres/minute), reservoir (usually a rubber or plastic bladder), face mask, helmet or straps. Each constant flow system has an adaptor or alternative mask to use while sleeping at high altitude.
  It is the constant flow system which has now become the most widely used - largely because of its simplicity.

CONSTANT FLOW SYSTEMS

Life Support Constant Flow System. (UK). This British lightweight system has been developed by:

Life Support Engineering Limited
Unit G
Chantry Lane Trading Estate
Storrington
West Sussex RH20 4AD
England
Tel 01903 742322 Fax 01903 475923

Further details are available from the manufacturers (Managing Director - Brian Richards) who are also a main supplier of many sizes of oxygen bottles.

Mountaineering Oxygen Breathing Apparatus - Himalaya Type.

This well established system has been used by many expeditions, and was distributed by L'Appareil Medical de Precision.

L'Appareil Medical de Precision AMP
169 Avenue Louis Roche
92230 Gennevilliers, Paris
France
Tel: +33 1798 6000

Constant flow system. (Japan)

We have no details of this system. Enquiries should be made to:

Japanese Mountaineering Association
Kishi Memorial Hall
Jinnan 1-1-1

Shibuya-Fu
Tokyo 150
Tel 0081 3 3481 2396 Fax 0081 3 3481 2395

Russian System

This system uses titanium bottles and regulators. Details are available through:

Vladimir Shataev
Mountaineering Federation of Russia
119871 MOSCOW
Luzhnetskaya nab., 8
Tel: 007-095-241-51-88 Fax: 007-095-095-248-08-14

Notes

- Masks should be comfortable and close fitting.
- Tubing should be light but non-kinkable.
- A wide variety of oxygen bottles are available. Usual weights are 3-7 kg.
- There are special regulations covering transport by air of oxygen bottles. They are not usually transported on jets carrying passengers. (See Information Sheet 7)
- In evaluating equipment particular attention should be paid to humidification, the collection of condensation and icing up of tubing. It is strongly suggested that oxygen equipment is tested for several hours in a "cold room" at -20°C.
- There are sometimes considerable delays (3-6 months) between order and delivery. It is imperative that all systems are checked and tested before an expedition.

Oxygen systems for *medical use* are widely available:

In the UK:
Vickers Medical
Priestley Road
Basingstoke
Hants RG24 9NP
England
Tel: 01256 29141

In France:
L'Appareil Medical de Precision
169, Avenue Louis Roche
92230 Gennevilliers, Paris
France Tel: 0033 (1) 798 60 00

AND, BRING YOUR BOTTLES DOWN! DON'T LEAVE THEM UP THERE.

Updated October 2002 by Dr Charles Clarke FRCP