

**NEW ZEALAND GLIDING  
ASSOCIATION**

***ADVISORY  
CIRCULAR***

**CARRIAGE AND USE OF OXYGEN**

**This is an Uncontrolled Document**

**Holder's Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

\_\_\_\_\_

**© COPYRIGHT 1999 NEW ZEALAND GLIDING ASSOCIATION.**  
No part of this Advisory Circular may be used or reproduced in any form by photocopying or otherwise, or incorporated into any information retrieval system without the written consent of the President of the New Zealand Gliding Association.

## **1. Introduction**

- 1.1 This Advisory Circular provides guidance on the following:
- The regulatory requirements for the carriage and use of oxygen in gliders
  - A description of an oxygen system
  - Guidance and precautions when handling and using oxygen

## **2. Rules on use of oxygen**

- 2.1 Operation of a glider to a height greater than 10,000 ft QNH is permitted only when oxygen is available for continuous use by each person on board for any period in excess of 30 minutes that the glider is between 10,000 ft and 13,000 ft QNH.

This allows a pilot to operate above 10,000 ft QNH but below 13,000 ft for up to 30 mins without being on oxygen. They must however have it available should they need it. This can allow a glider to achieve a Gold C Height gain with a climb to 13,000 ft QNH so long as the time above 10,000 ft does not exceed 30 mins.

- 2.2 A continuous supply of oxygen must be available and used by each person for any time they operate in excess of 13,000 ft QNH.
- 2.3 Crew members of a glider intended to be operated above 10,000 ft QNH must have satisfactorily completed the training set out in the Hi Altitude Soaring module of the Advanced Training Syllabus (Appendix 2-C of the MOAP) A log book entry to this effect satisfies this requirement.
- 2.4 No glider shall be operated above 45,000 ft QNH without the specific permission of the Director. Such permission will be subject to such conditions relating to the provision and use of oxygen as the Director may prescribe.
- 2.5 Operations above 25,000 FT QNH are considered by the Operations Committee to be unnecessarily hazardous given the hostile environment for both the pilot and the aircraft at that altitude. Pilots are advised to conduct their operations below 25,000 FT QNH unless engaged in planned high altitude flight operations.

## **3. Oxygen Systems**

- 3.1 An oxygen system consists of the following:
- Oxygen bottles (cylinders)
  - Plumbing lines
  - A regulator
  - A mask or cannula
  - Contents gauge
  - Flow meter

- 3.2 Components of the system may be permanent fixtures in the aircraft; others may be fitted as required. All components of the oxygen system must be of an approved type and be in a serviceable condition.
- 3.3 It is important to observe the manufacturer's limitations on all components of the system. For example, the regulator will usually have a maximum operating altitude specified by the manufacturer.

#### **4. Oxygen bottles**

- 4.1 All oxygen bottles should be clearly marked "Dry Aviation Oxygen". The working pressure must be marked on the bottle. The date on which the bottle was last hydrostatically tested should be stamped on a neck ring or painted on the bottle. Oxygen bottles must be hydrostatically tested to one and a half times working pressure at intervals not exceeding five years.
- 4.2 Oxygen bottles should not be discharged below a pressure of 200 lbs/sq in, otherwise condensation and internal corrosion may occur. Dry breathing oxygen must be used for charging aviation oxygen bottles. Oxygen produced for other applications, such as welding or medical, contains excess water that may freeze in and obstruct pipelines, regulators and valves of the system.
- 4.3 When an oxygen bottle is charged, a Release Note should be obtained from the supplier stating that the oxygen has been tested for dryness and purity.

#### **5. Safety**

- 5.1 Oxygen is highly combustible! It readily supports fire so keep naked flame well clear during any charging operation.
- 5.2 Oxygen reacts explosively when in contact with oil or grease. Use only clean hands and tools when working on / with oxygen system components.
- 5.3 Oxygen bottles have maximum pressure limits. Do not over pressurise them.
- 5.4 Oxygen cylinders heat up when being filled. Decant oxygen slowly to avoid this heat build up and to gain the maximum volume of oxygen for a given bottle pressure.
- 5.5 Lay transport cylinders on their side and chock them when decanting to avoid any injury or damage if one falls over or moves.