Flying High around Alexandra

April 2008

Now that we have oxygen in our club gliders you may be tempted to fly a little higher. But there are a number of very important issues to understand before heading up into the high blue yonder. The following is a summary of the correct procedures. At all times remember that you will discredit the whole gliding community if you breach any regulations and endanger yourself or other airspace users. If you don't understand anything discussed below then don't fly high, and don't fly in any controlled airspace till you've got it sorted. It goes without saying that you need to have passed the Radio Exam (where a lot of this is covered). Also you need to be QGP.

Oxygen use

On the club's website you will see more than one document describing the use of our new EDS oxygen system. You must read this and practice using the system before actually flying with it.

Each winter we will run a refresher course on O2 and the dangers of high altitude flight.

The rules state that you need to carry O2 above 10,000 ft and must use it if you have been above that height for more than 30 minutes (but less than 13,000 ft). **You must use O2 if above 13,000 ft.**

Upper Airspace

Use the latest Airways map. It is your responsibility to have this in the glider. You should buy your own copy. Know the airspace boundaries. They tend to change every few years so even the info in this doc may be out of date.

For example you're allowed to 14500 ft above Alexandra (2007) but the airspace over Clyde Dam or the Leaning Rock on the Dunstans is much lower. Look at a modern map.

Transition layer

When climbing through 13,000 ft set your altimeter subscale to 1013 hPa. When descending through FL150 set your altimeter subscale back to your local QNH. (Tip: write it on your hand when you first change).

Note the transition levels changed in November 2004.

Radio

Know how to change channels. Check out our website for details on the club radios. Listen a long while before calling ATC. Be patient. Formulate your words in you head before speaking!

Be sure of your location. This can be hard without a GPS so you should carry one. With a GPS you can give a distance (in nautical miles) and bearing from a VOR such as Mt Mary. Don't give obscure locations! Instead of "...Black Rocks" you should say "5 miles south-west of Tarras" or something similar. Remain on the ATC frequency (unless in a GAA).

Transponder

This must be on when flying in controlled airspace (i.e. higher than 14500 ft above Alexandra, or higher than 6500 ft over Cromwell). Unless advised otherwise have "1300" selected as the transponder code and use mode C.

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At present you need to be higher than about 15000 ft around Alexandra before you appear on Chch radar. Queenstown have a relay of the Chch radar. Many aircraft use your transponder as part of the TCAS anti collision system at all heights.

Wave
Ensure you've been briefed on the joys and dangers of wave flying.
Dangers include massive sink, strong winds, shifting wave clouds, and rough rotor.

VNE
Know that TAS deviates from IAS as you gain height. Most aerodynamic characteristics scale with TAS. For example stalling occurs at the same IAS regardless of height. Vne does not scale, instead you need to derate as you climb. As a rule-of-thumb, work on decreasing Vne (as indicated!) by about 1.5% per 1000 ft.

At the upper end of our flying, say 18000 ft, air pressure is about half that at MSL. IAS is under reading by 70% so you should not exceed an indicated speed of more than 70% of Vne.

Here's an example that covers much of the above (note G airspace details may not be current and are examples only)
You're climbing fast in Dunstan wave (yee-hah!), and heading toward St Bathans. Knowing this you've called up Queenstown on 118.1 to get clearance to enter G956. Give them heaps of warning (10-30 mins); don't call just before you want to use it. Turn the transponder on (some need 10 mins to warm up). As you go through 10,000 ft you'll have sorted your mask or cannula and checked you're breathing O2. Passing 13,000 ft you've set 1013 on the altimeter subscale. If cleared by ATC you can enter G956. Check the transponder code is "1300" for gliders (unless told otherwise). From now on your heights are in "flight levels" if you should be talking to anyone else.

If you are finished with G956 then let ATC know (unless someone else is now using it). Generally the 3 main GAAs (956, 957, 958) will remain open for quite some time if it's a busy wave day. However it promotes good relations to close the GAA as soon as practical as this helps ATC and saves Jet fuel.
There's no need to remain on 118.1 (or whatever freq for that GAA). However for other airspace you must remain on the ATC frequency at all times. When descending through FL150 you can restore local QNH on the altimeter.

Note: The above info is current at the time written (Jan 2005), however this is always likely to change, especially airspace boundaries, GAA numbers and ATC frequencies. Check current maps!