

AGC Weekly News

The weekly newsletter of the Auckland Gliding Club at Drury, Auckland

A blast from the past

Russell Thorne

Just been passed a blast from the past - in the Gliding Kiwi July 1955

The Auckland Gliding Club is at present operating a T31 (ZK-GAI) which was purchased as a partly finished kitset from the RAF Gliding Club, South Rhodesia. Their original two seater (ZK-GAD) is at present awaiting spoilers to be fitted. The Eon Baby (ZK-GAB) is awaiting spares from England. Ground Equipment : the club is at present using the Chevrolet tow truck, a Morris Minor on occasions for cable retrieval, and a Mercury powered winch. They have evolved a good telephone system for good communication between the winch and the starting point.

A camp was held at Waharoa at Christmas, but not very successful as the west wind required for slope soaring lasted only 2 1/2 days out of twenty. The slope itself proved very good for soaring and gave altitudes of 4000 in the T31 and 5000 in the clouds. Winch launching out of a paddock with the wire passing over three fences was tried and proved very practical.

The flying membership of the club approaches 50. The secretary is Mr Jim Harkness 1 May Road, Mangere East, Auckland.

Regards,
Russell



Some videos from Gerard



https://youtu.be/C7HSH_uqaQI?si=XPrT7yC-oG5SdJwJ



<https://www.youtube.com/watch?v=ShnJMotQAK4>

Ace the Use of Supplemental Oxygen

By Jimmy Hamilton
Courtesy Wings & Wheels

One of the riders passed out in 30 seconds, and the safety officer in the chamber, wearing his personal oxygen tank and mask, had to put this man's mask on for him.



Photo by Sean Franke

This article draws heavily from books on the subject written by professional pilots, doctors, and aeronautical engineers, from my direct interaction with some of these people over my 55+ years of flying powered aircraft and gliders and my personal experience flying gliders in the Sierra Nevada Mountains for the past 48 years.

I want to credit much of this information to Jean-Marie Clement, who has written what I consider to be an exceptional book called "Dancing with the Wind." This book is fairly technical but not so technical that the average glider pilot needs help understanding it. Chapter 12, on flying gliders at high altitudes and using oxygen, is a must-read.

For starters, in the US, this article will apply mostly to glider pilots flying in the Continental United States West of the Mississippi River. It will

also apply to pilots who fly in waves at high altitudes (generally above 10,000 feet MSL).

FAA Regulations

The FAA regulations say it is OK to fly from 12,500 feet MSL to 14,000 feet MSL for up to 30 minutes without supplemental oxygen. This would also suggest to some that it is OK to fly from sea level to 12,500 feet MSL all day without supplemental oxygen. This can be a dangerous idea to have. Physiology varies greatly from person to person and is affected by age, physical condition, and several other factors. One person may very well be OK to fly all day up to 12,500 feet, and another may experience symptoms of hypoxia at 8,000 feet MSL.

Hypoxia

Hypoxia, the lack of oxygen the body needs to function properly, even in a mild case, can cause poor judgment and slow reaction time. Two things you do not want, especially when landing.

The US Air Force used to let civilians take "chamber rides," where one could be in a metal chamber with pressure lowered until the air inside was the same as it would be at 25,000 feet MSL. The "riders" (about 10 people per ride) would have to take their oxygen mask off at 25,000 feet MSL and start doing a math problem on a knee pad. The "riders" were allowed to go without supplemental oxygen for a maximum of 5 minutes, and then you were required to put your mask back on regardless of how you felt.

I took one of these rides at Mather Air Force Base. When we took our masks off, one of the riders passed out in 30 seconds, and the safety officer in the chamber, wearing his personal oxygen tank and mask, had to put this man's mask on for him. He woke up about 20 seconds later and had no idea what happened. Two riders were still doing the math problem correctly at 5 minutes. The time of useful consciousness at 25,000 feet MSL is about 3 to 5 minutes for most people. The idea of the ride is for the rider to recognize his personal symptoms of hypoxia and put his mask back on without help. The point is to show how radically different the effects can be from person to person.

These days, technology allows one to wear a small device (an oximeter) on one's finger that shows oxygen saturation in the blood. Any percentage of oxygen saturation below 90% can be a problem, although, once again, this varies with the individual. In my opinion, a saturation level of 92% or better would be best.

Oxygen Systems

There are two types of oxygen systems used in gliders: constant flow and on demand.

Constant Flow System

The constant flow type is just what it says. Using a mask or a cannula, the flow of oxygen is constant, but the amount can be varied by adjusting a needle valve in the line to the mask or cannula. Typically, the needle valve is adjusted to set proper flow based on altitude. This requires that the valve be adjusted each time altitude is changed. As you know, altitude changes a lot in a glider.

Electronic Delivery System

The on-demand system typically used in gliders today is the EDS system made by Mountain High in Redmond, OR. This system only dispenses oxygen when one breathes in. It automatically senses altitude and dispenses the correct amount of oxygen for that altitude. This system is very efficient and uses much less oxygen than a constant-flow system.

The EDS system can be set to start dispensing oxygen at 5,000 feet MSL or 10,000 feet MSL. There are other settings, but I will discuss these two for this article. I know many people who set their EDS system to start dispensing oxygen at 10,000 feet. Once again, this will be fine for some and not others because of the difference in physiology from person to person. The problem that may arise with this setting is when one has been flying at altitudes above 10,000 feet MSL and comes back to land. The EDS system shuts off when the glider drops below 10,000 feet MSL. The oxygen in the blood now jumps from whatever your saturation percentage was above 10,000 feet MSL to some lower percentage that could be significant and potentially dangerous, depending on the individual.

Being a COF (Certified Old Fart), I set my EDS system to start at 5,000 feet MSL, and I leave it that way for the entire flight. The elevation of my home base is 4,300 feet MSL so my EDS system is on almost to the ground when I come back to land. Oxygen is cheap.

Regardless of the type of oxygen system you use and how you set it, turning your oxygen on before you enter the landing pattern is a good idea. Your brain needs oxygen to be sharp, and you really need to be as sharp as possible in the landing phase of flight.

One more thing to keep in mind when using any oxygen system that uses a cannula...you must keep your mouth shut and breathe through your nose for the system to be effective. If you are flying at 15,000 feet MSL and talking a lot on the radio, your blood oxygen saturation can drop significantly. The same goes for eating, coughing, sneezing, or unknowingly holding your breath for some reason (stress, straining to urinate, etc.). The EDS system will set off an alarm if it does not sense inspiration (breathing in) for approximately 35 to 45 seconds.

The US Air Force chamber ride is no longer available to civilians, but the FAA has a traveling booth that simulates being at 25,000 feet MSL. This allows one to experience one's own personal

symptoms of hypoxia. If the booth comes to an area near you, I would recommend taking a "ride."

Be well, and fly safe!

Jimmy Hamilton first soloed in powered airplanes 58 years ago and in gliders 48 years ago. He has been flying gliders cross-country and participating in regional and national

competitions since 1976. With 5,800 hours as Pilot in Command (PIC), including 3,800 hours in gliders, Jimmy has flown 47 different gliders and 73 different powered aircraft, encompassing helicopters and floatplanes. He holds a Private Pilot license with an Airplane Single Engine Land (ASEL) rating and a Commercial Glider Rating. Additionally, he is a former Certified Flight Instructor for Gliders (CFIG).

Member's Ads

H36 Dimona ZK-GPH for sale or syndication. Julian Elder is interested in either creating a syndicate or selling his Dimona GPH. It recently has had significant restorative work carried out. For any technical stuff contact Ian Williams (021980194 ian@agcon.co.nz) or sales information contact Julian 0276924114 julian@elder.net.nz

LX9000 V2 plus V9 Vario . SOLD.

Mini Nimbus C: Well cared for by present (second) owner since 1990. Only 1600 hours TT, no damage history. Trig TT22 transponder (ADS-B out), Flarm Power Mouse, Flarm LED display, LX-NAV S80, Ilec extended length TE probe, panel-mounted Oudie 2, new Winter altimeter, Winter mech vario, twin LiFePO batteries with twin chargers, Mountain High Ox system, Turn & bank, reliable and clear Dittel FSG40S radio. Good tow-out gear, full set outdoor covers, full set indoor covers, and other useful equipment. Imported Karl Pheifer trailer completely rebuilt 2013 – always garaged. \$45 500. Contact Peter on wooleypeter@gmail.com

IMI Power rigger (new)

Electric (battery) remote-control one-man glider rigging device. \$3180. Contact Peter on wooleypeter@gmail.com

This edition of the newsletter was compiled by Peter Wooley