NEW ZEALAND'S PREMIER SOARING MAGAZINE

Soaring NZ

YOUNG ACHIEVERS

WORLD CHAMP CONTENDERS

1000 K IN A CLUB ASTIR

CLUB NEWS

TECH TALK • ASG 29

issue 4 june/july 2008

$10.95

IMAGES THAT SOAR ABOVE THE ORDINARY

John McCaw – aviation and agricultural photographer

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contents

june/july 2008


Pg 10


Pg 13


Pg 14


Pg 17


Pg 40


Pg 23

FEATURES

10 **Steve Fosset Memorial Trophy**

13 **Todd O'Hara**

14 **Introducing our World Championship Contenders**

17 **1000km in "No Good"**

20 **What really makes aircraft fly**

28 **My kind of flying**

29 **Nelson Lakes**

COCKPIT

23 **ASG 29**

40 **Vintage and Classic** — How did we get here?

REGULARS

30 **Tech-Talk**

32 **Meterology**

34 **Tow Pilot** — Southern Belle

37 **A Question of Safety**

39 **Instructors Column** — Spin Training

42 **ab Initio** — Wing Running

43 **The Geek**

44 **Gliding New Zealand Club News**

51 **Classified Advertising**

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from the editor

june/july 2008

You may have noticed that many of the photographs in this magazine are provided by John McCaw. It is time to introduce the other half of McCaw Media. I am the writer: John, my husband provides the pictures. Depending on material supplied I often rely on John's archives to find an image to enhance a story. John has been interested in photography all his life. In his teens he converted his father's office into a dark room. With the North Otago Gliding Club flying off his family's farm, learning to fly was a natural thing to do, and gliders were an obvious choice of things to take pictures of. When I met him at Omarama in the late '80s he was CFI of the club. We are both life long gliding people and are currently members of the Canterbury Gliding Club.

He does have a day job. John is a field representative for Luisetti Seeds in Canterbury but he travels with his camera. His job allows him to photograph farmers in action, and as such he has found another area of photography, that (like soaring) benefits from the camera man being extremely familiar with his subject and what it is likely to do next.

A great passion for rugby sees him currently having fun learning how to take sports photos. Weekends find him and his long lens on the sidelines at AMI stadium making use of a newly acquired Press pass.

John is also my biggest help when it comes to creating this magazine. He makes suggestions, has ideas on articles, spots mistakes when I thought the final proof was finished, and very importantly keeps the books. He also knows how to work the vacuum cleaner. Our boys help by racing around the house yelling "Shut up, Mum's working."

We are very proud of our boys and Alex, our oldest, has announced that he doesn't want to be an All Black (sacrilege) as he wants to be a champion glider pilot. He is well on the road to achieving that. Youth members are making big achievements this issue. We have stories of two young men, Toby Read and Todd O'Hara. The boys are friends and both have fathers who have been actively involved in gliding all their son's lives. The report from Gliding Wairarapa proves that this isn't a prerequisite for young people to do well in the sport: you can read about their successful youth training scheme (along with other initiatives) in our club feature.

We introduce you to our World Champ contenders and next issue we will report on how Ben Flewett and Dane Dickinson have


Photo Alex McCaw

fared. Ross Drake's exploits will follow in the October/November issue. It would be wonderful to have a picture of a New Zealand world champion on the cover.

We must now close the file on Nelson Lakes, at least until next summer. It is incredible the number of stories that have come in from people who attended camps, courses and rallies there over the summer. Frank Saxton and his team can be very proud.

As we go into the winter it is time to hunker down and keep warm. Use some of your down time to remember what exploits you got up to over the summer and to plan new ones. Of course many of you won't be stopping flying. Lots of sites get great wave over the winter. Whatever you are up to, please remember to share it with the rest of us. Reader's stories, article suggestions and unsolicited articles most welcome.

Regards

Jill McCaw

Dane Dickinson soars over Lake Ohau in his LS 8

Photo John McCaw

next issue

World Champs – Flewett and Dickinson take on the world's best.

We look at how petrol prices affect gliding and Vaughan Ruddick and Tony Passmore start our new series on how to fly the length of the country.

Deadline for Club News, articles and pictures is 10 July and 22 July for advertising.

SoaringNZ welcomes letters from readers. You can send letters by email to soaringnz@mccawmedia.co.nz or post them to: The Editor, SoaringNZ ,430 Halswell Road, Christchurch. SoaringNZ reserves the right to edit, abridge or decline letters. Writers name and address is required and a phone number is helpful.

Kind words

I Think your "SoaringNZ" is brilliant. As a relative newcomer to the sport I appreciate the articles aimed at novices.

Philip Lister Taupo Gliding Club

More Kind words

I LUV the magazine!!!!! I read the last issue virtually cover to cover including the Editorial!!!!! It was funny and informative. As you mention, hopefully in the fullness of time, your "North Island cuzzies" will play a much better part as well!!!

Cheers and congrats on a great magazine

Jacqui Newton Taupo Gliding Club

Tigers much appreciated

I must say that I have enjoyed the new SoaringNZ magazine. Rather than getting into a discussion over which one is better (old or new) I find that the two mags compliment each other rather than compete and both are excellent. Gliding NZ is well served by two very professional publications that we can all be proud of. Your larger format certainly makes a difference when it comes to the centrefold. My father is an ex WWII RNZAF fighter pilot and top-dresser (21000hrs), the magnificent photograph of two yellow Tigers in the centre of issue 3 brought a tear to his eye.

My father was a journalist for the Auckland Star for many years after his flying career, then when the Star folded, he became the editor of Commercial Fisherman for several more years, so has much experience with similar publications to yours. He commented that this was a very professional magazine and he likes to read it.

I have been towed to 2000 agl behind a Tiger once, out of Taupo. The flight was memorable for two reasons, it cost me over $70.00 and took most of the afternoon to get to 2k! Nice to see so many of them still being lovingly looked after and more especially, flown. A couple of days before my tiger tow, that same Tiger climbed Mt Tauhara on a good ridge day, then turned his engine off and soared with the rest of us for quite some time. I was impressed with its ability to climb even though the lift was pretty strong. Not to be out done, he even flew back to Centennial Park for a dead stick landing with the rest of us.

Because of my building project I have had to put my gliding on hold. Other than my occasional Duty Pilot slot and once a month committee meeting, your magazine is my only contact with the sport, so please keep up the good work, I look forward to each edition. I'm hearing lots of folk around the field, talking about how good it is so I guess they are all getting used to the change and surprise, surprise, it is at least as good as the old one if not even better.

Thanks for having the courage to take on what must have been a very daunting project. I look forward to many years of subscription to SNZ.

Warren Pitcher RNZAF Base Auckland Aviation Sports Club

Feedback from ab Initio article

I have had some good feedback from last month's article on the Pre Landing Checks. Of particular note is this suggestion from John Goddard who commented as follows:

> "A minor comment: I am in favour of encouraging students to operate the airbrakes briefly through to full travel, rather than just unlocking and relocking them, without making a big deal about it. NZ gliding has had at least one outlanding accident which a full travel brake check might have pre-empted; this was where a pilot at a late stage of his approach into a paddock found that his elbow was blocked behind by a loose object in the cockpit which prevented him applying more than about half brake (and the wheel brake) - camera, water bottle or similar junk – and he overshot/overran through a fence. He was an experienced old hand so was really surprised to be caught out by this Murphy... I suspect that his cockpit hygiene improved somewhat afterwards, as well as adopting a full travel brake check in his pre-landing checks."

Thanks for the good suggestion John; I have revised my thinking and now support the check of full brake travel in the Pre Landing Check. I also encourage all pilots to pay particular attention to where and how they stow extraneous objects in the cockpit throughout a flight.

Roger Read Canterbury

Do We need Airways Corp?

The position of Airways Corp. is not terribly surprising. It is an unusual organization that actually has no real use. In 1984 the Air Traffic Controllers in the U.S. went on strike and the President (Ronald Reagan) sacked them. The devastation and loss of life predicted never happened. The net result was a large saving in money and little else.

It could be argued that ATC is needed for the larger international airports, but even then the case is not strong apart from an international treaty perspective.

They also claim to be self funding. Sorry, there is no such thing as a free lunch and while either ACNZ or CAA may not be a drain on the taxpayer they are a drain on the aviation industry. I have not heard of one person outside the ACNZ or CAA offer any praise for the service. Most people are afraid of the vindictiveness to openly criticise these organisations.

Ardmore is touted as the busiest airport in N.Z. and survives well without ATC. All the proposed doom never materialised. Lets be honest if ACNZ vanished no one would notice.

There are some ironies; the Deputy Director of CAA was made to hold in his Discus near Christchurch because a Commercial flight had taken off from Hokitika.

The bureaucrats have come up with lots of gadgets to make us safer. The ELT's proved to be useless. In the case of the Ansett crash at Palmerston North, rescue was co-ordinated by passengers with cellphones. We have transponders, which were never going to be any use and proved themselves so with the crash of the helicopter onto the mountain at Raglan. The ELT's were no use there either. I would love to know of how many aircraft crashes have been found because of ELT's.

The new ones will be better! Yeah Right!!

I presume that Transponders were intended to provide tracking and avoid collisions, but I believe that to avoid clutter they don't register below 2000 feet. I am not aware of any random blue sky crashes that have ever occurred in New Zealand, what few collisions that happen are usually either at airports or events. Gavin Wills worked out that if every aircraft in the South Island flew randomly permanently there would be a crash every 800 years. So the CAA had to come up with the concept of an "Air miss". This is where something doesn't happen, but you get to report it anyway, an interesting concept.

Readers will be aware of a crash when many Russian school children were killed when a Swiss ATC vectored two aeroplanes into the same place.

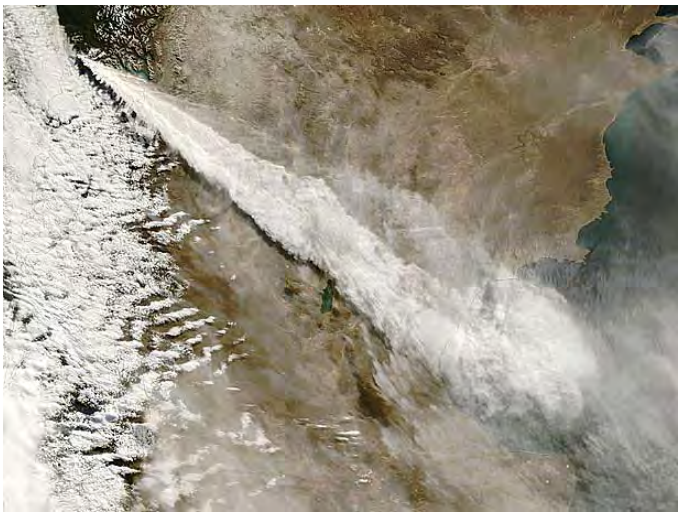
This can be used by the powers that be to make TCAS mandatory, to avoid any potential crash. It won't do much for gliders.

Interestingly the improved precision provided by the humble GPS has the effect of putting aeroplanes in the same track from say Auckland to Wellington and vice versa. If you think we have these problems to ourselves, talk to someone in the building industry about the council bureaucrats.

Neville Cameron Hauraki Aero Club

VOLCANO ERUPTION

Satellite photo of a volcano erupting in Chile near the area that Fossett and Delore flew from on their record setting attempts. Notice the spectacular wave system!



The GNZ Website is up and running again.

The website has been languishing following the death of webmaster Trevor Atkins earlier in the year. Max Stevens has announced that GNZ recently signed a contract with Media Suite Ltd (George Wills) for redevelopment of the website. George will also be the initial webmaster for a year or two until it all settles down (he will do this bit voluntarily, wearing his gliding hat). It is planned to have the new site finished by early July. All will be revealed at the AGM, where George will be giving a presentation.

new zealand EVENTS CALENDAR

17-21	November 2008	Matamata Soaring Centre Cross Country Course	**Matamata**
16-22	November 2008	South Island Regional Gliding Championships	**Omarama**
30 Nov-06	December 2008	Northern Region Gliding Championships	**Matamata**
05-16	January 2009	National Multi-Class Gliding Championships 18m, 15m, Standard, Open, and Club Classes	**Omarama**
17 Feb - 1	March 2009	National Sports/PW5 Gliding Championships Sports/PW5 Classes	**Matamata**
22 Feb-1	March	Matamata Soaring Centre Contest	**Matamata**
2-8	March 2009	Central Districts Championships	**Waipukurau**
16-20	November 2009	Matamata Soaring Centre Cross Country Course	**Matamata**
22-28	November 2009	Northern Regional Gliding Championships	**Matamata**

A SUSTAINER SYSTEM THAT WASN'T

On the first of April the following appeared on Lange Aviation's website. It created great interest and your editor was asked to follow up and find out how the test flight went.

04.01.08: Lange Aviation GmbH has the pleasure to announce the expansion of the Antares product palette with a new 18m self sustainer, the Antares 18P.

... For propulsion, the Antares 18P utilises sustainer engine which is based upon pulse jet technology.

I'm sorry folks, check that date. Andor Holtsmark of Lange Aviation has this to say:

"I am afraid that The Antares 18P was a slightly too realistic April fools joke.

A pulse jet converts more fuel into even more noise and even less thrust than a normal jet engine. Even the most desperate German engineers of 1945 had to conclude that the pulse jet was not suited for manned flight, although it worked fine on the V1 buzz bomb.

We are currently working very hard on a self sustainer engine installation, but it is a conventional system using the Solo 2350 and a two blade propeller. Although conventional in basic specs, we believe that we can turn it into a quite interesting self sustainer solution."

Not everyone however was taken in. Holtsmark reports that among the many queries and orders received was this one:

Dear Herr Lange,

I would like to buy your new Antares 18P airplane. My colleague from Nairobi will contact you soon about the payment arrangements.

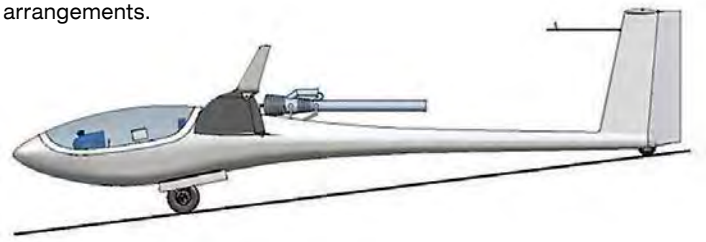


Photo Bernd Weber

A NEW JET SUSTAINER SYSTEM

On 23.4.2008 Swen Lehner flew Schempp-Hirth's Ventus-2cxa for the first time with a jet-sustainer unit. The "a" cockpit is wider and has more leg space making it ideal for larger pilots. However the place inside the fuselage behind the seat is still small and the only reasonable solution for an engine was the small Olympus Jet from the company AMT. The additional weight of the Jet system in the fuselage is only approx. 8kg, with an additional 10 kg weight caused by the wing tanks. The jet has a fuel consumption of approximately 0.6 to 0.8 litres per minute. Therefore is it necessary to install larger capacity fuel cells. For this reason the prototype airplane is equipped with three tanks. Schempp-Hirth report that the first flights confirmed expectations and a climb rate of 0.6 to 0.7m/sec with full power setting was achieved.

A month after the test flight Makoto Ichikawa of Japan flew his new Ventus-2cxa at the Dutch nationals. He came in first. He was delighted with the glider. It has, he says, "... super handling and unbelievable gliding performance at high speeds, in addition (it is) a glider which climbs outstandingly well with high wingloading."

At SoaringNZ we appreciate a good photo and the effort involved in taking it. The photos used in this story were provided by Bernd Weber, from the sales department at Schempp-Hirth. The name of the castle which may look familiar to some as it features in many iconic German soaring photos taken over the years is Teck. The factory is in the town of Kirchheim nestled under the castle. Weber took the photos with his Nikon camera with an 18-50mm lens, with the lens through the open panel of the canopy of a Discus-2cT. Tilo Holighaus was flying the new Ventus. The canopy window is only just large enough for the camera lens and it meant the need for precision flying to get the Ventus in the viewfinder. This was achieved without the use of radio as between holding the camera and flying the glider Weber had no free hand.

Qualifying Grand Prix Events 2008/9

For those that may be keen to try their luck at this type of racing, the table below lists the sites, dates and contact persons of the Qualifying Grand Prix events in 2008 and 2009.

GRAND PRIX QUALIFYING CALENDAR

EVENT	LOCATION	CLASS	CONTEST DAYS
Torino SGP	Torino	15m	17-21 June 2008
SGP of France	St. Auban	15m	1-6 Sept 2008
SGP of the UK	Lasham	15m	1-7 Sept 2008
SGP of Slovakia	Nitra	18m	7-13 Sept 2008
SGP of Australia	Narromine	18m	30 Nov-6 Dec 2008
SGP of Chile	Santiago	15m	17-25 Jan 2009
SGP of Poland	Zar	Club	26 Apr-2 May 2009
Austrian SGP	Feldkirchen	15m	16-23 May 2009

A preliminary intent to bid has been received from the USA but there are no precise details at this time.

FOLLOW UP

In follow up to the story last issue on the scorching of Southern Soaring's Duo Discus headrest Chris Rudge reports, "I have contacted the factory and they were as surprised as I was. They have also sent a replacement headrest free of charge - nice blokes!"

LANDOUT HAZARDS

A female pilot posted the following question on www.gliderforum.com.

"As a female glider pilot, who is soon to start cross country flying I was just worried about my safety when landing out. Many of my male pilot friends say they have gone into random house and cars with farmers. And I am bit worried about my safety in that situation."

In this day and age, sadly this is a reasonable question and she did get some helpful answers. She also got this one.

"First worry about making a safe landing!! ... It's the trees, wires, fences, animals, etc. that you should look out for ... A well known local pilot once landed in a field and a piglet walked up to the glider when he opened his canopy and he gave it a cookie. The piglet wanted more so it put its feet on the cockpit sill. The pilot pushed it away and the piglet squealed. This infuriated its mother who was nearby and she ended up chasing the pilot around the glider for an hour ... Juan Carlos"

ENERGY ABSORBING FOAM FOR SCHEMPP-HIRTH GLIDERS

Since the beginning of April, all Schempp-Hirth aircraft are exclusively equipped with cushions made from energy absorbing foam. This foam absorbs the shock energy through its deformation characteristics. In the event of a crash this cushion substantially aids in the protection of the spinal column from injury. The cushion feels somewhat more firm and is a few millimetres thicker. Nobody notices the difference of the seat cushion from the outside. Schempp-Hirth are also pushing the use of the NOAH bailout system in their gliders.

ANTARES DLR-H2

Lange Aviation has entered into partnership with the German Aerospace Centre (DLR) to perform research and development into fuel cell technology for aircraft propulsion.

Pic, artists conception – Lange Aviation

The research aircraft and its propulsion system is substantially based upon the Antares 20E, a self launching powered sailplane, which already has been in series production for some years. Two additional external pods, which house fuel cells and fuel tanks, are added underneath the specially strengthened wing. In the future, the performance of the aircraft may be increased substantially by using up to four external pods, or by using fuel cells of an improved design.

This aircraft is not a joke. Still in the concept stages the Antares DLR-H2 is being built by Lange Aviation while the DLR Institute for Technical Thermodynamics prepares the fuel cell system, which is used as the primary propulsive energy source. This system is practically identical to the fuel cell system which is to be used in large capacity aircraft. The energy delivered by this system is fed into the electrical power train, which has been developed and certified for aviation by Lange Aviation. The power train consists of power electronics, motor and propeller.

As global air traffic continues to rise, so too does fuel consumption and emissions. The utilisation of fuel cells will, according to the agenda of the German Federal ministry for Commerce and Technology, make a significant contribution to reducing the problems of consumption and emissions. The German Aerospace Centre (DLR), which is the German equivalent of NASA, was commissioned to perform the required research and development.

DLR owns and operates an Airbus A320 ATRA (Advanced Technology Research Aircraft). The fuel cell technology developed on the Antares aircraft will then be used as auxiliary power for the Airbus. Following that, the permanent deployment of an improved fuel cell system in large capacity airliners is envisioned. The primary goal of these efforts is to test fuel cells under operational conditions, and thus to qualify them as reliable auxiliary power supplies for civil aviation.

The cooperation between DLR and Lange Aviation has been constructed as a long term partnership between equals, so that the research aircraft is available to DLR until 2017. DLR provides the power source and defines and evaluates the research assignments, while Lange Aviation designs and builds the research aircraft. In doing so, Lange Aviation can build upon a decade of experience in designing and building aircraft with electrical propulsion. Lange Aviation will also operate the aircraft for the DLR.

A further application for the combination of fuel cell systems and other regenerative energy sources may very well be as propulsive power source for HALE (High Altitude Long Endurance) capable aircraft, which, according to the current state of knowledge, will be equipped with electrical propulsion.

Andor Holtsmark of Lange Aviation is enormously excited about the project. He says it has the potential of saving civil aviation huge amounts of emissions. Personally, he says, he finds it fitting that, just like in Lilienthal's day soaring is being used to drive the technical state of aviation forward. And this is a highly cost effective way. He is also delighted with the long term government contract with his company.

STEVE FOSSETT M

There is a new piece of silverware on offer to South Island pilots and it is a little different to other awards. The Steve Fossett Memorial Trophy is Terry Delore's tribute to the friend and flying partner who was responsible for the most exciting six years of Delore's life; a way to leave something of Steve Fossett in New Zealand. Because, says Delore, for the short time that Fossett was here in the South Island he had a huge impact on people in New Zealand Gliding.

The criterion for the award is that the recipient must reflect Fossett in some way. A huge ask, as according to Delore Fossett embodied efficiency, planning, challenge and ultimate performance, both at a personal and achievement level.

However there are no set criteria for the award. This year the award went to a junior member because Delore and his judging team thought that the growing youth movement is one of the most exciting things they have seen in gliding. Steve Fossett was a big supporter of Boy Scouts and youth initiatives and Delore felt that a youth award was appropriate. Next year the award may go to a completely different aspect of gliding.

It will remain a South Island trophy as Fossett did his New Zealand flying from Omarama. Delore reports that Fossett was "chuffed" to be invited to become an honorary member of the Canterbury Gliding club. Delore intends that the trophy be presented at Omarama every Easter at the end of the summer season.

Delore will organise the award for the first year or two and after that wants to hand it over to either Gliding New Zealand or the Omarama Soaring Centre, or both, to administer. He will pass on a fixed format, protocols and guidelines on choosing appropriate recipients.

Once it was decided that the Memorial award should go to a junior pilot this year, the selection process was very hard. All the southern junior members were considered, many of whom have made amazing progress and achievements in their flying. Toby's father Roger Read was on the judging panel and they nearly didn't choose Toby because of that. It was a close call between Toby and two other high achievers but in the end, when looking at what all three had done and how they went about it, Toby was a deserving winner.

Delore says that Toby is becoming a very competent soaring and cross country pilot. "He has a good handle on it." He quietly gets on with his planning. He has a level head and "doesn't bite off more than he can chew." He continually strives for excellence, a characteristic reminiscent of Steve Fossett. Delore was impressed. Steve Fossett would be delighted with the inaugural winner of his memorial trophy.

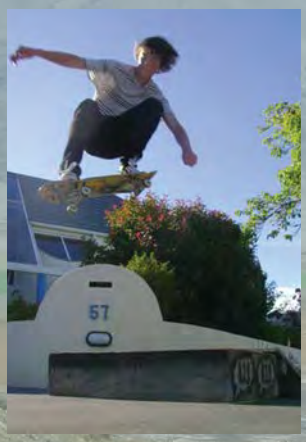
TOBY READ

He is a skilled skateboarder and his snowboarding is so good that he has been offered sponsorship to compete around the country. He declined the offer because this year is his NCEA year (5th Form) and he would miss too much school. At school he gets good reports and has achieved every credit so far towards his NCEA. He flies radio controlled model aircraft and gliders. When he soloed on 25 January 2005 at age twelve he was the youngest glider pilot to solo in the country at that time. Described as level-headed and charming, he is a young man with a great future. Fifteen year old Toby Read is the inaugural winner of the Steve Fossett Memorial Trophy, and he is thrilled.

Toby grew up on airfields. His dad Roger, ex air force and currently a B777 pilot for Air New Zealand, has been an enthusiastic glider pilot all of Toby's life. Roger bought a log book when Toby was born and gave it to him, all neatly filled in with the thirteen flights Toby had had with him, when Toby turned ten. Toby has

A delighted Toby Read accepts the Steve Fossett memorial trophy from Terry Delore at the Fossett Memorial Celebration at Omarama

EMORIAL TROPHY



Toby launches his radio controlled model glider

Photo: John McCaw

Photos Read Family

always wanted to fly, but his dad waited until he was twelve years old (Toby says until he was tall enough and brainy enough) to start teaching him. Solo, he says, was only the starting point. It got exciting after that.

It did get exciting. Toby has his Silver Badge, Gold Height, Diamond Height and his A and B certificates. His QGP is held up due to his age. The latest he has heard on that is that he can have it, but without a passenger rating until he is sixteen.

Toby's career goal is to be an airline pilot like his dad. His gliding goals are a little more ambitious. He wants to do a 1000k before he is twenty, get two seater and altitude records, but most importantly, he wants to beat his dad's records. Roger Read and Peter Coveney set the NZ gain of height record of 10566 m (34666 ft) in 1987. Toby says, "If you don't have goals you don't get anywhere. Otherwise you just do your usual everyday things."

He is hoping to get into the Walsh Memorial Flying School with a scholarship to get his power rating. From there he plans to work on his hours, a tow rating will help with that, and then get work in one of the small airlines before moving on to Air New Zealand.

A founding member of Youth Glide Canterbury, Toby wants to become an instructor – "as soon as I can." He wants to be involved in passing the sport on to newcomers. As such he thinks that Youth Glide is a great idea. There is a great sense of team amongst the group. "It is good," Toby says, "to do it with your peers. It makes it easier and more fun. When we are learning together it is all we talk about." He does plan to stay involved in gliding, even when he is older and working, "like Dad."

Steve Fossett was one of the people that Toby looked up to. He followed his exploits, had been very privileged to look at the Perlan project DG 505 when it was at Omarama and had met Fossett at a gliding club occasion. "He seemed really genuine. The trophy is a real honour. It is just great!

TODD O'HARA
WINS HELICOPTER SCHOLARSHIP

Photo John O'Hara

Another multi-talented young pilot is making his mark in aviation. Auckland Aviation Sports glider pilot Todd O'Hara has won a scholarship offered by Heliflight for a Private Pilot's Licence (Helicopters). Worth $25,000 it comprises 50 hours helicopter flying to a PPL(H) and has to be completed within 6 months. This involves a reasonable time commitment. Todd has university four days a week so can do three days a week full time flying (including weekends) plus holidays.

Eighteen year old Todd has always been keen on helicopters. He was one of around one hundred and fifty people who entered the Heliflight scholarship earlier in the year. Those people all did a paid twenty minute trial flight and then the top five were short listed. Todd made it through to the top five. The five then had to sit two exams, FRTO which Todd already had, plus Human Factors. He passed those and then went back for a second one hour test flight paid for by Heliflight. This flight was an hour of hovering, circuits and a full autorotation – to load the candidates up and see how they coped with pressure. An hour long interview with the CFI completed the examination and was followed by the usual 'wait for the results'.

In May Todd was called with the news that he had won the scholarship.

Interestingly Todd is a good mate of Toby Read featured elsewhere in this issue. The boy's fathers flew gliders together as teenagers at Hobsonville in the mid 1970's and the families have remained good friends ever since.

From a young age Todd would come out to the field with his father when he was instructing or towing, and was soon driving the tractor and riding as a passenger whenever he could. He learned to fly gliders when he was tall enough to reach the rudder pedals and soloed at thirteen at Whenuapai. At that stage (before Toby Read) he was the youngest pilot to solo in the country. He received his QGP in 2006, has gone on to get his passenger rating and is presently waiting for an instructors' course.

He also became involved in Air Training Corps at thirteen and is now a Cadet Under Officer and Basic Flight Commander at No. 30 ATC Squadron at Whenuapai. In 2007 he attended the ATC National Flying Scholarship at Woodbourne and soloed in a Cessna 152 after about 2.5 hour dual. He raised the flag at the recent Anzac dawn parade. He's captain of his squadron's shooting team and active in bushcraft camps and a variety of ATC activities.

Todd is studying for a Bachelor of Business at Auckland's AUT and loving it. He has so many interests besides flying and business that he doesn't think he can settle down to one career. He jokes about owning a hunting company that shoots out of helicopters.

He is due to start in flight training in July, during the university holidays. That hunting company is one step closer.

Todd in the front seat of the Twin Astir over Whenuapai. Photo taken by his good mate Toby Read who was in the backseat.

Dane Dickinson

Ben Flewett

INTRODUCING OUR WORLD

30th FAI World Gliding Championship 2008 World Class, Std class, Club Class

30th FAI World Gliding Championship 2008 Open, 18m, 15m Class

New Zealand has three pilots competing in the World Championships in Europe this year. While many New Zealanders may be familiar with one or two of these pilots, there are probably not many who know of all three. They have diverse soaring backgrounds and their preparations and build-up to the competition are all different. They won't even all be competing at the same time.

World Championships have become so large that there are now two contests with the classes spread between them. There are actually six chances to be a World Champion now, seven if you count the Grand Prix.

In Lüsse near Berlin in Germany from the 2nd – 26th August the Open, 18m and 15m class titles will be contested. Before that however Rieti, an area in the centre of Italy, will host the World, Standard and Club Class from the 6th – 20th July. Both contests are billed as the 30th FAI World Gliding Championship. They only thing is, they happen in different places at different times.

We have two pilots competing at Rieti: Ben Flewett and Dane Dickinson. Ross Drake is representing New Zealand at Lüsse.

Team manager for the Rieti group, Sue Wild gives us this update. The New Zealand team now comprises two pilots, Dane Dickinson and Ben Flewett, and nine keen supporters. Team clothing is on the way and all the paperwork is in place. Most of us will stay in a rambling ancient farmhouse swathed in ivy and surrounded by sunflowers. We're looking forward to 40 degrees at launch time, followed by balmy evenings under the vines, dining on antipasto and wood-fired pizza.

BEN FLEWETT

Ben and his wife Kat are based in England but Ben is definitely a Kiwi. He has represented New Zealand in the World Grand Prix where he achieved a hard fought second place having led the points into the final day. Ben won the inaugural NZ Grand Prix in 2006 and was placed seventh in the 2003 World Championships. Ben's team mate John Coutts won the 2003 Worlds and together they brought the World Soaring Cup home to New Zealand.

Having taken up gliding at sixteen because power flying was too expensive, Ben became part of a group of "young guns" who quickly moved into competition flying. Apparently they challenged each other to go further and faster, often to the extent of scaring their instructors.

Ben is quoted as saying "If you present a group of males with any form of vehicle, sooner or later, a subset of this group will use said vehicle to race each other. Cars, boats, planes, jet skis, bikes, gliders, shopping trolleys – anything. To me, the glider is the ultimate vehicle in which to race. Competition gliding is a unique mix

Ross Drake

CHAMPIONSHIP CONTENDERS

of weather, technology, physics, psychology, strategy, adrenaline, and excellent company. You can't beat it."

Conditions in England, where Ben is living, have not been conducive to hours of practise flying. Not, according to Ben, for the last thousand years actually! Ben has had three flights totalling around 300 kms and it's not for want of trying. However he will have nine days of alpine flying in the south of France before the Rieti comp and intends to make the most of every minute.

DANE DICKINSON

Dane grew up in Wellington where he still lives while he decides what to do with his life. He can't decide whether he ought to go to university or get a job in the real world. He was sporty, playing cricket, soccer and rugby while at school, all of which are nothing like gliding. He says he tries to take an easy-going approach to most things. There is too much stress in being serious! Dane says he enjoys music (cliché but true), movies, art, skiing and good times with mates: sounds like he's writing a bio for a social website!

Dane started gliding in 2001 (age 15). He had radio controlled models and flew flight sims until a trial flight for his birthday got him hooked on the real thing.

Most of Dane's flying was in the North Island until 2004. He then moved to Dunedin to study at the University of Otago (majoring in Chemistry, Physics and Philosophy), finishing his Bachelors degree in 2007. This year is a year off for gliding, but he is considering going back for an honours year in 2009. While at Otago, he made the most of the opportunity to fly at Omarama, frequently driving up on the weekends.

Dane tells us this about his preparations:

World Gliding Championships run for two weeks. The preparation involved is more like 20 weeks.

Since returning to NZ from overseas in December I have managed some good flying over the summer including a 1000 km flight (see article on page 17). But for the last six weeks the weather has not been co-operating. I have spent this time organising my next two months. I am taking my glider ZK-GZN - LS8 with me. The tail fin is being remarked with the contest number A8 at the moment.

The administrative and logistical issues associated with just getting to the Worlds are nearly as challenging as the actual flying! These include: licence conversions, medical certificates, FAI sports licensing, international flights, accommodation, glider shipment and temporary importation, glider insurance, health insurance, access to a vehicle, vehicle insurance, logger calibrations, back-up instruments, spare equipment, towropes, entry forms, liability forms, local maps, phrase books, support crew, cell phones, and fine tuning the glider.

I am eagerly anticipating getting to Europe to enjoy warmer weather and to settle back into a gliding routine. To prepare for the contest flying I have planned five weeks of practise in Spain, France and northern Italy before even arriving in Rieti. This should get me back into the "groove" and will allow me to work on some specific aspects of my flying as well as building overall experience. I have also spent considerable time analysing the GPS traces of my previous contest flights and comparing these against the other pilots. This has been very beneficial and I have identified several underlying trends, strengths and weaknesses of my competition flying. I believe that gaining an excellent understanding of your own abilities,

Ross Drake's landout in the pre-world was filmed for a German documentary.

limitations, and personal psychology is of paramount importance for the contest environment. The Rieti Championships stand to be a fantastic competition with numerous high-calibre pilots attending and a great task area for fun, fast, challenging racing.

ROSS DRAKE

From his base in Switzerland, Ross Drake is well on track with his preparations for the World 15m Class Competition in Lüsse in August. Ross, a Kiwi, has been living, working and flying in Germany for twelve years. A recent change of jobs after many years with the Toyota racing team saw him move to BMW Sauber in Switzerland He is a sought after employee with great skills in composite components and in building and outfitting monocoque shells; skills he originally learnt in the Schempp-Hirth factory when he first went overseas.

Ross, son of well known New Zealand identity Bruce Drake, found it difficult to get into gliding in Germany initially as he had no New Zealand "official" glider license to show his Chief Flying Instructor. He eventually got a United Kingdom license and joined a club in Cologne four years ago. He won a contest there and that allowed him to go on and compete at a higher level. In July 2007, sanctioned by GNZ and representing New Zealand, he flew in the Lilienthal Glide Pre Worlds Contest at Lüsse near Berlin. In Germany there are so many pilots and contestants that you have to win a local contest to be allowed to enter a national one. The national contests are then broken up into various classes and held separately. Ross gives us an update on his preparations for the Worlds.

For me my preparation began about midway through the German Nationals last year when I booked accommodation for this year in a holiday home 6 km from the airfield. I had to confirm this in January which was difficult because at this point I was still not confirmed (as a competitor by Gliding New Zealand).

Roland Stuck has offered me an ASW27 for the competition. All I have to do is pay the insurance. It is a good deal to me, and I am very thankful. Strangely enough the glider manufacturers that I used to work for couldn't help me, so AGAIN I will be flying a competitor's product. Maybe the German mentality is different.

I have decided to leave the LS6 (my own glider) based in Germany as it is better for flat land soaring compared to Switzerland. It also had difficulty keeping up with the field at the Pre Worlds in Lüsse last year.

I have booked a week in Lüsse for the end of June to do a bit more on-site training with a couple of friends, and hopefully explore some more of the area. Due to the fact that the ground there is very sandy, it heats in various places more than others. These hot-spots are critical to finding the quick way, or the last way home in the evenings. It is a simple case of local knowledge.

I have the possibility of flying the 27 on the occasional weekend before the comp as well as the training week. Currency in the glider shouldn't be a problem as my last club in Germany had one that I flew a reasonable amount.

My crew arrives 20 July, (Mum and Dad finally confirmed that they would see this one out and that would be it for crewing at world contests for them) and we all drive together on the 24th to Lüsse. This also gives me a weeks practise there, and time to make sure everything works the way I want it to.

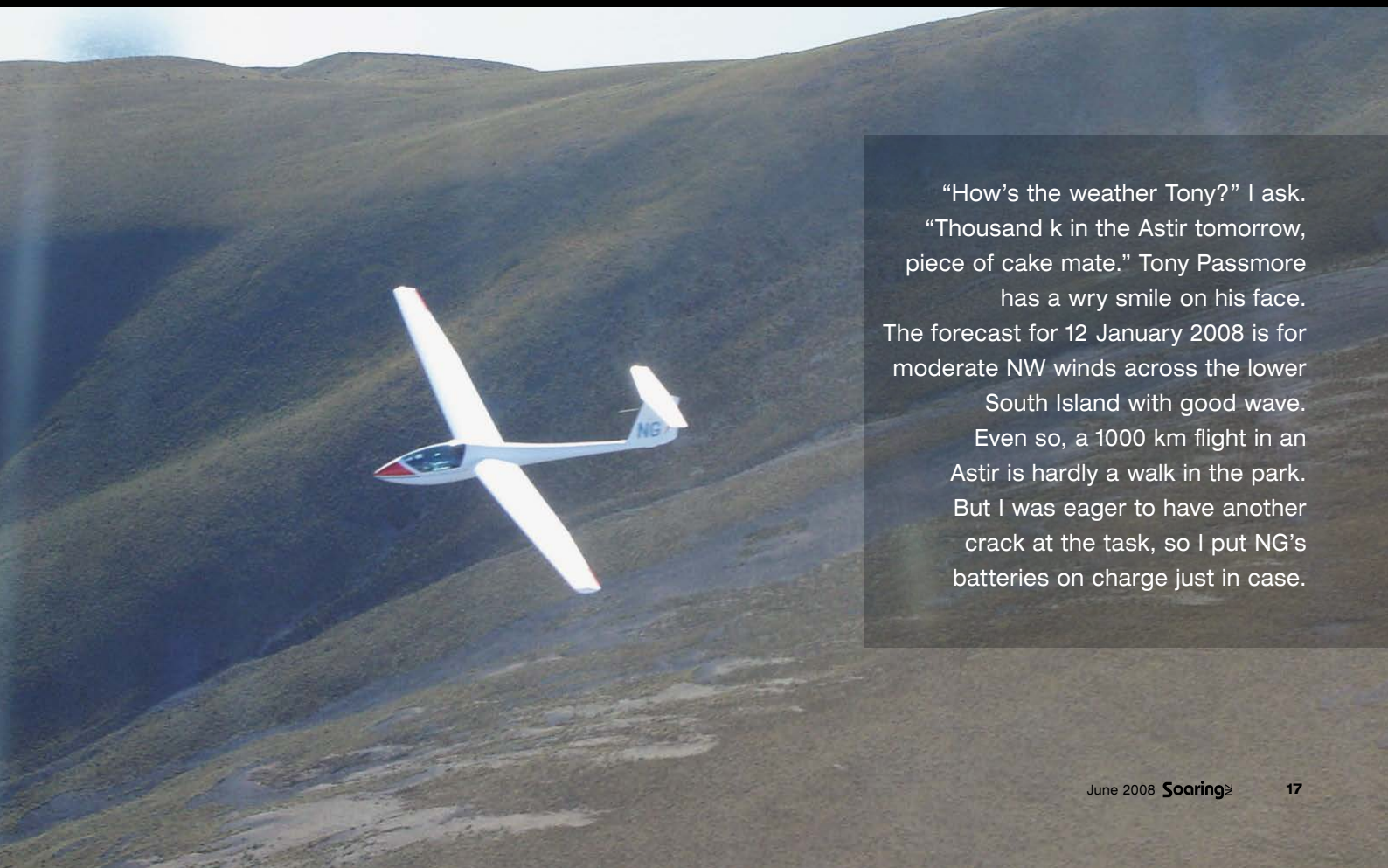
As far as physical training goes, it is too damn cold here to be outside running as the snow is now finally melting, but that is on the program and as we are still 3.5 months out it shouldn't be a real issue. It is not as though I am completely out of shape, and the alcohol consumption has been reduced to help this! (No joke!)

So, this is how my preparations are shaping up. Time in the air is critical and I am hoping the German summer will be kind to me this year as last year was a bit of a disaster. Time will tell. I have a planned 30 days for flying before I go to the comp, so providing the weather is ok I should be able to achieve 100 hours and be reasonably current.

1000KM IN "NO GOOD"

THE FLYING PIG (AN ASTIR)

By Dane Dickinson



"How's the weather Tony?" I ask. "Thousand k in the Astir tomorrow, piece of cake mate." Tony Passmore has a wry smile on his face. The forecast for 12 January 2008 is for moderate NW winds across the lower South Island with good wave. Even so, a 1000 km flight in an Astir is hardly a walk in the park. But I was eager to have another crack at the task, so I put NG's batteries on charge just in case.

ZK-GNG is a Grob 102 Standard Astir III. It is a great club class glider with retractable undercarriage, a roomy cockpit, stable flying behaviour, a large wing area for weak thermals, and it can even carry 90 litres of water ballast. Despite their redeeming features, all Astirs seem to be the target of constant mockery from glider pilots. Concrete swan, flying brick, grubby grob, and whistling failure are just some of the passing comments I have heard. NG has even been bestowed with its very own unflattering nickname "No Good". I have also been told (incorrectly) that "astir" is the German word for "pig". With such a reputation, I was even more motivated to complete my 1000 km in NG.

I had made my first 1000 km attempt in early 2006 on the conventional Omarama "yo-yo" (Omarama – Waiparu – Totara Peak – Waikaia – Omarama). I had to abandon that flight about halfway through the task. The problem I faced was 90 knot winds above 19,000 feet. Those conditions made the prospect of flying downwind to the Totara Peak turnpoint very unappealing because of the subsequent 50 km windward push over 8/8 cloud.

After that flight I studied the maps for an alternative task. Totara Peak is a problematic turnpoint because it is subject to too many variables. Not only is the wave system less defined near Totara, but the Christchurch airspace is less accommodating than the Queenstown glide sectors, and the tendency of the rotor cumulus to become an 8/8 blanket in the surrounding area means that escape options are reduced. I thought that there must be a 1000 km task that avoids Totara Peak altogether.

It occurred to me that the answer was to incorporate a remote start and finish. The task I settled on was Glentanner (start) – Waiparu – Mt. Chudle – Waikaia – Glentanner (finish) with FAI sectors for 1000.8 km. Although this task means that you fly an additional 150 km if you are based at Omarama, it allows you to utilize the best wave lines and eliminates the difficult headwind leg when returning from the northern turnpoint. I recorded this task in the GPS and left it for over two years until the right day came.

The roar of a Pawnee woke me at around 6 am. There is nothing more motivating than that sound. I rushed out to ready the glider. The morning was bright, calm, and blue. But a few distant wisps of rotor cu to the north confirmed the wave was working. After a couple hours of preparation, including half an hour of searching for the right sized EDS oxygen regulator (thanks Warren), NG was ready to go.

By the time I towed down to the grid and got the thumbs up from my official observer there was a healthy 10 knots on the ground. I launched just after 9 am, with a fantastic takeoff between two lines of active sprinklers. After a surprisingly gentle tow I ridge soared up to 6000 feet before pushing north towards the Buscot. I soon found myself in partial wave and at about 8000 feet I was properly connected with a climb rate of 15-20 knots. I edged my way towards Glentanner to make a start at 10:01 am.

It had been over a year since I had flown NG and I had nearly forgotten about its lovely nuances. These characteristics became very apparent on a good wave day. The canopy shrinks in the cold to provide superb air conditioning together with a comforting shrieking whistle, the water ballast leaks out of the loading holes creating large icicles that protrude from the top surfaces of the wings to help with the drag profile, and the recently reduced VNE of 89 knots becomes an excellent performance feature when flying in 50-60 knots of breeze.

Although there were no lenticular markers, the lower rotor clouds allowed me to follow the wave reasonably well. However, the lower performance of NG meant I had to adopt a cruise-climb approach to the task as opposed to a long constant glide. This method worked well as I could find excellent "hot-spots" of 10+

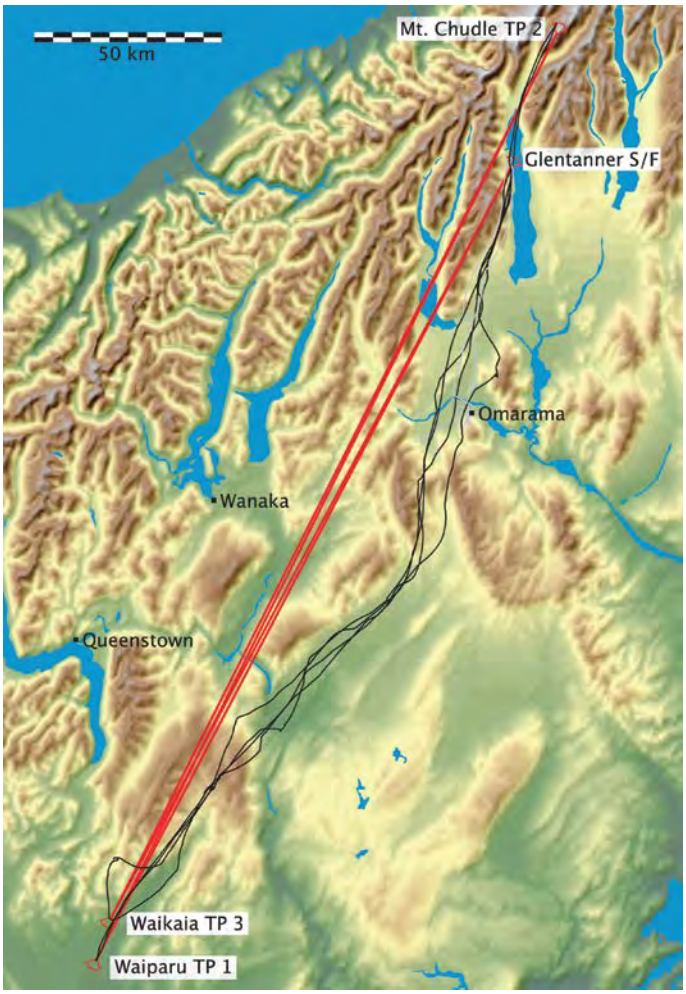
knots and use these to climb high before making a dash to the next area of good lift. The most difficult sections of the task were the occasions where I had to push upwind to follow the wave. On these upwind glides, my knuckles would go white, as NG would lose well over 5000 feet in a couple minutes.

I made good progress and by 1 pm I had less than 600 km to go. But as I flew north past Omarama, I drifted too far downwind and dropped out of the wave. After 20 minutes of warming up and a careful assessment of the situation, I re-entered the wave near Clearburn and was on my way again.

The rest of the task was considerably simpler as I could retrace my previous path with the GPS to stay in the best lift. The only slight hiccup came upon approaching my finish at Glentanner when I realised that I wasn't going to have enough height to finish within the required 3280 feet of the start altitude. I had to backtrack and climb in 4-5 knots just to be sure.

Finishing the task was a rather anticlimactic moment, and although the flight was quite tedious, it was also satisfying to have completed the task after all the preparation. The day turned out to be very good, with eight other gliders also covering over 1000 km. I managed to complete my task in 6 hours 43 minutes for an average speed of 149 kph.

I hope this flight will demonstrate to those critical of Astirs and other club class gliders that sailplane performance is irrelevant for successful long distance cross country. Gliding is the epitome of the mental game. It is a constant campaign that tests confidence, comfort level, nerves, information processing, and clever thinking. So often we glider pilots succumb to imaginary obstacles – assumptions about glider performance, misinformation from other pilots, unsubstantiated theories about the weather, irrational fear – and we give up before we have even begun. Just remember, it's all in your head.



WHAT REALLY MAK

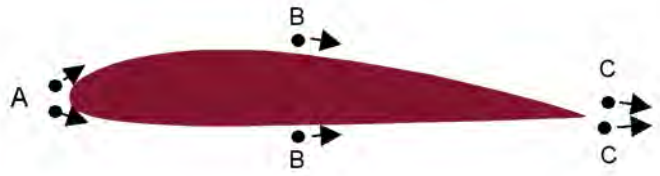
By Nelson Pomeroy

Nelson was a biologist at Massey University in the 1980's, he then moved to Hastings and operated a bumble bee production unit during the 90's. The last few years he has been teaching high school science and maths. He's been gliding for ten years, is QGP but calls himself an "unambitious" pilot.

He started instructor training a few years ago. A tutor spun him with several rotations down to 500 ft agl and then gave him control whereupon he ran out of sky trying to do a normal circuit and had to be rescued. Nelson concluded perhaps he didn't have the nerve for the job.

More than a hundred years ago Otto Lilienthal explained aerodynamic lift correctly and clearly. His explanation was that when an air stream met a (curved or flat) plane at an angle, the air must go down to fill the space above the plane, effectively imparting a downwards acceleration to the air. The downward momentum of the air made for an upwards force on the aerofoil. A curved plane had the advantage that the air stream was led downward in a gentle way in contrast to the flat plane which caused an abrupt change in direction and more turbulence.

This simple and accurate description was overtaken in the 1920's by Ludwig Prandtl's work which developed aerodynamics into a more quantitative and predictive science. Somewhere along the line there was an illustration of Prandtl's that showed air flowing over the top of the wing meeting the trailing edge at the same time as air flowing under the bottom, and this may be called the "principle of equal transit times", "the hump theory" or "the path-length theory".

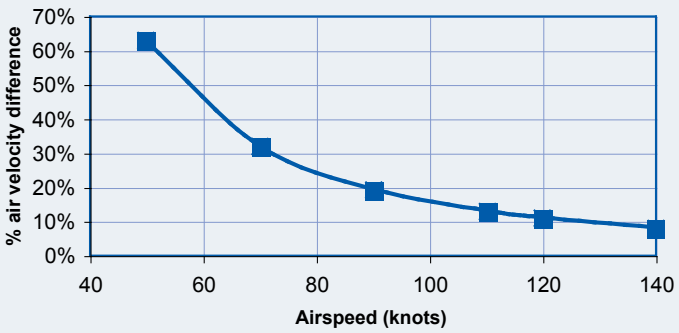


The path-length theory argues that since distance over the top is greater than over the bottom of an asymmetrical aerofoil, the top air must go faster than the bottom air to reach the trailing edge at the same time. It then uses Bernoulli's theorem, which states that accelerated air exerts a lower pressure than slower air, to show that the pressure on the top of the wing is lower than on the bottom, creating a net upward pressure, i.e. lift. This explanation is not seen in the NZGA or BGA training manuals, but persists in school books, some internet sites, and is frequently heard in hangar talk and even instructor explanation to students. It is wrong and should be abandoned.

The hump theory is wrong

I solved the Bernoulli equation for the wing area of a Cessna 172 at 1000 kg at sea level air density using different air velocities over the top and bottom of the wing. You can see on the graph below that in order to generate enough lift to hold the aircraft up the difference in top and bottom air velocities needs to be 10–60% over the airspeed range for this aircraft. The difference in path length over the top and bottom of the wing is less than 2% so the principle of equal transit times, based on distance travelled, is nowhere near enough to explain the lift.

GRAPH 1 Relative air velocity over top and bottom of wing: Cessna 172 at 1000kg



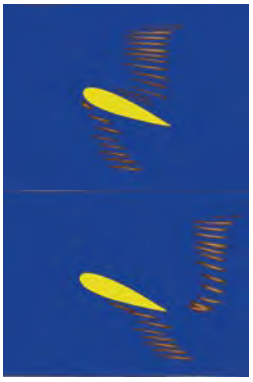
The two streams of air going over the top and bottom of a wing do not reach the trailing edge at the same time. Numerous practical experiments have demonstrated this. The usual method is to make a video recording of pulses of smoke added to an air stream flowing over an aerofoil in a wind tunnel. On You-tube you can see such a video produced by the University of Cambridge.

The row of images is taken from this video.

The Bernoulli theorem is not wrong, just mis-used

It merely states that, under certain conditions (that are pretty well satisfied by small aircraft wings) there is an inverse relationship between velocity and pressure, i.e. if air is accelerated the pressure becomes less, and vice versa.

KES AIRCRAFT FLY?



The Bernoulli principle makes no statement of cause and effect, just that changes of gas velocity are associated with changes in pressure. The variations in air velocity over the wing are inevitably correlated with the variations in pressure that create the lift, but the traditional explanation has the cause and effect back to front!

The variations in pressure are the primary cause of the changes in velocity, not the other way round. There is no principle of physics or engineering to say that an air mass will simply speed up by itself, and certainly not because it has an appointment with another mass of air that it wants to meet at a certain time.

Many folk will invoke the venturi effect at this point to defend the old approach. The half-venturi image is an analogy but doesn't work as a causal explanation: a venturi accelerates air because the flow is constricted, but pretending a wing is half a venturi makes no sense because the flow over a wing is not constricted – there is no invisible barrier above the wing. The upper surface of the wing has the whole sky for the deflected air to move into.

The acceleration of the upper air stream is related to the angle of attack.

As the angle of attack increases (up to stalling angle) the speed of the top air flow relative to that under the wing also increases and is associated with the extra lift at higher angles of attack. This acceleration of the top air in proportion to the angle of attack happens with symmetrical and even flat plate aerofoils.

It is sometimes "explained" that the increase in lift with angle of attack is due to the separation point migrating further down the leading edge as the wing is tilted up, thus increasing the relative path length of the top versus the bottom air. The separation point indeed migrates towards the lower surface, but not far enough to account for the extra velocity of the top air flow from an "equal transit times" model.

A closer look at the physics

Air has mass

Each cubic metre of air at sea level has a mass of over one kg. Of course it doesn't weigh anything if you measure it while it is held up by a lot of other air. Just like a plastic bag of water won't weigh anything if you weigh it under water.

Anything with mass requires force to accelerate

Now this is where the layman's physics gets shaky. Weight is the downward force of an object and varies with "g" manoeuvres, is less on the moon, etc. An object's mass is the same everywhere, and so is its inertia and momentum. So a 5 kg shot-put in a zero gravity space ship would be just as hard to (horizontally) accelerate as on earth, and would make an equally large dent when it hit the wall. Newton's 2nd law states: Force (newtons) = mass (kg) x acceleration (m/sec/sec)

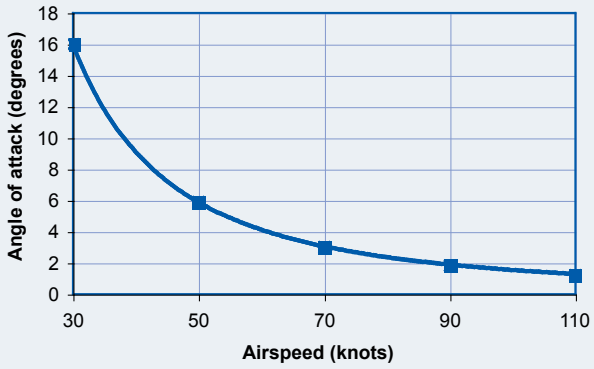
Wings accelerate air downwards.

If you force something to move there is a "reaction" force in the opposing direction

When you fire a bullet the gun recoils. A plane recoils forwards when the prop accelerates air backwards. A wing tends to be lifted when it accelerates air downwards. We should be able to make a crude test of this idea by working out how much air a wing accelerates down and see if the figures make sense of the lift required.

Let's take a Piper Cub weighing 600 kg with a wing span of 12m and chord of 1.67m. For a particular angle of attack (AoA) and airspeed you can estimate the downwash velocity but need to know the volume and hence mass of the air that is forced down by the wing. In order to get a starting point with a known airspeed and AoA, lets take the pre-stall condition. Say the Cub wing stalls at 16° and at 600 kg it is just holding itself up at 30 knots (17 m/s). From this we can estimate the amount of air the wing is diverting. With an angle of attack of 16° the net lowering of the air from leading to trailing edge is 0.48 m (from the tangent of 16° over a length of 1.67 m). So the air goes down 0.48 m in the time that the wing travels one cord distance. At 17 m/s this time is 0.097 seconds. If the air initially at rest manages to go 0.48 m in 0.097 seconds, it has a mean speed of 4.92 m/sec. If this speeding up from rest takes 0.097 sec. the acceleration is 2 x 4.92 / 0.097 = 101 m/s/s. The mass of air accelerated can thus be deduced: 600 kg of lift is 5870 newtons and force = mass x acceleration. How much do we need to multiply 101 by to get 5870? The answer is 58 kg, which equates to 48.5 cubic meters of air. Since the wing area is 20 sq m, the air for a distance of 2.42 m above the wing must be diverted to account for the lift. This distance is not greatly affected by airspeed or AoA according to the experts.

GRAPH 2 Angle of attack required to support a 600 kg Piper Cub



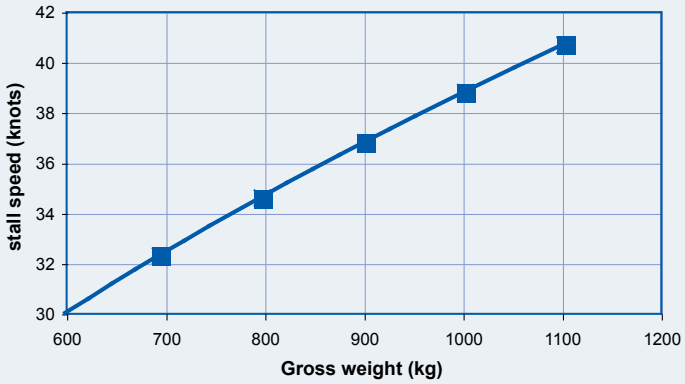
So now we have estimated the volume of air diverted by Cub wing we can demonstrate some interesting trends: Graph 2 shows how the required angle of attack diminishes as airspeed increases. In all cases 600 kg of lift is generated but as the wing passes through more air it doesn't need to divert as much for each metre it travels, so it can use a flatter AoA.

Graph 3 shows how if we accept 30 kts as the stalling speed at 600 kg gross wt, the stalling speed must increase at higher loads, in order to divert increasing amounts of air each second.

There is a simplification in the above figures: more air is actually downwashed than estimated because some of the energy is used up in upwash as the air recirculates after the wing has passed. So

the actual height above the wing that the air is diverted is greater than my figure. But graphs are accurate indications of the trends relating angle of attack to airspeed and load.

GRAPH 3 Effect of load on stalling speed of a Piper Cub



How do wings shove air downwards?

Because the wing meets the air at an angle there is a potentially dead space behind the "hump" in which there would be a vacuum if the air did not rush down to fill it. Provided this down rush of air happens smoothly, it carries on with its own momentum past the trailing edge as downwash. The downwashed air loses momentum and gradually recirculates back up to where it came from after the wing has passed. The "downsuck" is also caused by the viscosity or stickiness of air – the tendency for it to stick to the wing surface and to itself. So the airflow naturally follows the contour of the wing. This is called the Coanda effect. The low pressure behind the hump not only draws air down from above but also pulls air back from the front of the wing, and the Bernoulli effect of this rapid draw-back over the leading part of the wing accounts for the great amount of lift there.

Why do wings stall?

Wings stall when their angle of attack to the relative wind is too great. Remember that air has mass, and has inertia to being accelerated. If the air flow is made to change direction too abruptly it fails to flow along the wing surface, breaks away and forms turbulent eddies. Instead of smoothly shooting off the trailing edge as downwash, some of the air bubbles up again. Aircraft designed to fly slowly with lots of lift like Piper Cubs and Fletchers have fat wings with a high camber. This allows them to fly at a higher angle of attack without stalling because the air can more easily get around the curve than with a flatter wing. The Robertson STOL modification for Cessna Skywagons includes a drooped leading edge that similarly lessens the abruptness of the curve of the air flow at high angles of attack.

Does it matter?

Presumably we teach aerodynamics on the assumption that it enables the pilot to make more sense of how the aircraft flies, how the controls work, and why things can turn to custard. A Bernoulli type of explanation is not really intuitive, and when linked to aerofoil geometry (the hump theory) becomes genuinely misleading. An explanation based on the diversion of air, in relation to angle of attack, speed and load, is technically correct and explains the critical aspects of flight more clearly.

Pilots continue to fly their aircraft at too high angle of attack, and meet the consequences. Please think about how we teach them.

SOURCES AND FURTHER READING

www.allstar.fiu.edu/AERO/airflylvl3.htm. Article by D F Anderson and S Eberhardt. A fuller version of many of the ideas in this article, with details of their book Understanding Flight ISBN 0-07-136377-7

www.regenpress.com. Article by Gale Craig with details of his book Stop Abusing Bernoulli!- How Airplanes Really Fly, ISBN 0-9646806-2-9

http://www.youtube.com/watch?v=6UlsArvbTeo This is the video from University of Cambridge Engineering dept., showing air streams over an aerofoil. The series of images above were copied and recoloured with permission of Dr Holger Babinsky.

The Simple Science of Flight by H Tennekes (An analysis of flight from insects to jumbo jets, without a single reference to Bernoulli) ISBN 0-262-70065-4

http://www.safeflight.com (Angle of attack indicators for gliders)

ASG 29
The latest 18m racer from Schleicher

By Bernard Eckey

Bernard Eckey is the Australian Schleicher agent.

Schleicher's new 15/18 meter flapped glider struck up a love affair with pilots while still on the drawing board. The entire production was sold out for almost two years prior to its maiden flight. Two years later production remains in full swing and the factory has had to introduce a weekend production programme to ensure that the waiting list does not grow too much longer.

In those two years, competition results have the gliding world excited. In quite a few recent major competitions only three ASG 29s competed but all finished up on the podium. Obviously the design team around Michael Greiner got it right. The ASG 29 is the new measuring stick in the 15/18m class.

From any angle, the aircraft is a work of art. The slender appearance with clean and flowing lines highlights the fabulous aspect ratio of 30.4. If you are not impressed looking at the photos you should be. It is a beautifully crafted glider. You can be forgiven for thinking you are looking at an open class ship.

The roomy fuselage has retained all the safety features for which Gerhard Waibel received an OSTIV award. Automatic control connections are standard and so is the hydraulic disc brake on the large 5.00-5 main wheel. Schleicher's philosophy of enhancing competition scores by looking after the pilot and by providing a comfortable working environment was implemented once again with the cockpit built to the highest ergonomic and safety standards. But that is not new. The fuselage and tail plane are both largely identical to the ASW 27B.

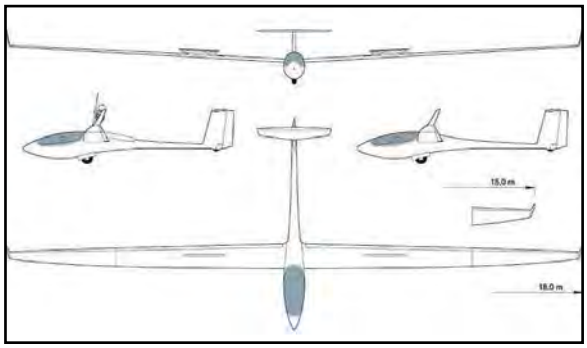
The wing design however is totally new – but the wing section is not. "Why change a winning formula?" remarks Michael Greiner. "There is nothing better on the horizon than the well proven wing section of the ASW 27, the best performing racing class glider on the market." Wind tunnel tests confirmed that performance enhancements cannot be achieved by modifying the wing section but by optimizing the wing layout and by selecting a high aspect ratio wing.

It is the wing, or the lack of it that gives the ASG 29 a performance gap to similar gliders. Due to an extremely lightweight design (even the prototype tipped the scales at only 284 kg) the wing area could be reduced to 10.5 m². A smaller wing creates less drag and importantly, a smaller wing area allows a higher aspect ratio. This boosts performance, especially during circling and low speed flight.

A pair of exchangeable outer wings and clever wing layout means that the ASG 29 is not just a trendsetter for the new 18 meter FAI class but also remains the top gun in 15 meter racing class. The 4-part wing is easily joined by a spring loaded catch at a strategically placed joint. The outer panels don't contain any control mechanism or water ballast tanks so their weight is only 15 kg each and the total weight of each wing could be reduced to a remarkably low 82 kg.

The wing features unusually long and stylish swept-back winglets. The design team took advantage of a softer wing with a natural bending of the wingtips in flight. This design trick is already successfully applied on Schleicher's open class ships, the ASW 22 and ASH 25. Apart from a slight reduction in induced drag it provides superior pilot comfort due to improved turbulence absorption. Pilots not being tossed around get less fatigued, they get more enjoyment from the sport and they perform better towards the end of a flight. This, plus a comfortable and roomy cockpit, has a greater effect on competition scores than most top pilots dare to admit.

At 284 kg including optional tail tank, the ASG 29 is very light. Even so a Super Light version is available reducing the weight by another 15 kg. However, putting 170 litres of water in the wing tanks plus an additional 35 litres in the fuselage turns the ASG 29 up to speed. With its maximum takeoff weight of 600 kg the wing loading is a whopping 57.14 kg/m² and at a speed of 80 kts the polar curve points to a stunning glide ratio of just below 50. The higher the cruising speed the greater the performance difference to other gliders of this class. Not even the best of today's open class aircraft can match it.



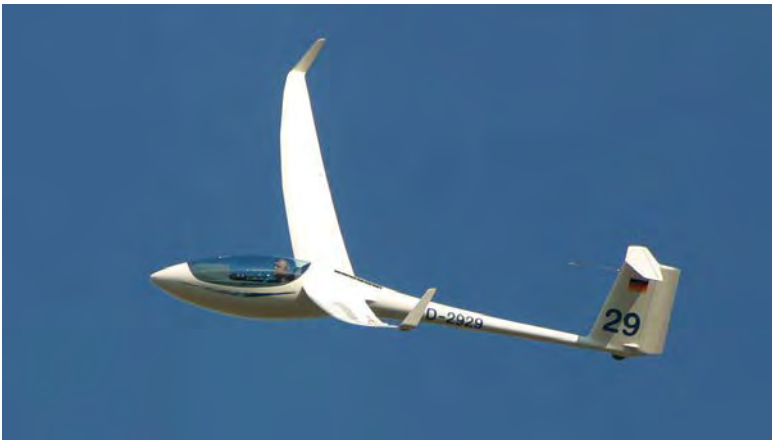
A large water inlet (located on top of the wing near the wing joint) makes ballasting straightforward and the newly designed mechanical water jettison system allows all ballast to be dumped in under 4 minutes.

The design brief was to give the 18m wingspan ASG 29 the same rate of roll as its smaller ASW 27 sibling. This was achieved by re-designing the flap/aileron mixer and by increasing the control deflections. Only 3.5 seconds for +/- 45 degrees bank angle changes is a truly excellent result and will ensure that pilots can chase even the smallest pockets of lift. The tall winglets ensure a clean airflow right to the end of the long ailerons and beyond.

The ASG 29 is an exceptional aircraft in terms of its speed envelope featuring a speed limit well over and above other 18m aircraft currently on the market. In recent years task speeds have been exceeding the Vne of older fiberglass gliders. The new generation of gliders is likely to be operated at much higher cruising speeds and withstand higher loads than previously, especially aircraft with a polar curve as shallow as the ASG 29. Vne of the ASG 29's is as high as 285 km/h (154kt) with a maneuvering speed of 210 km/h (113kt) and a g-load envelope of +5.4 and –2.65g.

Pilots are talking about the superb handling and the aircraft's feedback on the location of up-draughts and the strongest pockets of lift. Competition pilots know only too well that a single turn in the wrong direction can decide the place on the podium and whether a glider "talks" to the pilot or not often accounts for hundreds of points after a long competition. This is where the ASG 29 really shines. It possesses the pleasant handling Schleicher customers have come to expect and is a delight to fly but its ability to point the pilot in the right direction has proven to be the competition winner on more occasions than one.

The ASG comes with an optional engine. Schleicher has chosen the same power-plant already providing excellent and reliable service in the ASW 28-18E. This lightweight 18hp SOLO 2350 two-cylinder engine is equipped with a direct driven 1.2 m diameter 2-bladed propeller and is extended/retracted by an electrical spindle drive. The ASG 29E climbs at a rate of just over 2kt or 1m/s.



Ease of operation and reliability were the main design objectives. Therefore, the drive unit includes a decompression valve for air-starts, no starter motor, choke or throttle. Spinning the propeller is courtesy of the airflow. A convenient single lever engine control system is neatly integrated into the left cockpit console. The correct starting and retracting sequence is dictated by a simple mechanical device reducing the pilot workload immensely.

The engine can be quickly removed but as the additional weight is only 44 kg and the glider carries the weight with ease this should not be necessary, even at top level competitions.

The patented NOAH system is an optional extra in all versions of the ASG 29 and ASW 28. This enables glider pilots to make a quick emergency exit from the sailplane even if impeded by a low seating position and high g forces, such as in a spiral dive after a collision or other mid-air emergency. On activation an air cushion (built into the seat) blows up and lifts the pilot to the level of the fuselage rim in about 1 second. The seatbelt is automatically released. Inadvertent activation is impossible while the canopy is closed. The folded air bag, only a few millimeters thick is located under the seat cushion. Total weight of the system is only 3.5 kg.

In addition, Schleicher is soon going to introduce a ballistic recovery system for their current range of single seat gliders allowing for a parachute descent of aircraft and pilot after a mid-air emergency. Final testing is currently under way but the ballistic recovery system is only available for pure sailplanes – not those with an engine.

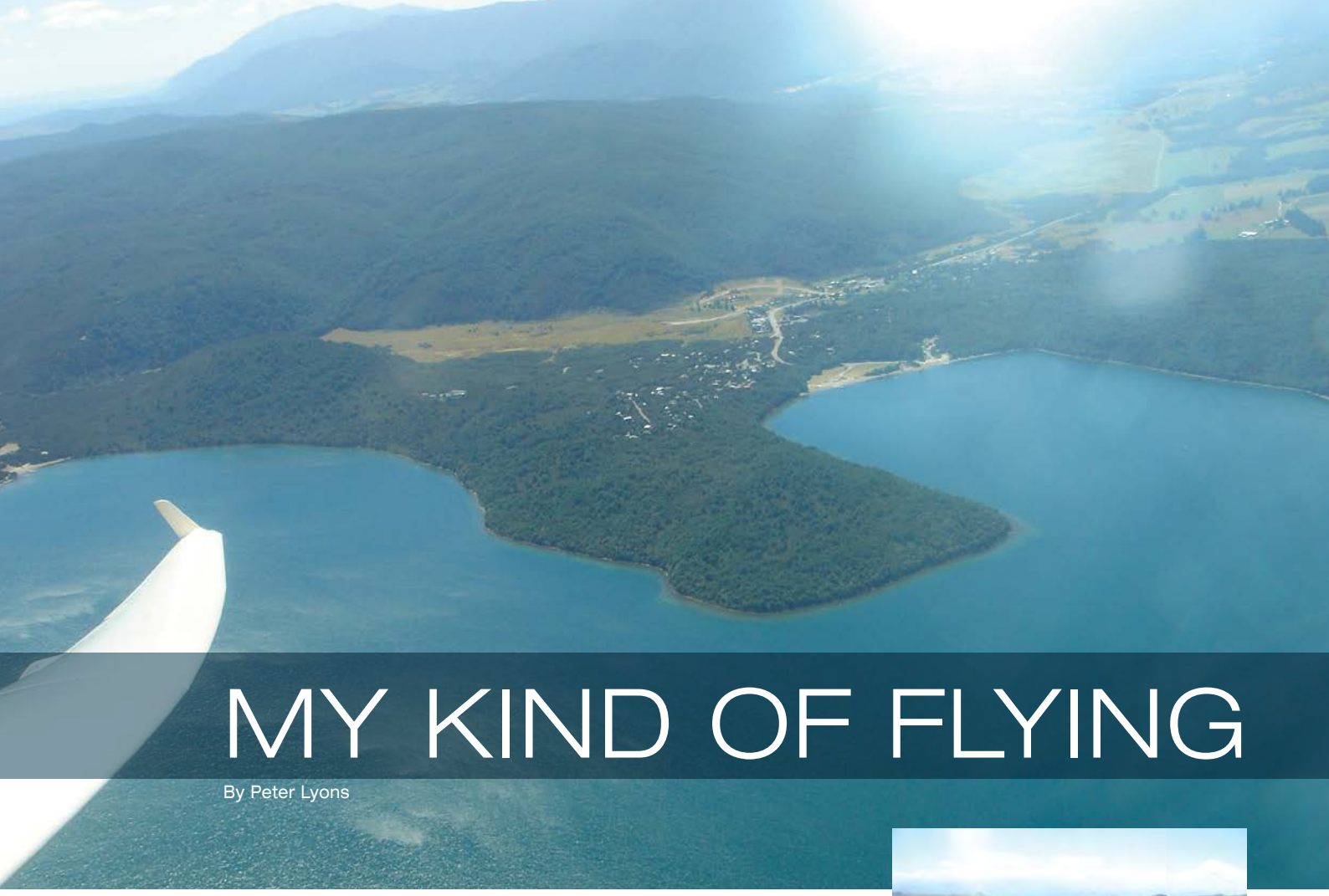
Yes, all of this means that ASG 29 doesn't come cheap but the base price of the glider already includes a long list of items which need to be paid for as optional extras with competitive models. Perfect ergonomics, an award winning safety cockpit, perfect canopy seal with very low cockpit noise, excellent resale value and a fit and finish second to none make this aircraft the best choice of its class.

Several ASG 29 have been ordered by NZ pilots – all of them with turbo sustainer engines. The first ASG 29 destined for Omarama will arrive just in time for the next soaring season and we will soon learn what the ASG 29 is capable of doing on those famous wave days. Stay tuned to this channel.

Soaring NZ

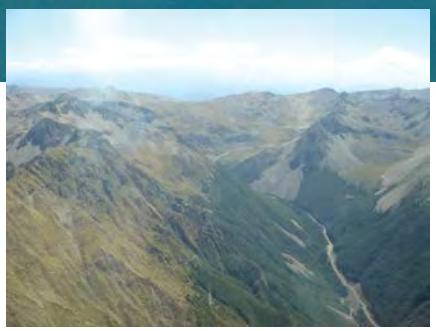
Soaring to the Moon

Photo John McCaw



MY KIND OF FLYING

By Peter Lyons



St Arnaud

Rainbow ski field

As promised, here is Peter Lyons' report on the Nelson Lakes' very popular camp held last February. As an experienced cross country pilot Peter, in the back seat of Dave Speight's ASH, had a completely different experience to the ab inito pilots featured last issue.

I was privileged to be invited to Lake Station (Rotoiti) to fly with David Speight in his ASH25M at the Nelson Club's annual camp and mini rally. The brilliant thermal weather lasted for 3 magnificent days in the first week with 8000 ft bases before a deterioration occurred.

David and Mairi Speight invited Judy and I to share a cottage with them at St Arnaud and fly in the ASH for seven days. Dave & I would be flying each day while Mairi & Judy went for bush walks in the beech forest around Lake Rotoiti.

The day started with Errol Shirtliff calling a briefing at 11 am when he would ask the safety officer to give a rundown on the flying and procedures of the day before. A pilot spoke about the task and how the day had unfolded. Ivan Evans gave a weather briefing and Errol announced a task for the day such as Out & Return to Arthur's Pass for the twenty-five odd gliders in the field.

The idea of setting a task was to get everyone flying in roughly the same direction. It wasn't expected that they would all achieve the goal but only go as far on course as their ability and glider allowed. Launching started when everyone was ready and operated in two very efficient lines, one for the winch the other for aero tow. The organization and operation of the winch by the Nelson Club worked well with launches of 1000 ft to 1600 ft being achieved regularly. Aero towing with Robin Black's Cub fitted in well with the winch operation. Gliders set off on task when they had become well established and in fact Dave and I were 1 hour 40 minutes before we reached the summit of Mt Roberts then left on task. After much discussion on the radio other pilots were having the same problems yet conditions on task looked fantastic. 10 knot thermals to 11,200 ft with a weak easterly wave on top was the order of that day. We returned early to achieve a comfortable tie down before everyone arrived.

This area has fantastic scenery and massive thermals; to the north-west you have Mt Arthur and the Kahurangi National park with its earthquake torn landscape, and to the south the green valleys of Murchison and Springs Junction where thermals lower to around 5000 ft. To the east is the main divide with massive rocky peaks up to 8000 ft and thermals to match. Further east stretches the extensive tussock country of Molesworth Station with its shingle peaks and the legendary thermals to 11000 feet. All this impressive country has airstrips throughout which have been gazetted by the Nelson Club on a well-presented map with the length of the strip noted. Landouts should be no problem.

With this kind of flying there are no winners and no losers; everyone communicates and pilots may set their own limits going as far past the turnpoint or short of it as they feel fit. There is no pressure to push someone beyond his ability. After flying we would all meet at the restaurant for refreshments, a meal and a good chat about the day's flying then disperse to our various accommodations in St Arnaud.

This is my kind of flying. Thank you Errol, Ivan, and the Nelson and Canterbury Clubs for organizing this annual event, which I am sure will achieve popularity.

Dave Speight

The strip at Lake Station

NELSON LAKES. THE HIDDEN JEWEL.

Roger Brown, Piako Gliding Club

'Vintage Kiwi' every year holds two main rallies here in NZ. One is held at Taupo, the other at Nelson Lakes. This year I chose to challenge myself by flying at an entirely different site and to take in the scenic splendor that the Nelson Lakes area is famous for. Having now flown there for the full week I believe that this has to be one of the best kept secrets in NZ.

As a North Island 'Flat Lander' this was to be a trip into the mountainous unknown, so with my Standard Libelle securely fastened in the trailer, I left Matamata at 2.45 am Friday morning for a 1.00 pm sailing to Picton. I spent that night at Nick Bowling's place (ex Piako tow pilot recently moved to Blenheim) and over a beer we talked into the night on flying and other such enlightened subjects.

The next morning I visited one of the best World War One aviation museums in the world, Peter Jackson's flying museum based at Omaka airfield. Fantastic. It is a must visit for any aviation traveler passing through.

The drive to Nelson Lakes was an easy, pleasant and scenic one but you are traveling up hill from sea level to nearly 2000 ft at journeys end. St. Arnaud consists of one general store, one café/backpackers' lodge, one small but very modern hotel complex, and one community hall. That's it, I just about drove straight through. But the natives are friendly.

The Nelson Lakes Gliding Club fly from a flat strip of land about another 8 km further up the main road on a very small part of Lake Station, a very large cattle farm. This whole valley looked to me as if it were part of an old glacier. The runway runs roughly in a westerly/easterly direction. The airstrip is 1709 ft ASL. The mountains themselves top out with Mt. Franklin at 7677 ft. (I've now been there, done that, seen that.) In a nutshell, this place is truly fantastic. Best day, cloud base was 8500 ft, worst day 5700 ft. Best climb = a 10 knot+ thermal. Thermal strengths seemed to top out at around 5 to 8 knots once they got going, but they will try and toss you out.

Everyone seemed to treat this area with great respect, and looking at the topography you can see why.

As far as the Vintage Kiwi Rally was concerned it was another successful outing for the vintage and classic glider cause. However the local club was without two of their own vintage aircraft, their KA4 having badly damaged its wing after hitting a cow a few months earlier. The cow apparently got up, shook itself and ran off. Boy! They breed them tough down here. The glider was totally KO'd. A week prior to the rally the KA6 got 'taken out' by their twin Astir which put its wing through FF's fin and rudder while landing. Both gliders are being repaired.

Some 25 sailplanes did turn up in support of Vintage Kiwi. They ranged from a Slingsby Skylark 3 F, Ka6cr, Ka6e, up to a couple of self-launching ASH 25's. Launching consisted of a single drum winch (Nelson Lakes), a portable two-drum winch (Canterbury) and a local Piper 150 Cub, so launching such a fleet was never an issue. The Drury based syndicate Grob 109 motor glider flew down for the event via Stratford, Paraparaumu and Omaka. Now that would be an adventure. Even Dominic Stevens (PGC) unintentionally arrived. He was on a family holiday in the area and surprise surprise; drove past not realizing this is where the airstrip was. Yeah right!

The Nelson Lakes Gliding Club is a winch launch based club. There are two parallel ridges, one on the northern side and one on the southern side of the airstrip. The trick is to get a good launch and fly to either one of the ridges depending on the sun or wind direction and use these to launch you up into the high country and the mountain system. These two ridges are only about ¾ mile away in either direction. The nearest mountain is only 6 nautical miles away to the southeast and flying in this region can really take your breath away. This is the area where a number of mountain ranges are formed and start and link up together to eventually become the Southern Alps. The word spectacular does nothing to describe it. Ice drifts on the shadow sides of the ridgelines are still prevalent even in the middle of summer. Good discipline and a new range of skills are required here, but very good sound advice is always on hand from the locals. Flying over Lakes Rotoiti and Rotoroa nestled in their own picturesque hidden valleys – amazing.

Would I go back again? Definitely yes. No hesitation. Fabulous place to fly. Next time I would be tempted to take a Piako team with me complete with aircraft. How does February 2010 sound?

TECH-TALK

ROGER HARRIS

Wow, summer is just a memory, and it's now the middle of the year, how did that happen?!

To continue from last issue, we were discussing the Gliding New Zealand (GNZ) Paperwork, in particular the Daily Inspection (DI) Book (Form Tech-19).

It is troubling to note that even the most basic of paperwork within our sport is not well understood, even by some engineers. Take the Tech-19. Every glider registered in NZ, and flying under the GNZ rules must have one of these booklets in the glider at all times. It has a yellow cover, and is mostly referred to as the DI book.

CAA Rule Part 104 (Gliders-Operating Rules) defines the rules to which we operate; 104-113 (Technical Log) gives the requirements for the paperwork (i.e. Tech-19), which records the airworthiness status of the glider for the pilot's benefit.

It is a requirement that this be carried at all times ...

The DI book has several quite serious functions, and I wish to run through them.

On the first page is the instruction for use of the booklet.

On the second page is an area to enter any minor faults found during the pre-flight Daily Inspection (DI). These are minor things which do not ground the glider, but are there to advise other pilots of this minor problem, and as advice for the engineers. Hopefully these will be corrected at the next maintenance inspection.

On the third page is a similar area, this to enter any major defects which make the glider unsafe to fly. Anything entered on this page automatically grounds the glider!

Anyone can ground a glider, but it takes a GNZ engineer, holding the appropriate approvals and ratings, to release it to service.

The glider must not fly, until the item has been corrected and signed off by a GNZ Engineer, complete with a Release to Service statement entered into the glider's logbook. In this case, it is usual to complete a new Tech-19a (the blue centre page) as this confirms to the pilot that the glider has been released to service in respect to that defect.

I'm impressed. You're still with me.

Continuing on, the next few pages are for the signing of the DI. This is defined in GNZ Advisory Circular 3-1. And yep, it is on the GNZ website. Have you read it?

OK, you enter the date (dd/mm/yy), the work done (DI. or DI & Rig., as the case may be). Then the signature of the person carrying out the DI, clearly identifying who you are. Then, if the glider has been rigged, and only after full control checks have been completed, the signature of the person carrying out the duplicate of rigging checks.

> "Our two greatest problems are gravity and paper work. We can lick gravity, but sometimes the paper work is overwhelming."
>
> *Rocket Scientist*
> *Dr. Wernher Von Braun.*

This is not the Duplicate Safety Inspection of Control System as defined in Part 43-113, but rather that mentioned in Part 104-113 (7). And defined in GNZ MOAP and in A/C 3-1.

The "Flights Today" area is where the pilot records his time flown on each day, and whether Aero or Winch tow. Add today's time and launches to the running totals, and thus confirm how close the glider is to its next total hours inspection. Engine hours will indicate a self launch.

Remember, the maximum time in service between inspections is 200 hours, unless the gliders maintenance manual defines a lesser number.

Tech-19a. Certificate of Release to Service.

This centre page, for easy identification, should always be on blue paper.

This page, along with the rest of the DI Book, completes the definition of the Tech Log as required in CAA Rule Part 104-113 (as covered in the previous issue of Soaring NZ).

This starts with the sailplane's Registration & Type, the Operator, and the Operator's address.

It gives the maintenance program the glider is to be maintained to.

SoaringNZ CARTOONIST WANTED

Can you draw gliders and aircraft and some of the twiddly bits that go on them?

SoaringNZ needs someone to provide illustrations for stories.
We will commission illustrations to go with stories when photographs don't show enough, or when a drawing would introduce some humour. (eg this issue's article on spinning)
You are welcome to submit columns or individual cartoons at any time. You would retain copywrite of your work. There is no pay. Just the glory of having your work seen by a wide audience. Please send examples of your work to **soaringnz@mccawmedia.co.nz**

Roger Harris has been involved in the maintenance and repair of gliders for more than forty six years. He is a current Gliding New Zealand Approved glider maintenance engineer, holds GNZ Class four Approval and a GNZ IA-G Certificate (Inspection Authorisation-Glider). He currently conducts the Annual Inspection and Annual Review of Airworthiness on twenty-three gliders of all construction types although he is working on reducing this number now that he has joined the ranks of Superannuitants.

- An area to note any interim inspection or defect rectified. (Such as an inspection in accordance with Tech-22, Part-3.)
- The date and hours Time In Service (TIS) of the next supplemental Inspection.
- Date of Annual Inspection.
- Date of Annual Review of Airworthiness.
- Dates of biennial checks of Avionics.

Any special conditions and requirements as detailed in the sailplane's maintenance manual, some of which may require out of phase maintenance.

It then states that a DI must be carried out to validate this release to service and details some actions which will, if they happen, immediately invalidate the release to service, and thus ground the glider. Following such the glider must then be inspected by a GNZ engineer, using Tech-22 section 3 as a guide to the inspection and as a check sheet to ensure all areas have been looked at, and again released to service.

Finally Tech-19a has the release to service statement, duly signed, over the engineers GNZ number, over the date.

Remember the requirements of the Supplemental Inspection?

These requirements were detailed last issue, with a copy of a typical logbook entry for the Release to Service statement.

If your glider is subject to a Supplemental Inspection (and most private gliders are not) the certifying GNZ Engineer, having carried out the required inspection using Tech-22 Section 1 as the inspection schedule, will then enter the next due date, the total hours (TIS) that the glider's next inspection is due at, and sign and enter their GNZ approval number.

This action, along with the logbook entry, certifies the release to service.

Doing the DI — more than just part of your daily routine.

WEBLINKS

WATCH BEN AND DANE FLY IN ITALY.

This site is a must. Get it set on your computer now and keep up with what is happening at Rieti at World Glide in July. **http://www.wgcrieti.it/#**

REDBULL AIR RACES

It is fast and furious and I'm not sure if it is sport or not. No I'm not talking about the races themselves, I'm talking about the on line version that you can fly from home. Follow the link from the main page. Check it out at **http://redbullairrace.com/index.php**

WORLD AIR GAMES TURIN 2009

For one week, the best athletes in the world will confront each other - in the third dimension. The organisers of the WAG which includes Grand Prix gliding is calling for volunteers. If you are planning to be overseas next June and want to be involved in this amazing event then download the forms and get on board at **http://www.wag2009.com/eng/**

GORGEOUS PICTURES

Neil Lawson died tragically in 2005. His photos are some of the best glider and aircraft pictures ever taken. See for yourself at **http://www.whiteplanes.com/**

THE BIG BLUE MARBLE

For pictures from a higher perspective. **http://visibleearth.nasa.gov/**

AN IDIOT'S GUIDE TO TEPHIGRAMS:

WRITTEN BY AN IDIOT – PART 2

Warning: The following article contains more graphs. If you handled the last lot OK and are looking forward to this lot, then you need help. Remember, the first step to a cure is admitting you have a problem.

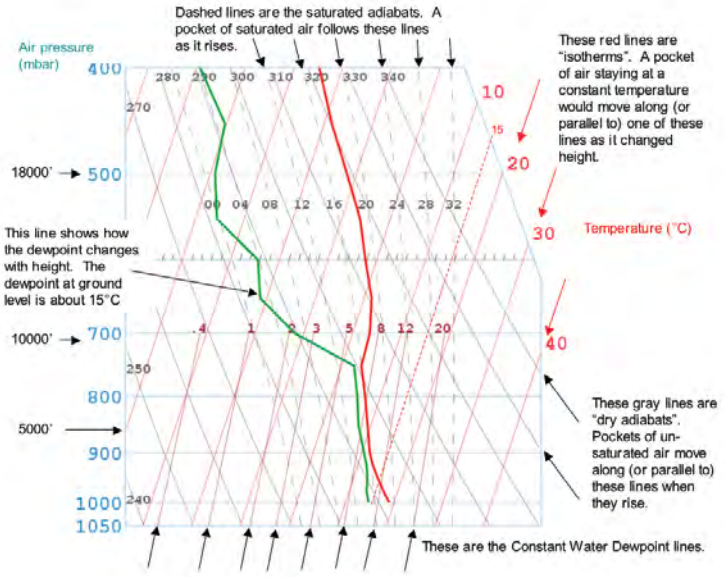


FIGURE 1

In the last article, you saw how a tephigram can be used to predict the likely height of thermal activity and whether they would form at all. In all that discussion, the parcels of rising (and falling) air were deemed to be "dry". In other words, I ignored moisture completely. In this article I'll talk about how the presence of water can really confuse things but also allow you to predict

- whether the day will be "blue" or not
- the height of cloudbase
- whether the clouds will produce rain.

First, I have a confession: I lied. In the last article, I described the movement of "dry" air in the atmosphere when in fact it wasn't dry at all, just un-saturated. To explain.

All air contains some water vapour. This is not the same as the visible steam you'd get out of a boiling kettle; it's water in invisible gaseous form. The amount of water vapour dissolved in the air can be expressed as mg/m^3 (mg of water vapour per cubic metre of air) or, more usefully %RH (Relative Humidity expressed as a percentage). At a particular temperature and pressure, a volume of air can only hold a certain amount of water vapour. If none is present, the humidity is 0 %RH; if the air is full of mist, the humidity is 100 %RH. Note that I said "a particular temperature and pressure". Hot air can hold more water than cold air if the air pressure is constant. At constant temperature, low pressure air can hold slightly more water than high pressure air.

Those "dry adiabats" I talked about last time were not in fact dry, just un-saturated. Once a parcel of air with a certain amount of water goes from being un-saturated to saturated, Things Happen. Firstly, a small quantity of water will condense out to form mist (or dew if it condenses on a surface), leaving the remaining air holding as much water vapour as it can. Most of the time we see this effect when air cools down, so the temperature at which moisture or dew begins to form is called the Dewpoint. Surprise!

Figure 1 shows a thick green line that meanders its way next to the red one. This is a plot of the dewpoint against pressure (i.e. against height). For example, the dewpoint at ground level is about 15°C. If the temperature line and the dewpoint line are very close to each other (or even touching), it means that there's cloud at that height – if they follow each other very closely all the way up it means that it's raining. A lot. You could have just looked out the window.

Any rising (and cooling) parcel of air doesn't dump all of its water when it reaches the dewpoint – just enough to maintain an equilibrium. If the air continues to rise and cool, it will continue to dump more and more water until eventually there's none left to dump. This is why Cumulus clouds have fairly flat bottoms and a finite height – either the air stops rising or they run out of water.

The other Thing that happens is that when water condenses, it gives up its Latent Heat of Condensation. It takes just over 2 kJ to turn 1 cc of water into vapour and that same amount of energy is re-released when it re-condenses – the reason why steam burns are so painful. So once condensation begins, the rising parcel of air warms up a bit, which makes it rise faster. Remember how the dry adiabatic lapse rate was -3°C per 1000 ft? Well once the air's saturated, the lapse rate halves. This "saturated adiabatic lapse rate" is only -1.5°C per 1000 ft.

What does this mean for your average tephigram? Now, if you're pretending to be a rising windbag, instead of just tracing some imaginary line parallel to the dry adiabats until you reach the surrounding air temperature, you have to trace two (actually three but we'll get to that – patience, young Jedi). You follow the dry adiabats until you saturate, then you follow a whole other set of lines. Figure 1 shows a typical tephigram (same as the one last time) which includes these lines – the "saturated adiabats". See how much steeper they are! Once you're shedding water, you don't cool down as quickly.

All well and good, but how do you know when you're saturated? This is where the third set of lines comes in (remember I said it'd get confusing). These show the dewpoint for a given moisture content and height. I'll call these the "constant water dewpoint" lines for lack of a better description; there probably is a better description but nobody's told me. This is how you use them.

Have a look at another figure which I've called, imaginatively enough, Figure 2. Start where the green dewpoint line starts at ground level. Note which Constant Water Dewpoint line it's nearest

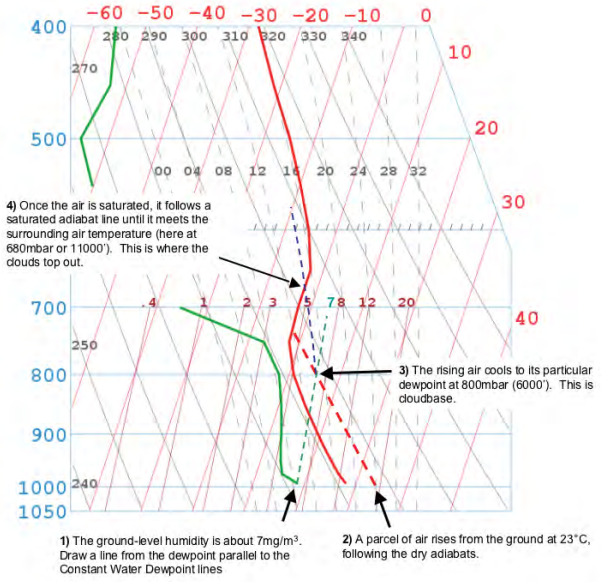


FIGURE 2

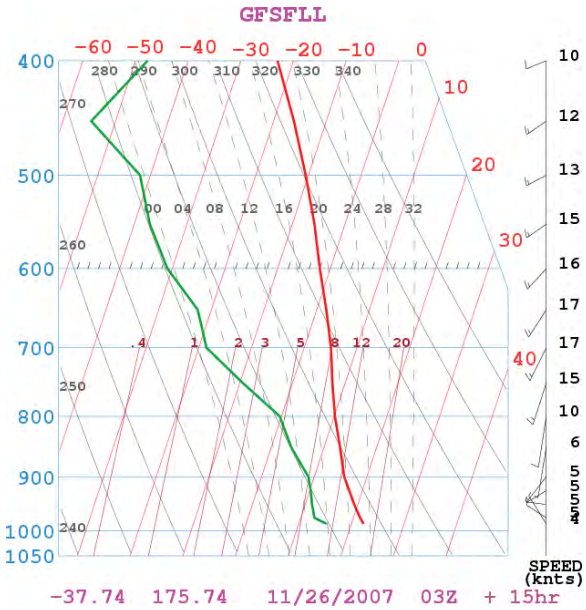


FIGURE 3

to. It's between the lines marked "5" (5 mg/m³) and "8" (8 mg/m³), so we can say that at ground level, the water content of the air would be 7 mg/m³. Now draw an imaginary line up, parallel to the "8" line (see Figure 2 again). Why? Because we're going to consider what happens to parcels of air rising from the ground, and if they rise from the ground on this particular day, their water content will be about 7 mg for every cubic metre of their initial volume.

Now imagine a parcel of air on the ground at 23°C. That parcel of air contains 7 mg/m³ of water vapour (as we read from the dewpoint line at ground level). As it rises, its temperature drops but is water content doesn't. At some point (which is indicated on Figure 2), the dry adiabat line of the air parcel will meet the Constant Water Dewpoint line and that is where the water vapour will start to condense, in this case at about 800 mb (6000 ft). Our rising windbag has met its own dewpoint. Congratulations, you've now found cloudbase.

To find cloudbase on any day, draw one dry adiabat line up from where the ground temperature is, and another constant water dewpoint line up from the ground-level dewpoint. The height where these two lines meet is where you'll find cloudbase. Simple, really. Have a look at Figure 1, and you can see here that cloudbase wasn't very high at all. (Go on, try it. Start at 22°C and you'll reach 900 mb before your water will condense. How unfortunate.)

On days that are "blue", the dry adiabat line for the thermals will hit an inversion or just reach the surrounding air temperature before it encounters the relevant constant water dewpoint line. Figure 3 shows an example. Actually on this day, there was just the odd wisp of cloud at 3000 ft. An inversion stopped the thermals just before a normal cloudbase would have formed, and momentum carried a bit of the air past the condensation height. Marginal days like this can be quite hard to judge and it really comes down to three options: definitely cloud; definitely blue; a bit iffy – plan for blue and hope for the best.

OK, so now we've established that there is or isn't cloud forming. If there is cloud, how high will it rise? This is where the saturated adiabats come in. Once you've established cloudbase from the intersection of those two lines, draw another line up from this – one which parallels the nearest saturated adiabat. See Figure 2. Wherever this new line hits the atmospheric temperature (red) line is where the cloud will stop rising, in this case at about 680 mb.

If your saturated adiabat hits the red line at well below freezing, ice will have formed and will be growing from all the new water rising up towards it, so you'll get showers of some sort. Conversely, in Figure 4, you can see that, even though cloudbase was about 3000 ft, the clouds topped off at 700 mb, where the temperature was still about 4°C. Result? No rain. What if your saturated adiabat never hits the red line, but just keeps on going up? In that case

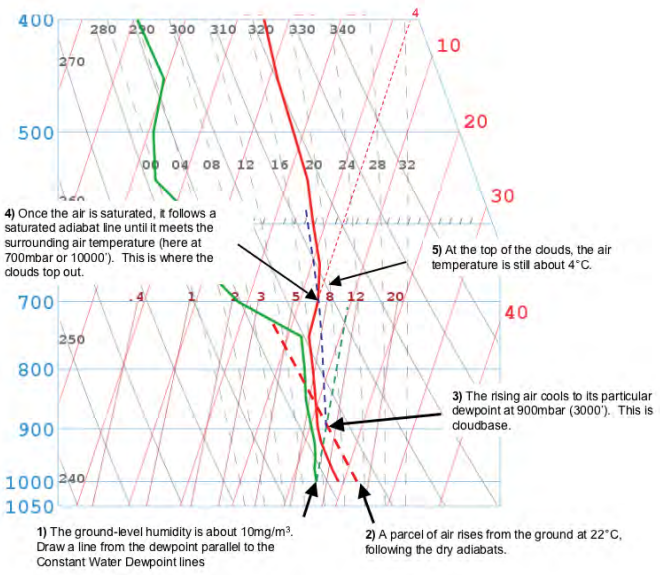


FIGURE 4

you can be pretty sure that there will be heavy showers or thunderstorms. Beyond that, it's anyone's guess really. This is how met people keep their jobs and why everyone else moans at them.

As you can also see from figures 2 and 4, you can end up with an awful lot of lines on your tephigram. Just take it step by step and you can't go too wrong, though people will still shout at you if you get it wrong.

OK, that's it. You now know as much as I know about tephigrams, right and wrong. Remember, they're a guide only; use them with as large a grain of salt as you can get away with. They're predictions of what's likely to happen. A more accurate method is an actual sounding, taken on the day itself and compared with the prediction. An even more accurate method is often just to look out the window and go flying.

See you up there.

Chris Rudge has been flying gliders and powered aircraft since 1984. He has 20 years of gliding instructing experience behind him and has completed nearly 5000 tows as a tow pilot. He also holds New Zealand and Canadian commercial licences for aeroplanes and balloons, and has flown helicopters. He was the first New Zealander (and one of only a few people in the world) to log 1000 hours each on gliders, balloons and aeroplanes.

Photo John McCaw

SOUTHERN BELLE

Ferrying Southern Soaring's newly purchased Pawnee from North Shore Aerodrome to Omarama had all the hallmarks of an episode from Blackadder Goes Forth. When Blackadder and George joined the Royal Flying Corps as "Twenty Minuters" they were expecting "tasty tuck, soft beds, and a uniform so smart that it's got a PhD from Cambridge." They were also expecting to fly for only twenty minutes per day. It was only when they started training that they were told that twenty minutes was the average life expectancy of a new pilot flying in the RFC. On the flight south to Omarama, however, I was hoping my odds were slightly better than that.

Like Blackadder's scheme for getting out of the trenches, my plan was also initially simple – take a Boeing to Auckland from Christchurch on the 8th of May, fly back to Wanganui that afternoon and continue home the following day. If only life was that easy ... but more of that in a minute.

This story really began with the realisation that, if Southern Soaring was going to make its towing operation more profitable, we would have to purchase our own tow plane. Last season, the Omarama Airfield Company made more out of our towing operation than we did and that just didn't seem right.

Two years ago I checked the CAA website and found that there were 13 Pawnees registered in New Zealand. Of the ten -235 versions, only two were not owned by gliding clubs. One of these (ZK-CIQ) was owned by Peter Anderson, a vet from Blenheim. The other (ZK-PPA) was operated by Agtech Air Services in Dargaville. The latter didn't look to be an option given it was still doing ag work and would probably require a huge amount of work to get it up to speed for towing. At this time, Southern Soaring was not in a position to purchase new aircraft but, with the business sold to Les and Irene Lamb in November 2007, that all changed.

While considering aircraft, we also looked at purchasing a new Pawnee out of Argentina or buying a second-hand aircraft from overseas but the costs and risks were too high. It was at that point that we approached Peter Anderson to see if he wanted to part with CIQ but, despite our good offer, he decided to keep the aircraft.

Several people then suggested we look at PPA. To our surprise, we found that the aircraft had been extensively restored in 2001 by Stan Smith, well known for his high standard of workmanship, particularly on de Havilland types. The restoration was thorough and involved a complete strip, replacement of all corroded parts, new wiring, new fabric, and new paint. Since restoration, the aircraft had only done about 70 hours flying and just a small part of that was on spray work with liquid fertilizer, which is non-corrosive. It was worth a look.

After a number of phone calls, Darren Smith and I headed to Auckland and were met at the airport by Ian Williams, Chief Tow Pilot for the Auckland Gliding Club, who kindly drove us up to Dargaville where we met the owner Peter Butcher. We were impressed by what we saw.

The aircraft is a "D" Model and one of only two in New Zealand. It was initially registered in May 1976 as N54924 and was operated by a couple of spraying companies in the USA before being imported into New Zealand in 1985. On 14 January 1986 it was registered to Charlie Sewell and operated in South Canterbury. On 22 August 1997, the aircraft went to Barclay Enterprises. Two years later, it was registered to Agtech Air Services.

The "D" model has a number of differences when compared to

The panel of a crop duster, slightly more complicated than your tow converted Pawnee.

Fire extinguisher for motor

earlier versions. Externally they include fibreglass upper surfaces for ease of cleaning and inspection. The "turtledeck" can be quickly removed, which allows access to the whole of the rear fuselage. At the front of the aircraft, two cooling vents protrude from the engine cowling. A higher cabin provides improved ventilation for the pilot. Air forced in at the front comes out through an adjustable overhead aperture or down the back of your neck through a rear opening – perfect for hot days at Omarama. Other external differences include tinted side windows to reduce glare and a large anti-collision beacon mounted high behind the cockpit. The aircraft we purchased was also still fitted with spray equipment.

Internally, the aircraft also has a number of differences. These include wing tanks that drain to a central header tank below the cockpit floor. Fuel is then drawn forward from this point through an engine driven pump or two electric pumps. A single cock shuts off the fuel and only one internal fuel gauge is provided with a low fuel warning light. To improve safety, the engine is fitted with a fire extinguisher, which is operated by a handle on the port cockpit wall. Either side of the instrument panel there are two rings that can be pulled to jettison the side doors if required.

Following our inspection of the aircraft and an engine run the following day, we negotiated with Peter to purchase the aircraft a week later subject to it having a fresh Annual Review of Airworthiness and 100 hour inspection. Stan Smith then flew the aircraft to North Shore Aerodrome to ready it for the flight south.

On 8 May, Ian Williams kindly picked me up from Auckland Airport again and we drove out to North Shore. Soon after arriving it was obvious that I wouldn't be flying to Wanganui that afternoon as a new radio was still being installed. At best, I would get the aircraft to Drury. When things were finally in order, I started to taxi to the fuel pumps only to find that, on making a radio call, the ELT went off! I had to taxi back in, reset the ELT and check out the problem with Stan. With the problem sorted (or so I thought!), I taxied out again, refuelled and then got airborne. It was a beautiful evening as I headed down the east coast past Auckland. Abeam Lake Pupuke, I gave a position report and the transmission set off the ELT a second time! Fortunately I was able to turn it off but I had to fly in stealth mode for the rest of the flight to Drury.

On Friday the rain poured down. Heading south was out of the question. An Auckland syndicate generously let me put the aircraft inside their hangar for the night, which was greatly appreciated. Using the delay to good effect, I got the guys from Hawker Pacific to come over and sort out the radio/ELT issue. When they arrived, I decided that, since the problem seemed to be with the ELT and that the ELT had to be upgraded to a new 406 model in several months, it made sense to do the replacement straight away. Problem solved. The rest of the day was spent cleaning the aircraft between cups of coffee with the friendly guys from Sailplane Services.

The next day, Saturday, the weather started to clear but I now had a headwind to contend with. With all the spray gear fitted, the airspeed was back to 80 knots. At such a low speed, a headwind component of 20 knots was significant as the endurance was just two hours and that allowed for only 1.5 hours flying. Taking into consideration airfields with available fuel, the trip south would involve ten refuelling stops – some from pumps and some topping up from two 23.5 litre fuel containers I carried in the hopper. Given the aircraft had no transponder, I also needed to remain clear of controlled airspace.

The flight to Te Kuiti went without problem but on arrival I found that the brand new fuel card I had been issued by Mobil didn't work! After ten minutes on the phone getting the runaround (I'm sure the guy sounded like Captain Darling), I was told they could do nothing to help me until Monday! Fortunately a loader working for Rotor Work turned up and was able to provide fuel. From Te Kuiti, I headed to Taumarunui to top up the tanks and then continued via Raetihi to Wanganui. With the forecast for gale force winds through Cook Strait on Sunday and two fronts passing through, I did the right thing and stayed with my Mum for Mothers Day (soft bed and tasty tuck after all!).

On Monday 12 May I phoned Mobil again and was told that they still couldn't help and they would need to send me more paperwork to fill in! It eventually transpired that Mobil had screwed up and issued a fuel card for a road vehicle (despite them admitting that we had clearly requested "aviation fuel" in the application and that they had issued a card with our aircraft registration printed on it!). The guys at Ravensdown were happy to sell me fuel so it wasn't long before I was on my way to Wigram with the first refuelling stop at Paraparaumu.

The weather around Cook Strait wasn't exactly ideal for sunbathing – rain on the eastern headlands with showers further west and 30

knots on the surface. I made the crossing at 2000 feet and saw only one ship punching into a large southerly swell. It was no place to have an engine failure and the life preserver I was wearing provided little comfort! It was good to leave the whitecaps behind.

The controller at Woodbourne was helpful in letting me through his airspace to Omaka without a transponder (I had phoned for a clearance while in Paraparaumu). From Omaka the weather just got better. After two more refuelling stops in Kaikoura and Rangiora, I got into Wigram a few minutes after 3.00 pm. The final leg to Omarama the following day was a walk in the park. It was good to get the Pawnee to its new home.

I would like to thank everyone who has helped along the way, especially Ian Williams who did so much for us while in Auckland. The assistance and hospitality by all were greatly appreciated.

And on a final note, our Pawnee already has a new name – Southern Belle, picked by the Southern Soaring Team and something I'm sure even Lord Flasheart would approve of. Perhaps we could even get him as a tow pilot and he could take her to heaven and back twenty times a day ... now, that would be good for business.


Photo John McCaw

A happy Chris Rudge at Wigram just before leaving on the final leg of Southern Belle's journey to her new home in Omarama.


Photo Chris Rudge

Heading south past the Auckland CBD


Photo Chris Rudge

In the event of a forced landing, where would you go?


Photo Chris Rudge

Excellent weather passing the Seaward Kaikouras

A QUESTION OF SAFETY

DOUG HAMILTON NATIONAL OPERATIONS OFFICER, GNZ

Most of you are settling in for the winter now that the soaring season is over. I hope you managed more flying than I have had over the season. So roll on next summer.

I have included more accident briefs with this report and hope you take the time to have a read.

I normally only report the accidents but this time I am going to make comments on some of them. I am not intending to pick on the pilots but more to expand on the lessons that can be learned from them. I would also like to hear that these reports are being discussed at a club level and even between instructor and student, as instructors can forget and students don't yet know!

Firstly it is important to note how many of the reports are about outlandings, in most cases the outcome would more than likely have been happier if the pilot had made a much earlier decision to land and had more time to select a good landing place and time to do a good circuit. Don't leave it too late!

Pre takeoff checks come into question in some of the reports and it must be reiterated that "Ya just shouldn't takeoff till ya got everything sorted". Cases of a greater than normal level of stress – delays because of tow planes or winches – delays because of comms – or delays because you the pilot have forgotten something etc., etc. are a recipe for disaster when you the pilot don't recognise them and slow down a bit.

If the tow plane starts the takeoff roll and you are not ready ... pull the yellow bung thingy! Having said that if you have accepted the towrope, or cable, before you are ready then you need a kick in the bum anyway!

One report was regarding a very near accident during a trial flight when the passenger was feeling sick. Many passengers and actually many new student pilots (and a few old, un-current ones) do feel unwell/queasy or downright sick during those first flights. And many pilots and instructors don't really have a plan to deal with it!

What to do? Accept it as a normal reaction to something unusual and tell your student or passenger that it is a possibility. Then give them a sick bag (or two) as part of the briefing and tell them to just get on with it and be sick if they feel a bit crook!

Try it. I adopted this technique many years ago and two things happened.

The rate of students and passengers that have felt sick has dropped by probably 70%, because it takes away a lot of tension from the experience, and

Those that do still get sick have a bag early in the piece and you have a no stress, no mess situation.

Other things to mention are the availability of instructor courses ... but you have to let us know that you have candidates for them. So let us know so we can arrange them.

I have also been working on a second set of QGP question papers which I had hoped would be ready by now but good old computer glitches and a lack of spare moments have delayed things a bit so, soon I hope!

The AGM is upon us so if you have opinions that is your chance to air them.

Be safe out there.

SUMMARY OF INCIDENTS — 2006

Date 21 January 2006 Location Dunstan Creek (OA) Glider type LS4
Nature of Flight Private X/C Pilot hours 117 Last 90 days 51
Injuries Nil Damage Serious POB 1 Details available on CAA web site:No
Notes During a cross-country flight from Omarama the relatively inexperienced x/c pilot flew out of range of landable strips or paddocks. An outlanding became necessary and the pilot elected to land on a 4-wheel drive track. During the landing the starboard wing caught some raised ground and tussocks, resulting in a severe ground loop.

Date 28 January 2006 Location Waharoa Glider type LS8 –18
Nature of Flight Competition Pilot hours 480 Last 90 days 74
Injuries Nil Damage Major POB 2 / 1 Details available on CAA web site: N/A
Notes When returning to the airfield during a competition task the pilot was below glide slope and attempted a low level turn into a paddock. During the right hand turn the nose dropped and the wingtip struck the ground, pitching the nose into a silage pit and the left wing striking a post.

Date 28 January 2006 Location Lake Station Glider type KA 6
Nature of Flight Winch launch Pilot hours N/A Last 90 days N/A
Injuries Nil Damage Minor POB 1 Details available on CAA web site: No
Notes During the second winch launch for the day, the glider launched normally till about 1200 feet when the canopy detached from the glider and fell to the ground. The pilot released from the launch and proceeded with a relatively normal circuit. The pilot reported that the canopy had been difficult to lock down on previous flights and he had asked for assistance from the ground crew on this occasion to lock the canopy before takeoff.

Date 17 February 2006 Location Lake Ohau Glider type ASW 28 –18E
Nature of Flight Cross Country Pilot hours 800 Last 90 days 30
Injuries Nil Damage Substantial POB 1 Details available on CAA web site: Yes
Notes After a cross country flight the foreign pilot, in company with a local pilot were returning the airfield when continuous sink was encountered. The pilot attempted to start the glider's engine before selecting a suitable landing place. When the engine, requiring a dive start, failed to start he was faced with having to land on a low ridge covered in rocks. Resulting in substantial damage to the glider.

Date 5 March 2006 Location Lake Station Glider type Twin Astir
Nature of Flight Trial Flight Pilot hours N/A Last 90 days N/A
Injuries Nil Damage Nil POB 2 Details available on CAA web site: No
Notes During the trial flight the pilot elected to cut short the flight, as the passenger was feeling uncomfortable. When entering the downwind leg, the passenger getting airsick distracted the pilot. As the pilot was trying to locate sick-bags, sink was encountered

and the wind direction changed to a cross- wind. A low approach ensued with less than normal aileron response due to turbulence. The pilot was unable to line up correctly with the strip and had to over-fly trailers and gear parked to the side of the strip and land in an adjacent field.

Date 25 September 2006 Location Hororata Glider type Std Cirrus Nature of Flight During Launch Pilot hours 750 Last 90 days 20
Injuries Nil Damage Nil POB 1 Details available on CAA web site: N/A
Notes During an aerotow launch in turbulent conditions, the glider pilot elected to retract the undercarriage. This required the pilot to change hands on the control stick. The pilot had to pull hard on the undercarriage lever several times as the mechanism seemed to be operating incorrectly. The glider began to kite behind the tow plane. The pilot tried to recover to the normal position, but during recovery the towrope was broken. Both aircraft returned safely to the airfield.

Date 23 September 2006 Location Waikanae Glider type PW5 Nature of Flight Local Soaring Pilot hours 81 Last 90 days 4.5
Injuries Nil Damage Moderate POB 1 Details available on CAA web site:Yes
Notes After half an hour soaring on a local ridge the pilot descended below the zone of lift on the ridge and was forced to make a landout. During the landout the pilot had to ground loop the glider to avoid hitting stock and a fence.

Date 28 October 2006 Location Lake Station Glider type KA 6
Nature of Flight Local Soaring Pilot hours 90 Last 90 days 3.5
Injuries N/A Damage N/A POB 1 Details available on CAA web site: No
Notes While on a local flight the pilot misjudged the wind direction and rapidly lost height. This necessitated an outlanding, during which the pilot was forced to land on rough undulating ground beside a creek. The glider hit a small rock which punctured a hole in the fuselage forward of the main wheel.

Date 27 September 2006 Location Hororata Glider type C 172
Nature of Flight Tow plane landing Pilot hours 577
POB 1 Details available on CAA web site: Yes
Notes The tow plane returned to the airfield after a normal glider launch. On finals the towrope contacted power lines short of the threshold. A plasma ball was created causing a fire in a hedge under the power lines. The aircraft landed safely, neither the towrope nor the power lines broke. This incident is now subject to CAA court action against the pilot!

Date 11 November 2006 Location Taupo Glider typePW6
Nature of Flight Training Pilot hours 1250 Last 90 days 10
Injuries Nil Damage N/A POB 1 Details available on CAA web site: No
Notes The next student got into the glider while the instructor remained in the back seat. After the Instructor had completed a briefing with the student he opened the rear canopy to brief the new student wing runner. During the takeoff the rear canopy opened.

Date 12 November 2006 Location Matamata Glider type ASW 20
Nature of Flight Local Soaring Pilot hours 1516 Last 90 days 30
Injuries Nil Damage Minor POB 1 Details available on CAA web site: No
Notes The pilot had taken off on a badge flight attempt with full water ballast. Radio communications had been difficult with the tow plane. It was the first tow for the day. After release at 1500 ft strong sink was encountered and the pilot could not reach the ridge as expected to gain lift. The pilot dumped water ballast, but an immediate outlanding became necessary. The pilot did not have time to lower the undercarriage so a wheel up landing in an undulating field ensued.
The pilot said later that ground witnesses reported a lot of flex in the wings on takeoff. He is not certain but it could have been that the airbrakes had not been locked before takeoff, as he had been a little distracted by the lack of comms with the tow plane. This may have influenced the sink rates encountered after release.

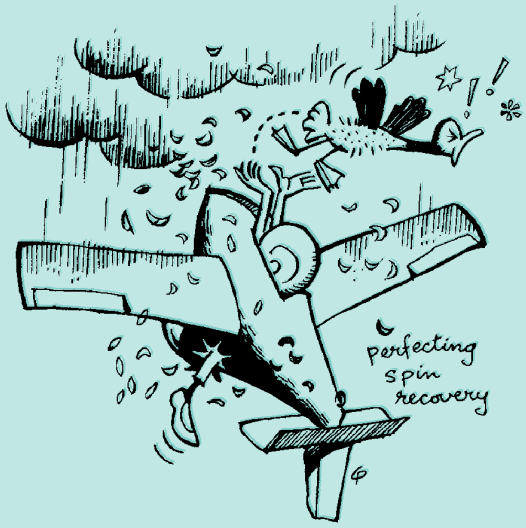
Date 1 December 2006 Location Matamata Glider type Ventus A
Nature of Flight Local Soaring Pilot hours 2800 Last 90 days 10
Injuries Nil Damage Unknown POB 1 Details available on CAA web site: N/A
Notes During a normal approach from 400ft with full brake. The speed started to decrease. Realising the speed was getting low for a good round out the pilot closed the trailing edge brakes and put flaps up to setting one. The result was a heavy landing.

Date 28 December 2006 Location Omarama Glider type LS4
Nature of Flight Local Soaring Pilot hours 103 Last 90 days 10
Injuries N/A Damage Minor POB 1 Details available on CAA web site: N/A
Notes The pilot was unable to find lift after release from launch. He had not raised the undercarriage after release and upon returning to the circuit, retracted the undercarriage during pre-landing checks, resulting in a wheel up landing.

INSTRUCTORS COLUMN

PETER THORPE

Spinning & Spin Training



I was recently looking through some of my computer files from more than 10 years ago and I find that articles written then remain just as valid today. So I have reprinted one here that I wrote after one of our club pilots experienced a spin at low level:

K gave himself a very nasty fright in January when the Blanik spun unexpectedly while he was thermalling. Inadvertent spins at low level remain one of the most common causes of fatal accidents in gliders and a common feature appears to be that the pilot often does not realize he/she is spinning. Spin training is always carried out at high level and is preceded by HASEL checks and some positive control inputs. This means that if the glider enters a spin at low level while you are in a thermalling turn, the visual and sensory cues may be quite different. K was thermalling at about 1100 ft at 40-45 kts in moderately gusty conditions. From eyewitness reports it seems the Blanik stalled and auto rotated then recovered twice before the nose fell to the vertical. K did not realize the first two gyrations were auto rotational, he just thought the turns were tightening a bit, and it was not until the nose fell to the vertical at about 700 ft that he realized the aircraft was spinning and took recovery action. Fortunately he bottomed out at about 100 ft AGL and was able to climb back to complete a circuit, but it was a very near thing. (As a post script – K never came gliding again!)

During training we try to demonstrate how an inadvertent spin can occur during a low level, over-ruddered turn and you should all feel confident you can recognize and recover from an incipient spin. If you are not then please talk to one of our very polite and helpful instructors who will take great delight in giving you some refresher training. Spins in all check rides are now a mandatory part of the BFR. It is interesting to note that in the UK a student pilot has to do two solo spins observed from the ground as part of the C syllabus.

Remember that before a glider will spin it must first stall, so you should all be very familiar with the stall warnings of your glider and the immediate recovery actions. When thermalling, it is very easy and quite common for a gust to semi-stall the glider. Practice stalling in the turn and recovering at a safe height so that it becomes instinctive. Remember also the inside wing is travelling slower than the outside wing so there is a tendency for the bank angle to increase if speed reduces. If the bank angle wants to increase and the rate of turn also seems to be increasing, immediately suspect the glider is on the verge of stalling and lower the nose to unstall the wing and then reduce bank angle. Rapid application of large control inputs at low airspeed is a sure fire way to induce a spin so remember the minimum safe speed near the ground and fly smoothly. It is impossible to stall and spin if a glider is being flown at its minimum safe speed in balanced flight (that means the yaw string should be straight).

Peter Thorpe first soloed in a glider in 1960 at RAF Halton in the UK. He qualified as an RNZAF pilot in 1970. Since returning to gliding in 1979 he has been continuously active as pilot, instructor, occasional competition pilot, tow pilot and administrator. He spent five years as President of GNZ. In 2006 he was awarded the Paul Tissandier Diploma for services to sport aviation by the FAI.

Peter is currently on his second term as CFI of the Auckland Aviation Sports Club. He has over 1000 hours gliding of which 600 are instructing, plus 940 hours power flying. He is an instructor trainer and needs a height gain to complete the Gold Badge – difficult over Auckland. His activities are mostly confined to ab initio instruction these days which gives him great satisfaction.

SPIN RECOVERY ACTION

Incipient Spin

- Apply sufficient opposite rudder to prevent further yaw, and
- Move the control column centrally forward to unstall the wings
- Recover to normal flight.

Fully Developed Spin

- Apply full opposite rudder (ensure it hits the stop)
- Move the control column centrally (ailerons neutral) forward until the spinning stops
- Centralise the controls (especially rudder) and recover from the resulting dive.

Handy Hints

- A glider can be recovered easily to normal flight at any stage of a developing spin.
- Elevator is the most important control during incipient spin recovery. Do not use excessive rudder.
- If a spin is allowed to progress to the fully-developed stage it becomes a horse of a different colour and the correct use of both rudder and elevator as per standard recovery action is vital.
- In a fully developed spin, recovery action may not be immediately effective. The longer a glider has been spinning, the longer it is likely to take for the recovery action to take effect and in some gliders the rate of rotation may increase just before it stops. Be patient and don't panic.

Safe soaring, Peter

HOW DID WE GET HERE? WHERE ARE WE GOING?

by Ian Dunkley

As I am sure you are well aware I have an ulterior motive in writing a regular "Vintage Kiwi" feature, I want you to join us, or failing that at least appreciate what we are doing. This task is not going to be easy if gliding goes down the drain. Let's face it; a growing share of a declining market is not actually a good business plan.

Many ideas have been put forward for our slow decline, when we could have expected growth:

Gliding should be re-branded as an "Adventure Sport", to attract the young.

The young want to be taught by the young, not by people old enough to be their grandfather.

Grandfathers responded: youngsters want a quick fix, not something that takes a long time to master, and went off shaking heads.

Others countered: kids spend a long time developing skills such as BMX riding, skateboarding etc., why not gliding?

Cynics said: we would need bright lycra flying suits.

We continued towards the drain, preceded by a lot of paper and working groups.

With one or two exceptions manufacturers continued to develop higher performance gliders, for the people with the money, (that certainly is not the young) and hopefully sat back waiting for orders. The Grand Prix was introduced, which in my view has just about as much relevance to "our gliding" as pornography has to real life, exciting as it may look. Pushing competitions was another idea. Interesting that internationally most people who manage gliding seem to be competition pilots. Very handy for the manufacturers, but was that the only way forward? The crew of the Titanic are discussing how to sail faster, while the passengers are jumping off.

Whilst all this was going on, did anyone notice the hills were alive to the sound of swishing hang gliders, paragliders, and in the early years, breaking limbs? Unless I am very much mistaken this was gliding effectively going back to where it started: simple, basic and initially dangerous. Do you not think if we added our pilot numbers to those who have shoes on their undercarriages, we would find gliding as a whole is in fact on the increase?

As this new and popular form of gliding developed, so did performance, surpassing that of "our" early gliders. The "new" gliders left the sand dunes and hills, went into the mountains, cross country flying became popular. Rigid wing gliders also evolved, some as "ultralights", initially foot launched, nothing new there, just going back 40 years or so. They discovered winching and aero towing, behind microlights of course. They were freed from the hills, and the young went with them.

What did "our" gliding do when this all started? Threw up our hands in horror. Comments of, "What were all these "hippies" up to? Polythene wings stuck onto tubes with double side tape. This is madness (I know this because I built one in the mid '60s, but chickened out). It will give gliding a bad name." At best gliding clubs ignored them, at worst they were openly antagonistic to the idea of anyone else on "their hill", or anywhere near it. Fist shaking and aggressive flying did not deter the newcomers; neither did the lack of interest by "our" authorities. In the UK the only person with any of "our gliding" authority who recognised the potential was Ann Welch, who soon became President of the British Hang Gliding Association. It seemed the BGA did not want to know.

What had happened was that we had failed to see that technical developments, and perhaps social as well, now made it possible to go back to an early stage in our evolution. To start out on an alternative branch of our sport, that was ignored in the 1920s. If you look at the designs of some of the early gliders you can see quite striking similarities with modern ultralights and hang gliders. Whilst developing this branch of gliding would clearly have been possible, the goal was increased performance, not gliding recreation. Do some of our problems go back to decisions made in the 1920s and thirties?

It is now widely accepted that the roots of the Second World War were contained in the Versailles Treaty. This imposed restrictive conditions on Germany; one precluded the construction and flying of aeroplanes, but with a loophole. Germany, with limited resources and harsh economic conditions, used it to develop gliders. This considerably increased their aerodynamic and construction expertise that, not co-incidentally, was to become very useful later on. Alongside this they clearly perceived a need for a lot of pilots in the future. Here at least they saw the advantages of a simple design, cheap, repaired easily, although it had the big disadvantage of having only one seat. Whether or not this was due to an intelligent application of Darwinism, it certainly had that effect, and later on the Hitler Youth were to put this to the test.

Martin Simons in his book Sailplanes 1920 to 1945, (Pub Eqip), queried if primary solo training was a mistake from the start and suggested that gliding of the time would have benefited from a two seat primary trainer. Whilst he was perhaps quite naturally biased, for he was nearly killed when "solo" training, he made a very good point. Martin has kindly expanded on this thought and this makes interesting reading. "The right time", he says, "for a two seat primary to be developed was between 1922 and 1924. However a crucial decision was made when Alex Ursinus, editor of Flugsport, demanded that Alexander Lippisch and Fritz Stamer should design some effective training gliders. If Stamer had said then, "What we need, Alex, is a simple and cheap two seater", the entire history would have been different. It could so easily have been a Zögling with a slightly larger wing area and a second seat. But Stamer was convinced that solo training was the way to go and he ruled the Wasserkuppe school for twelve years. The question is why did everyone else copy his methods?

Would Stamer asking the right question have led to the development of what we now call ultralights? Would market forces, brought about by safer two seat training, have attracted many more people into gliding, asking for lower cost gliders? Certainly at that time the general public were far more interested in flying then they are now. Could the Germans have produced a "People's Glider" by developing suitable existing designs to meet the demand? Or was the knowledge obtained by developing higher performance single and two seaters more important for German prestige? One can only speculate.

The disadvantages of "solo" training were of course re-discovered by hang and later, paragliding enthusiasts, when they broke the initial rule of the '60s - don't fly higher than you want to fall. Not the best marketing slogan I am sure you will agree. Eventually dual training became the norm and the alternative branch flourished to represent an easy to learn, cheap to acquire, easy to operate, flexible, and successful competitor to "our" sport.

My view is that throughout the world a second mistake was made when we chose to ignore the developments in the '60s and '70s, failing to see what was happening beneath our noses and deciding that transition from wood to plastic was the only way to go. For our form of gliding it was, but was it an opportunity lost to integrate with this "new" gliding and move forward with it? We are now paying the statistical price. Total gliding is thriving but we can only see our bit declining. Could not Martin Simons' thought be extended, "A great mistake was made by not developing a two seat primary and subsequent stream of low cost gliders"? This had to wait over 40 years or more, and we ignored it.

All is not lost though, for as legs grow older, they could, and do, limp over into our sport, some without the limp, with remarkable success in some cases. Don't they Terry? There are two questions; "How many can we attract?" and the most critical, "How many can we keep?" Isn't this our greatest problem, the wastage of pilots both pre and post solo? Would we have been able to avoid this if clubs had a fleet of cheap rigid wing ultralights as well as the up-market toys? You see them on the Wasserkuppe, along with every thing else that flies.

By this time you may be wondering what the heck this has to do with "Vintage & Classic Gliding". Quite a lot actually. The low cost of say Ka8's, Ka6's, Skylarks and the early glass gliders may well be an attraction to those other pilots who may be put off by the Performance and Cost , as opposed to Fun, aspects of modern gliding. Never forget the largest gliding event in the world is the annual Vintage Rally, a major contribution to our sport that overall gets less publicity than a minor competition, and primaries are very popular there. Wouldn't you like to fly one? Vintage Kiwi is doing our bit to embrace the wider field of gliding. We already have an ultralight glider in the VK museum collection, and are planning Vintage Youth, but have not yet thought of Vintage Ladies. Could we be the walkway between the branches?

If "new" gliding is to be a feed stock for us we should look at its popularity. In the early days, the late '70s there were 9000 hang glider pilots in the UK, reducing to 6000 by 1992 when they integrated with 3000 paragliders, bringing the "new " sports back to 9000. Today in Europe there are 97000 pilots who are members of hang or paragliders clubs. That, using the UK figures, would indicate 61,000 paragliders in Europe. But that was 16 years ago. Want to bet which form of gliding will first be in the Olympics?

Mark Dale, General Secretary of the European Hang Gliding and Paragliding Union describes his sport like this. "You can turn up when you like, prepare for flight in five minutes, fly until you have filled your boots, pack up in ten minutes and go home. No queuing, no hangar packing, etc." Can we ever compete with a flying sport like that?

Meanwhile, gurgle, gurgle, plop, don't worry too much; it's not only "us", that's going down the drain. Hang gliding is following. Have a think about ultralights now.

Letters of outrage to the Editor, but cheques for $30 to join "Vintage Kiwi" to me! Both will be gratefully received. In fact I will present a bottle of wine, not vintage I'm afraid, to the best "anti wood" letter writer. Anyone want to buy my Nimbus by the way?

Keith McIlroy is safety officer
at Tauranga Gliding Club

So You Have Been Asked To Run The Wing

So what does running the wing mean? It means more than just standing there and waving your arms about while holding the wings level before takeoff.

The wing runner is responsible for the safe and efficient launch of the glider and tow plane into the air. Let's break it down a bit to see what this entails.

Getting the rope and positioning it ready for hooking on to the glider.

Hooking the rope on when the pilot advises they are ready.

(Once the glider is connected to the towrope the wing runner should never walk back in front of the wings of the glider until the attention of the pilot has been gained and the tow release has been pulled and the towrope is disconnected from the glider. You can gain the attention of the pilot by calling out to them, banging on or shaking the wings.)

Looking to check the takeoff and approach paths are clear for the launch to proceed.

Signalling for the slack to be taken up by waving a straight arm side to side below your chest to your front.

Signalling for the launch to commence by waving a straight arm side to side above your head to your front.

Signalling for the launch to stop if necessary by holding your arm straight above your head; the wing can also be lowered to the ground.

Supporting and running the wingtip until the glider is accelerating and under the control of the pilot.

Further reading and full details on these points can be found from the 'Student Study Guide – Ground Training – Launch Procedures' on the GNZ web site so we won't reproduce it here. There is however more to being an effective wing runner.

A wing runner must make attentive observations without being intrusive, but must also be prepared to speak up if they think the pilot may have overlooked something. At the same time the pilot must not get annoyed if the wing runner says something, as they are only acting in the pilot's best interest.

When walking out to the aircraft with the pilot, observe if the pilot will need ballast or not.

If the pilot is taking a passenger, do they need ballast and have they signed your club's appropriate paperwork?

If friends of the passenger are invited out to the flight line to watch and take photos, they are under the control of the wing runner at all times. The flight line at times can be a busy place with aircraft coming and going and tow planes moving around. The pilot should be solely concentrating on preparing the aircraft for takeoff, so it is the wing runner who has to keep them safe and together.

If the glider uses a tail dolly, it sounds silly, but has it been removed? They have been known to go for a ride at times.

Watch to see if the pilot has done his checks properly and has not forgotten anything, like forgetting to check their air brakes. Have they been opened, closed and locked away?

Another area in which the wing runner is important is the efficient launch of the glider and tow plane. The tow plane is expensive to run due to fuel and maintenance costs. The fuel cost is reduced if engine-running time is kept to a minimum and it doesn't have to turn off and start up more than necessary. Efficiencies in turn-around time between tows will be of benefit.

The glider pilot can help here by ensuring they are ready to go when it is their turn.

Having a well organized ground team ensures that as the tow plane lands, a wing runner is ready to retrieve the rope and get the next glider launched without delay. Not only does this help the tow plane reduce running costs but also ensures the maximum numbers of gliders get airborne each hour.

Remember that the safety of everyone on the airfield is your concern.


Photo John McCaw

Wing running training is as important as any other gliding skill.

THE GEEK

Some say he was oxygen deprived at birth so high altitude is his natural home. He has a built in GPS so he never needs directions. He says his sunken chest in a result of getting up close and personal with Madonna's pointy bra. We don't know and we don't care. We know him as The Geek.

LX 8000

The latest Color navigation and vario system from LX Navigation.

It's me again. Your incredibly over qualified techno uber geek glider guider. This month I am reviewing another entry in the "what can I equip my plastic missile with that looks really nifty" game. Well this does look pretty nifty!

It has a colour display which only hogs one normal 98mm instrument hole along with a standard 57mm vario display. With 262144 colours, 3.5" (9cm) diagonal screen, a 320 by 240 pixel resolution and 1200 cd brightness. This makes it pretty impressive. The display is readable in all sunlight conditions with a backlight that is automatically adapted using photo-sensor built into the front of the unit. Phew. So it changes brightness. Nice. Better than holding your hand as a sun shade over the PDA.

It has a PXA270 processor with 520 MHz clock driving a Linux operating system. Not CE as most PDAs. 2Gb storage memory on board. 16 channel uBlox GPS receiver. Built in Flarm Transmitter and receiver so no need for a separate unit and it has an alarm system to display warnings graphically with sound and if you add the voice unit, it will yell at you. Just what any self respecting glider pilot needs.

LX also claims it has a "simple user interface controlled by 6 push buttons and four rotary switches and is designed for top-level competitors, club operation as well as for gliding beginners". Fine for a super wiz like me but the rest of you knuckle draggers would be advised to spend a few minutes running through all the pages and menus to get its full benefits. Best to do this with it powered up on the kitchen table rather than while on tow on the first contest day. Makes the tow pilots nervous you know.

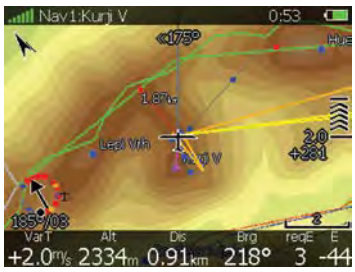
This puppy is also preloaded with worldwide terrain maps, airspace and airports databases. This would need to be treated with caution, especially the airspace, but the good news is that any updates are relatively user friendly using the front loading SD Card or the USB.

IGC approved for all flights. Flight files are transferred to the SD card. So you wander off to the scoring office with the card rather than a box or PDA or Laptop.

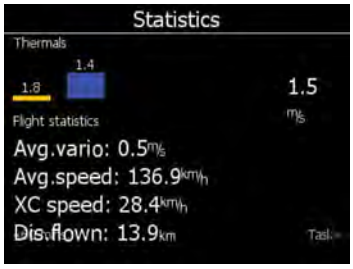
This thing copes with complex tasks with assigned area. You know those tasks that get set when the task setters have run out of ideas. While you fly into the zone you can move a little bug around the zone to see what effect flying to that point will have on your speed around the rest of the task. Gives you the good oil on clipping the zone or going deep.

Or if the on line contest is your thing, the LX 8000 optimizes on the go so you know what distance you have covered on your Sunday jaunt and whether you have done enough to justify the tall tales in the bar afterwards. If there is any questioning in the bar of your exceptional abilities in your Shlep G Slider 23.4 -18 wonder weapon then the humongous load of flight statistics this thing pumps out should silence even the loudest doubters. Just make sure you are equipped with an AV projector, large screen and laser pointer to really ram it home.

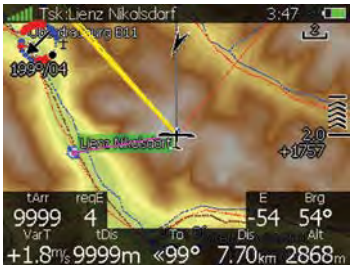
In summary I would say this is one hell of a piece of kit. Expensive at $5995 US but considering it comes with a flarm unit and card reader etc which are optional bits on LXs other units its value is pretty good. Does away with the PDA but does not have the advantage of a backup logger. Still about the only thing it doesn't do is play DVDs while you wait for the retrieve crew.



Flight Screen



Statistics screen while on Task showing last two thermals



On Task screen

CLUB DIRECTORY

Link for club info www.gliding.co.nz/Clubs/Clubs.htm

Auckland Aviation Sports Club
Club Website www.ascgliding.org
Club Contact Peter Thorpe
pbthorpe@xtra.co.nz Ph 09 413-8384
Base RNZAF Base Auckland (Whenuapai) 021 146 4288
Flying Weekends, Public Holidays

Auckland Gliding Club
Club Website www.glidingauckland.co.nz
Club Contact Ed Gray airsailor@xtra.co.nz
Ph (09) 237 8151 (027) 608 4156
Base Appleby Rd, Drury
Flying Weekends, Wednesdays, Public Holidays, other days The Sky Sailing Company (TSSC)

Canterbury Gliding Club
Club Website www.glidingcanterbury.co.nz
Club Contact Kevin Bethwaite kevin.bethwaite@airways.co.nz
Ph (03) 384 3196
Base Hororata Road, Hororata
Flying Weekends, Public Holidays

Central Otago Flying Club (Inc)
Club Website www.cofc.co.nz
Club Contact Phil Sumser phil.sumser@xtra.co.nz
Base Alexandra Airport
Flying Sundays, and by arrangement

Glide Omarama.com
Website www.GlideOmarama.com
Contact Gavin Wills gtmwills@xtra.co.nz
Base Omarama Airfield
Flying October through April 7 days per week

Gliding Hutt Valley (Upper Valley Gliding Club)
Club Contact Wayne Fisk wayne_fisk@xtra.co.nz
Ph (04) 567-3069
Base Kaitoke Airfield, (04) 526-7336
Flying Weekends, Public Hols., Mid week by arrangement

Gliding Manawatu
Club Website http://sites.ourregion.co.nz/glidingmanawatu/home.html
Club Contact Ron Sanders Resanders@xtra.co.nz
Base Feilding Aerodrome
Flying Weekends, Public holidays

Gliding South
Club Contact George Menlove ggmenlove@actrix.co.nz
Base Rouse Airstrip, Five Rivers, Southland
Flying Weekends and Public Holidays

Gliding Wairarapa
Club Website http://www.glidingwairarapa.co.nz/
Club Contact Diana Braithwaite Ph (06) 308-9101
Base Papawai Airfield, 5 km east of Greytown
Ph (06) 308-8452 or (025) 445 701
Flying Weekends, or by arrangement

Hauraki Aero Club
Club Website www.flyhac.co.nz
Club Contact Ron Bergersen d.rbergersen@xtra.co.nz
Ph (027) 277 4238
Base Thames Airfield
Flying Weekends and Public Holidays

Hawkes Bay Gliding Club
Club Website www.skyhigh-photography.com/Main/Aviation_and_Spaceflight/HB_Gliding_Club.php
Club Contact David Davidson Dhcd@clear.net.nz Ph (06) 876-9355
Base Bridge Pa Airfield, Hastings 0272887522
Flying Sundays. Other days by arrangement

Kaikohe Gliding Club
Club Contact Peter Fiske, (09) 407-8454
Base Kaikohe Airfield, Mangakahia Road, Kaikohe
Flying Sundays, Thursdays and Public Holidays

Marlborough Gliding Club
Club Website http://glide_marl.tripod.com
Club Contact bmog@paradise.net.nz
Base Omaka Airfield, Blenheim
Flying Sundays and other days by arrangement

Nelson Lakes Gliding Club
Club Website www.glidingnelson.co.nz
Club Contact Frank Saxton franksaxton@gmail.com
Ph (03) 546-6098
Base Lake Station Airfield, St.Arnaud Ph (03) 521-1870
Flying Weekends and Public Holidays

Norfolk Aviation Sports Club
Club Website http://www.geocities.com/norfolkgliding/
Club Contact Kevin Wisnewski wizzbang@xtra.co.nz
Ph (06) 756-8289
Base Norfolk Rd
Flying Weekends and by appointment

Omarama Gliding Club
Club Website http://www.omarama.com
Club Contact Yvonne Loader loaders@clear.net.nz
Ph (03) 358-3251
Base Omarama
Flying 7 days a week by arrangement

North Otago/Youth Glide Omarama
Club Website www.youthglideomarama.org.nz
Club Contact Tom Shields tom.shields@century21.co.nz
Ph (03) 473 1721
Base Omarama and Dunedin
Flying By arrangement

Piako Gliding Club
Club Website www.glidingmatamata.co.nz
Club Contact Phil Smith phil.r.smith@xtra.co.nz
Ph (027) 486-4761
Base Matamata Airfield, Ph (07) 888-5972
Flying Weekends, Wednesdays and Public Holidays

Rotorua Gliding Club
Club Website http://www.geocities.com/rotoruagc/RotoruaGlidingClub.html
Club Contact Mike Foley
roseandmikefoley@clear.net.nz
Ph (07) 347-2927
Base Rotorua Airport
Flying Sundays

South Canterbury Gliding Club
Club Website www.glidingsouthcanterbury.co.nz
Club Contact John Eggers johneggers@xtra.co.nz
33 Barnes St Timaru
Base Levels Timaru & Omarama Wardell Field
Flying Weekends, Public Holidays & by arrangement

Southern Soaring
Club Website www.soaring.co.nz
Club Contact Chris Rudge chris.rudge@soaring.co.nz
Ph (03) 438 9600 M 027 248 8800
Base The Soaring Centre, Omarama Airfield
Ph (03) 438-9600
Flying September-April: 7 days a week (except Xmas Day)

Taranaki Gliding Club
Club Website www.glidingtaranaki.com
Club Contact Peter Williams peter.williams@xtra.co.nz
Ph (06) 278 4292
Base Stratford
Flying Weekends and Public Holidays

Taupo Gliding Club
Club Website www.taupoglidingclub.co.nz
Club Contact Tom Anderson Tomolo@xtra.co.nz
PO Box 296, Taupo 2730 Ph (07) 378-5506
M 0274 939 272
Base Centennial Park, Taupo
Flying 7 days a week

Tauranga Gliding Club
Club Website www.glidingtauranga.co.nz
Club Contact Roy Edwards royedw@wave.co.nz
Ph (07) 578-0324
Base Tauranga Airport
Flying Weekends and Public Holidays, Wednesday afternoons and other times on request

Waipukurau Gliding Club
Club Contact R.D. Orr pat.rob@xtra.co.nz
Base Waipukurau Airfield Ph (06) 858-8226
Flying Weekends and Public Holidays

Wellington Gliding Club
Club Website http://www.soar.co.nz
President Mike Tucker mike@hvpc.co.nz
M (021) 439 193
Base Paraparaumu Airport
Flying Weekends and Public Holidays 7 days a week December through to March

Whangarei District Gliding Club
Club Website www.igrin.co.nz/~peter/gliding.htm
Club Contact Paul Rockell rockelkaym@xtra.co.nz
Base Rockelkaym Ridge, Gibbs Road, Puhi Puhi
Flying Weekends and Public Holidays

GLIDING NEW ZEALAND CLUB NEWS

Nelson Lakes so far takes the prize for generating the most words put on paper. We are still running pieces following the Club's camps and courses held over the summer. Roger Brown describes the place as a hidden jewel. Unfortunately now I think the news is out and in future everyone is going to be going there. Congratulations to the club for running such successful events.
There is no club news this issue from Wellington as there has been too much rain. At least they let us know. South Canterbury also hasn't sent any news but has shared a funny photo. There was no club news from sixteen of the twenty eight clubs in the country. Where are they, what are they doing? I don't know. Please, if you are in one of these clubs, make an effort to share your exploits with the country. We do want to know.
Deadline for club news for the next issue 11 July.

AUCKLAND CLUB

The Auckland Club is still getting a few soarable days as we brace ourselves for winter and a wetter airfield surface. We now have a resident earth scraper parked on our airfield as we prepare the ponding area for shrub planting. We have been researching environmental funding to assist in the future landscaping required.

Our ground focus has changed to the provision of our winter QGP lecture series with David Hirst, our resident physicist, having delivered the meteorology presentation to our seven eager candidates. Further progress has been made on our painting and renovation projects led by Allen Tromp and Rae Kerr.

We have also examined the outcome of the CAA Airspace Review in conjunction with our local user group officer John Bayliss, held a well attended meeting on the changes to be effective in November and brushed up on our radio procedures in preparation for the next bumper season. We realise that we must stake our claim and use the airspace more or stand to lose it if we continue to avoid it. We shall surely have to use the VHF radio for more than chatting about the thermals, in the light of these further encroachments to our local soaring areas.

We recently learned the value of taking care when placing aircraft back in the hanger after flying, as our Duo Discus canopy became a casualty in the process. Over the winter, our Chief Tow Pilot Ian Williams is embarking on a wing fabric replacement project on the Pawnee following the earlier fuselage work completed. He has already made a raid on various South Island hangers ferreting out "hard to get" parts in preparation.

There is much talk and examining of two seater glider brochures at present, following the generous bequest made by our former member, Snow Douglas; but we all realise that we must address more fundamental issues of recruiting and retaining our membership before we indulge ourselves any more.

BREAKING NEWS ...

Check out our new Auckland Gliding Club weather station at Drury under the operation of David Hirst http://www.glidingauckland.co.nz/Weather/Current_Vantage_Pro_AGC.htm

RT

CANTERBURY

Not just mushrooms are popping up on our airfield – we now have a clubroom just arrived in the form of an ex school room. Obtaining permission to have one has been a frustratingly long exercise but due to the persistence of several club members our dream has been realised. Members will now have plenty of work ahead of them turning it into a comfortable amenity.

A mix of weather over the last couple of months has provided some good soaring, allowing several pilots to have extended flights in the mountains. The junior members have been very active getting up to speed and flying solo from Hororata which is a smaller field compared with Omarama. One feels a little envious at the speed with which they adapt.

Auckland Club benefactor Snow Douglas in 1995 towing the club PW5 at Drury in his Rolls Royce accompanied by Andrew Ward (Pilot) and Frank Blair (Wingtip).

Archive shot of the Pawnee towing a club PW5

Roger Read has purchased Single Astir GMQ and Youth Glide Canterbury will form a syndicate to buy it off him. It is being used by the junior pilots and is also available for the rest of the club members.

The weekend of 19 April saw Scouts attending the Aoraki Aviation Camp 2008 in the Hororata Domain. Once again Mike Oakley had arranged for Canterbury Scouts to qualify for their badges by gliding and hot-air ballooning. They don't just fly but attend lectures and help to wash and inspect the flying machines and learn how to rig and picket them as well. The boys and girls came from all over the province along with their leaders and parents and enjoyed a full weekend flying off the winch as well as ballooning. They were also given a chat about Youth Glide Canterbury and met several of our young pilots.

Rover scouts did the catering for the weekend and after seeing the experience of the younger scouts, are keen to have a similar camp for their group some time in the future.

The first weekend in July will see us traveling to Naseby in Central Otago to have fun trying our hand at curling.

Stewart.

CENTRAL OTAGO FLYING CLUB

Central Otago Flying Club Winter is here now and there's snow on the mountains that ring the Central Otago basin. Thermals are gone but we've generally had some soaring on every Sunday. There's been wave about midweek but little wave flying on club days. This should all change soon no doubt! We have one pre-solo student who is making good progress and we've started weekly night classes for members studying topics in the gliding syllabus.

Cheers, JR

More Regular Club News *on page 48*

Central Otago member Vivienne Bryner with our Twin Astir at the end of an April soaring flight. Pic by Phil Sumser

GLIDING WAIRARAPA

Gliding Wairarapa, originally known as Jury Hill, came into existence almost twenty years ago. A keen group of Wairarapa and Ruahine pilots had been searching for a winch site away from Hood aerodrome in Masterton. Jim Bicknell believed that if a few fences were shifted and some ditches filled it would be possible to construct a one kilometre long strip on his farm at Papawai 5 km east of Greytown. So he made an offer to the late John Upton and after a site inspection by many of the Wairarapa gliding fraternity, construction of the runway commenced.

Over the years many hundreds of tonnes of demolition concrete, boulders, stones and soil from construction sites have been used to fill in old river channels and depressions. The process still continues. A hangar was built by the club and a cottage shifted to the site to become a clubhouse.

Phil Pearce joined many working parties to cut down trees, move fencelines and move earth. Pearce frequently visited from his home in Palmerston North to instruct or to fly his Libelle. His first logged flight from Jury Hill was a circuit in his Libelle in October 1990. The club, he says became very active and hosted a number of ATC and Air Scouts groups for air experience and flight training. Pearce organised and instructed several cross country courses. Launching was by winch or aerotow using a Pawnee belonging to the Wanganui/Manawatu GC. Early in 2000 Pearce took over the role of CFI when instructor numbers were down and carried on for several years until he had two more instructors trained and one rated as a B Cat who was willing and able to take on the CFI post.

The Jury Hill site and the Papawai area certainly lived up to all the earlier expectations and hopes. It has proved to be a superb place to fly and to soar from. The north/south vector is alongside and parallel to the Ruamahanga River with a ridge rising about 1000 ft just to the eastern side. Further to the east there are a number of valleys and ridges and then the Pacific Coast. To the west is the broad Wairarapa valley and then the Tararua Ranges. The area is great for thermals and is in a good position for contacting westerly wave from a winch launch. The Jury Hill ridge provides sustainable ridge soaring in moderate westerly winds, which is ideal for student training and often a stepping stone to contact wave for wave soaring flights. A launch to the west often puts the glider under, or just in front of, a tertiary rotor and after a turbulent climb, smooth wave lift is contacted. A climb and then a transfer to the secondary system and then on to the primary system can be made if desired.

The aerodrome is constantly being improved and extended by the property owner Jim Bicknell. Bicknell has done an enormous amount of improvement and has also upgraded the winch with the introduction of dyneema braid rope and an electronic ignition. The winch has been fitted with a load cell which provides the driver with constant information of the load put on the glider during the launching process. The driver can adjust the throttle setting using this information, increasing or decreasing power as required. The means higher and smoother launches and increased safety. The dyneema rope has proven to be very successful. It is so much lighter than the wire previously used, giving higher launches and putting far less load on the glider during the launch.

Verne Grant's youth training has been a prime mover in getting groups of college students involved in gliding. Many of the parents have also become active within the club. Phil Pearce says that the reasonably priced winch launching, friendly atmosphere and good local gliding conditions make the club ideal for this activity. He himself has enjoyed the comradeship and good will of the members during his many years involvement.

Jim Bicknell and Phil Pearce

A pilot view to the South of the field from a thousand feet. The confluence of the Waiohine and Ruamahanga rivers and the south-western ridges of the Jury Hills can be seen. Hangar and clubrooms just visible in the foreground alongside the north/south vector. The Aorangi Mts beyond Martinborough are in the background with Lake Wairarapa just visible to the right.

A group of the late Founding Fathers who worked tirelessly to establish the field. L to R: Graeme Lyttle, Clive Weingott, John Upton and Malcolm Stuart.

An enthusiastic group of Wellington G.C. members celebrating their successful induction into the gentle art of winch launching.

Verne Grant (CFI) with students Abe Ginnane, Aiden Crimp and Jack Montgomerie at the 2007 Kuranui College prize giving. The trophy Aiden is holding, known as the John Maunsel & Murray Sykes Memorial, contains two pewter mugs that were awarded to John and Murray when they won the Club and Open class at the first NZGA National Championships which were held in Masterton in 1969. The two pilots played a major role in establishing gliding in the Wairarapa.

Certificate – received for participation in the ACC sponsored Sports Club Accreditation Programme. Judged on, among other things, sustainability and long-term viability, volunteer development, participation, health and safety – injury prevention. It noted the club's Educational Trust.

GLIDING WAIRARAPA AND THE YOUTH TRAINING SCHEME.

In 2006 the then chairman of the Greytown Trust Lands Trust suggested to our club that they might be prepared to part sponsor a youth training initiative because they had funds to use for that purpose. The Trust formed an opinion that getting youth involved in a local sport or interest would be of benefit to all the parties concerned. The concept blossomed and a training syllabus for 14-17 year olds was drawn down from the GNZ syllabus. The aim of the scheme was to get a pod of students involved in gliding at minimal expense to themselves and to take these students through to solo status (and beyond if they so desired). A proposal was circulated at the local College principally because I was on the staff at that college and so the first hurdle was an easy one to jump. The concept was met with a lot of interest and nine students opted into the scheme. A total of six comprehensive lectures were delivered to the students while in college and on-site training took place most weekends over the remainder of the 2006/2007 soaring season. For a myriad of reasons the band of nine was whittled away to 3 boys who are now well beyond solo status and are enjoying every minute of their adventure. One of the best things to come out of the scheme is the involvement of the parents. One of the dads has become a winch driver and a mum has joined the committee. The other parents are on-site for up to three hours each weekend helping with airfield operations.

Round two of the scheme is about to start with a new band of recruits. Three seems to be an ideal number to work with and it allows the rest of the club to carry on operations without feeling that they are being pushed out. We feel that the joint venture has worked very well and is a concept that other clubs could easily replicate.

Jack Montgomerie, one of the youth members gives his view.

In late 2006, Mr Grant (the CFI and a teacher at Kuranui College) asked if I would be interested in learning to fly gliders. I had seen one of the club gliders once before while swimming in the Ruamahanga River, which backs on to the club. I was amazed at how a glider could be launched into the air without falling down again. Needless to say, I was keen to learn.

Soon enough, lectures on flying began at lunchtime in Mr Grant's classroom, and nine of us began taking instruction at Jury Hill. Initially, I found the roller-coaster sensations of the launch quite frightening, as well as the bumpy spring skies. But as conditions improved each weekend, I grew more confident.

Under the careful watch of instructors Geoff Lloyd and Mr Grant, I progressed through my training and flew solo in September 2007.

An added perk of gliding is that unlike other sports, it does not require early starts! I have always found it helpful that a knowledgeable club member is never far away if I have questions to ask. The enthusiasm of everyone at the club for their sport has been both infectious and invaluable.

Learning to fly at Jury Hill has been a great experience so far, and I look forward to future flying.

Verne Grant – CFI

Norfolk: Robert Smits' proposal vintage rally


Norfolk: Vintage rally


Omarama: Karen in the leaves.


Norfolk: Vintage Rally


Canterbury: A group of scouts being introduced to a glider. The new club house is up on piles in the background

Regular Club News *continued from page 45*

NELSON LAKES

We have experienced mixed weather conditions at Lake Station over the last two months. The Easter camp had a couple of busy days and a couple of quiet days with Easter Monday turning on great flying conditions. The available accommodation at St Arnaud was not well patronised so a different format is likely next Easter. Credit must go to Frank Saxton for promoting this extended weekend of flying so enthusiastically.

We have generally suffered from a lack of wind, but have had some good thermalling days. The lack of lift on the nursery ridge running parallel to the strip has meant only the old birds have been able to get up and away at times, with the chicks often returning soon after launch. Saturday 3rd of May provided some very buoyant conditions, with the autumn's first decent snow fall providing spectacular scenery. The following weekend provided not a skerrick of lift with the longest flight off the winch being only twelve minutes. What a contrast!

Fortunately Landon Carter has acquired a new toy in the form of an Avid Magnum 180 (HP). He has had a tow hook fitted and seems to enjoy towing his gliding buddies onto the St Arnaud range where the flying is always exhilarating! The mountains are forever beckoning at Lake Station, but not always accessible off our trusty winch. We hope Landon will be frequently flying over from Golden Bay providing an alternative method of launching.

The level of participation and enthusiasm within the club is high. This is at least partially attributable to the ab Initio camps of the last two years and ongoing tutoring efforts by our diligent instructors. These strategies ensure a financially sound club which is now investigating the purchase of a twin drum winch from Germany. Lake Station's future is bright!

NORFOLK AVIATION

Norfolk Aviation has enjoyed a good gliding summer, and we have had some great thermal/convergence days around Mt Egmont and the Taranaki province.

The club has flown trial flights, with mountain and aerobatic flights being very popular.

In March we had the pleasure of hosting a rally at the Norfolk Road airstrip for members of the Vintage Kiwi gliding group. An enjoyable weekend by all accounts, with Vintage gliders arriving in their trailers from all around the country: some of these included Dart, K8, Rohnlerche, K6, Blanik and T.31.

More often than not pilots bring their families with them which adds to the fun of the weekend.

I would encourage other gliding club members to consider tagging along with this crowd as it is a fun relaxing weekend: flying for fun in older machines without the pressure of competition or needing to own the latest and greatest, relaxing in the evenings with a beer in hand and the BBQ sizzling, while the sun sets with Vintage gliders in the foreground and in our case Mt Taranaki in the background.

Also noteworthy club news: our member Ralph Gibson has completed his training to Q.G.P level.

Robert Smits proposed to his girlfriend whilst flying a Blanik around Mt Taranaki, you can see the ring and the proposal action in the attached pictures. She accepted by the way, very romantic stuff.

With the end of summer and probably the end of good thermal conditions, we look forward to the winter wave weather; bring on the south westerlies.

C.S

OMARAMA SOARING CENTRE

It has been all go at Omarama this season, the campground has often been full to capacity and there have been more launches than ever before. It has been great to see the Youth Glide ranks swell and young people busily helping in the campground and on the airfield as well as doing plenty of flying.

A consequence of the extra activity has been pressure on resources in the campground. Increasing numbers of canine visitors has prompted a renewed no dogs policy and some protest. Another washing machine has been bought and we are working on how to cover the increased campground workload for next season. Feedback is sought from all campers on how to improve the kitchen and BBQ area in the future. Irrigation is a never ending task, with pumps, pipes and drippers seeming to take turns in providing challenges. The camp treeline irrigation has been replaced so it is nice to see watering only of trees, not the side of ones caravan or tent.

The landout protocol was instigated a year ago to aid farmer relations

and this has proved worthwhile. Also this year a flight following service was provided for itinerant pilots. These and other local safety functions need to be maintained, which is easier said than done with new pilots arriving and leaving almost daily.

After a long time coming, chalet leases are now available (thanks to Max Stevens and others) and new chalets are to be built. There has been a waiting list for sites for the last few years, however recently this has dwindled and one site is now available. Contact Max if you're interested.

The camp closed following Anzac weekend and will reopen when the frosts recede and Spring skies beckon. Keep warm, and see you back at Omarama in Spring.

Photo –Southern Belle safely home in her new hangar at Omarama

PIAKO GLIDING CLUB

Dennis Cook gave us a glimpse of the Discus B that we're currently leasing from Sailplane Services. Typical of Dennis; his first test flight was 4 1/2 hrs and 300 km!!

Our Easter Camp was very social with some pilots from Auckland joining us. The poor flying conditions were evened up by the grand meal Jan Mace and her team concocted on the Saturday.

Trevor Atkins' funeral was well attended and his wife, Julie, turned it into a celebration of his life (she had all the men's ties removed to eliminate the officialdom of the ceremony!). The service culminated in a fly-past with our tow plane and PW5 as Trev's coffin was carried from the chapel.

Congratulations to Keith Irvine for gaining his QGP. Keith is one of the growing number of pilots that have completed our newly implemented training courses. This is a more structured system than the original which was ad hoc. The current "A" Certificate course has just ended with four students having completed it and the next "A" Certificate course is to commence end of May.

Twenty ATC students had ab Initio training for a week at our airfield with five instructors in five twins from Piako, Tauranga, Taupo and Auckland clubs. I find it poignant that we as a sporting organisation devote many hours to training future pilots from organisations like ATC, who may well go on to fly for RNZAF. The CAA's contribution is to lower our class G airspace from 6500 ft to 4500 ft – I think I know where we lie in the aviation food chain!

Farewell and thank you to Rhonda Hewitt and Neil Stanford who are moving to Blenheim, and I'd like to welcome the nine new members who've joined our club. Moving forward, our club's AGM will be on May 10th.

Dom.

SOUTHERN SOARING

We finished our season on Friday 18 April in a similar way to how we started in September last year with excellent soaring conditions. On our last day, we did five flights totalling over five hours and had thermals as strong as 13 knots to just under 10,000 feet thanks to an unstable south-westerly air mass. All our staff are now overseas for the winter: Les and Irene back in Scotland, Don in Singapore, Mike in the UK, Marc and Darren in Canada, Rod in Australia and Adam in Saudi Arabia.

The big news for Southern Soaring during May was the purchase of our first tow plane, a "D" Model Pawnee (see article elsewhere in this issue). The aircraft will make a big difference to our operation at Omarama as it will give us more flexibility and (hopefully!) greater profitability. With the costs of a leased aircraft, it was interesting to note that Omarama Airfield Limited actually made more money from our towing operation than we did. Compared to the Dakota, the Pawnee will also be more suited to the rough Omarama Airfield surface and in carrying out retrieves, particularly from paddocks. In operating the Dakotas over previous seasons, we wish to thank Bruce and Rae Drake for their support.

The purchase of the Pawnee completes our initial capital investment in the business as, in addition to the tow plane, we now own four hangar spaces, a Duo Discus, a Twin Astir and a half share in an ASW28. As the business expands, we will look at purchasing a third two-seater. To accommodate this, we will be buying a fifth hangar space this coming spring.

We are looking forward to next season and, with a good number of advanced bookings for our Mountain Soaring Course, it should be another busy time.

Chris

SOUTH CANTERBURY

Gliding camps are not solely about gliding but other relaxing activities too. Here we have Pete McKenzie of the Alexandra Club on a fishing crusade near Wardells. He found himself the "catchee" by "catchor" Sarah Hedley.

TARANAKI GLIDING CLUB

We've enjoyed some good flying days from time to time but not all in a row.

Tim Hardwick-Smith probably has done the best locally, covering a swathe of country in his Pik 30 while Steve Barham did well in a different direction, (in the PW5) getting down to Hawera, getting re-light and getting back to Stratford.

Congratulations to Will Hopkirk on his 1st solo, to Richard Arden and Steve Barham for converting to the Twin.

We were sorry to lose the services of Paul Atkinson who has moved to the West Island. Jim McKay is our new Chief Towpilot.

Mid-week flying has seen some rewarding flying happening and thanks to Jim McKay and Ralph Gibson for making this possible. It was a pleasure to meet up with Peter Langley, a former TGC treasurer out to enjoy a gift-wrapped trial flight. Also, Dave Wellington, formerly of Stratford, now living in Perth and flying with the Beverly Soaring Group of WA.

PJM.

VINTAGE KIWI

We keep on steadily growing bigger and bigger. A few new members were signed up during the annual Easter Mini Rally hosted by the Norfolk Road Aviation Sports Club in Taranaki. The long Easter weekend saw VK pilots from 6 different clubs meeting up at the Norfolk Road strip to enjoy three beautiful days of flying with a T-31, Dart-17, Schleicher Ka-8 "Elle", Ka-6 and Blaniks. Robert Smits saw his chance and asked Liz to marry him at 6500 ft at the backside of Mt. Taranaki; some people called it entrapment, but he reassured he didn't even have to put the Blanik upside down to get a yes. Congratulations!

The VK website is updated and will keep expanding with news from NZ and overseas – keep checking regularly.

Rallies are already being planned for the next season; these keep attracting more and more pilots and families and are seen to be a good alternative if you want something more than just flying. New next year will be a VK flying meeting at Raglan during Labour weekend, and again an Easter Rally at Norfolk Road. See you all there!

DO

TAUPO GLIDING CLUB

Mixed bags so far this year with the persistent nor-easters not the most favoured wind for Taupo. Good soaring days have made up for the lack of ridge soaring and just lately we have had some good lift around the field despite what appears to be an over developed sky. The forestry to farm conversions in the area have helped with large areas of bare soil.

The Vintage Kiwi guys had a good time both in the sky and on the lake. Our competition pilots have acquitted themselves well at national and regional levels. Solo in a Week continues to be a great introduction to gliding. The trick now is to progress these pilots to QGP.

Two big events on and around the airfield were the A1 GP next door and the very enjoyable "Picnic in the Park" musical and flying spectacular. We stop flying for the A1 GP as it is on our doorstep and this year we hosted the Royal New Zealand Air Force Red Checkers team for their performance on the Sunday.

The Centennial Park racecourse and the airfield were the venue for the terrific "Picnic in the Park, Music in the Air" concert. The organisers, gliding club members but independent of the club, did a magnificent job in putting together a 'slow and low' air show, set to music, followed by a very professional concert. The climax was as good a fireworks display as you would see anywhere.

The flying displays were superb and featured amongst others, the Yak and Harvard aerobatic teams, two of Peter Jackson's vintage aircraft, and many other generous owners and pilots. The glider aero displays were highlights of the show, despite another strong easterly.

If you missed it this year make sure you attend next year. We will be happy to host other gliding club members and can make room for visiting aircraft if you want to fly in.

In April the club again was checkpoint 6 for the OXFAM 100km trailwalk. We are proud to support this worthwhile event, which raised over $1 million dollars to fight world poverty and injustice.

Tim N

Red Checkers Aerobatic team

GNZ members are eligible for one free non-commercial classified advertisement per issue. Deadline for receipt of advertising for our August issue is 22 July 2008

Following the death of Trevor Atkins we are unable to either access ads that appear on the website or pass on ads that are sent to the magazine. We are currently liasing with the new webmaster and hope to have the reciprocal service working again as soon as possible. In the meantime email advertisements to us at soaringnz@mccawmedia.co.nz.

FOR SALE

Omarama – 18m hangar space for sale in Third hanger • middle eastern side, good neighbours and has power available for details contact nigel-davy@clear.net.nz or phone Nigel on 0274 321 314

Libelle201B GGK. • Excellent condition, Glasflugel winglets, 2 pot urethane finish. Dittel radio, Terra transponder (A & C). New ballast bags. Tow out gear. **Fully refurbished trailer (2005)** Basic price $22,000. Optional items include; Cambridge 302 (Compaq aero PDA), Aerox oxygen system (portable). For more details please contact Phil Smith on 0274 864761 or Email phil.r.smith@xtra.co.nz

COBRA 15 GLIDER (ZK-GJE) FOR SALE • Best condition Cobra in the country, complete with tow out gear and trailer in good condition. It is fitted with an Icom radio and a Borgelt B40 vario. This glider is fully aerobatic, easy to fly and has a 38:1 glide ratio – comparable with a Libelle or Standard Cirrus. More details are available on: http://www.gliders-4sale.co.nz . Asking price: $18,500; but I'm open to offers, so don't be shy in contacting me. Contact Russell Jones, (09)527-3430 or email: PrismConsult@gmail.com

Complete with 15m winglets, 17.6m tips. Instrumentation includes Borgelt B100 Vario system, Sage Mechanical Vario. E.D.S oxygen system. Local manufactured "Cobra" style trailer. Hangared at Omarama (Hangar not included in sale)
Offers around NZ$ 65,000. Contact Don Mallinson 021 297 5044 or donald.mallinson@gmail.com or Tim Harrison timargo@xtra.co.nz

GOLF MIKE BRAVO IS FOR SALE $28000.00
Contact: warrenpitcher@xtra.co.nz Grob G102 Astir CS77 Standard 15m Serial No.1768 Less than 1000 hours total time.
New ARA & inspections carried out before handover, including instrument checks. ADs and required maintenance up to date. Custom built trailer; registered, new WOF. Easy rigging system, many extras.

FOR SALE – ZK GFR
Discus 2cT – 18 meter turbo – 2006 Current model. Approx 50hrs total airtime 3hrs motor time. Ilec SN10 flight computer/vario. New Cobra trailer. For further enquiries phone Ross at Sailplane Services Ltd 09 2947324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