Ripping Stories of School Life and Brave Adventure for Girls

Bumper Gliding Edition

Special Sealed Section Featuring Mr Darcy's Trousers

Keep Soaring

February-March 2010

Welcome to the Women's Edition!

This Women's Edition of Keep Soaring breaks new ground! It's probably the first issue of *any* gliding magazine to include a Sealed Section, just like the women's magazines of old. Because of some expected technical problems, this is a "virtual seal". A bit like the government's new internet filter, it's rather easy to get around. If you insist on a fully sealed sealed-section, email me at the complaints email address and I'll post you off some double sided tape.

No women's edition of any magazine would be complete without fashion and some mention of Mr. Darcy… and fortunately we have both. In fact, better. We have a full story on Mr. Darcy and his trousers.

A real drawback of this edition that needs mentioning up front is that there were meant to be a number of women contributors, but a whole lot of things got in the way. One of our Principal Women at LKSC decided, albeit reluctantly, to resign. Another's career was covered in depth by a rival soaring publication which also contained a great article from a third. A forth woman agreed to contribute and then declined…

So what we are stuck with is a cover and a very small amount of writing done by a real woman.

We can boast that 90% of the pictures were taken by a not only a real woman, but a vicious feminist to boot. Due to her efforts and the efforts of the club members involved, Lake Keepit has taken a step forward on the world stage since there are three attributed pictures of the club in the second edition of Advanced Soaring Made Easy.

It has not been the best of flying seasons so far at LKSC. There has been a lot of rain which Sam Clift describes as 'Ripper!" so someone is benefitting from it. The plains around Keepit have been looking like Ireland except the parts which have been looking like the Lake District. So it's a shame that Garry S says we have not had that much rain at all!

I hope you enjoy this month's effort. Thankfully, many of the complaints can be sent to Al Giles this time since his stuff is more inflammatory than mine.

The Editor.

Address complaints to: Editor@keepitsoaring.com

Bye-Bye Jenny

It's with some regret that we say goodbye to our manager, Jenny Ganderton. Jenny has decided she has to look after her dad and cannot continue at the club.

Jenny was an untiring instructor and never failed to say what needed to be said as encouragement or correction. Her enormous enthusiasm and energy will be missed… as well as most of the club tools which she rounded up every Monday. Jenny got an extraordinary number of students solo, frequently training the un-trainable (speaking personally here).

Jenny was finicky about maintenance. If there was anything she couldn't do herself (she was not a natural with a soldering iron) someone would be buttonholed to do the work. As a result a lot of small details on club gliders were kept up to scratch instead of being ignored.

I remember being up at the club last summer and seeing two students moping around over the weekend. When I asked why they weren't flying with the rostered instructor, they replied that they were "waiting for Monday when Jenny got back." Like ducklings which think some other critter is their mother, these guys didn't want to risk learning from anyone else.

Jenny is a complete flier… or air junkie if you want to use her own description. Not content with flying gliders and the tug 5 days a week, she gets get into her Jabiru for the trip down to Cowra on Saturday morning and will be back on Monday ready for work.

Jenny's cross country exploits are always something to be looked out for. Her problem is that she won't give up until the glider is on the ground, either back on the strip or in some paddock.We all wish Jenny the best wherever she goes and hope to see her back at the club as soon as possible. For more on this see the President's Report

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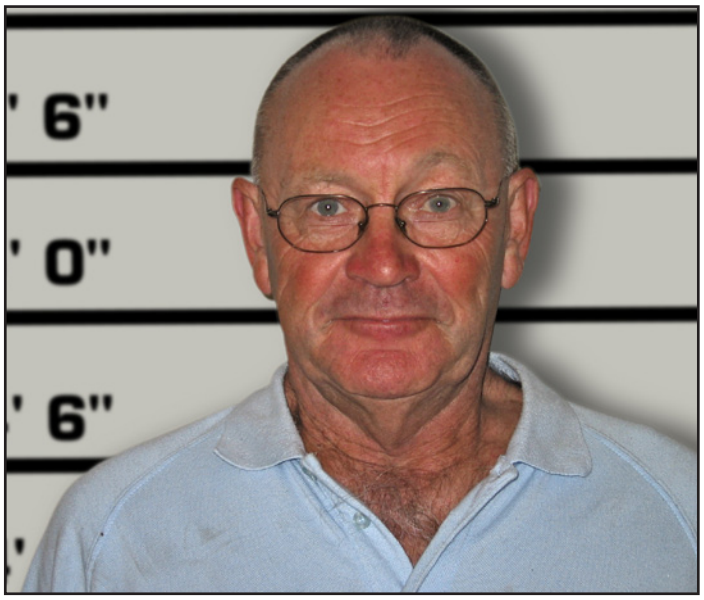
KEEP SOARING
FEBRUARY-MARCH 2010

PRESIDENT'S REPORT



It gives me great pleasure to announce the appointment of Mr Ian Downes as the new Midweek Manager of Lake Keepit Soaring Club.

Following Jenny Ganderton's reluctant resignation to move back to Cowra to care for her father, the Club advertised for her replacement and received a surprisingly large number of responses. After interviewing the two short listed applicants, both of whom were eminently suitable, the Committee has offered Ian Downes the position.

Ian Downes comes from the VFMG Gliding Club, at Bacchus Marsh. He currently lives in Melbourne and will be moving into the Managers Residence at Keepit airfield. Ian will be commencing at the club on 22nd February which will give him a chance to meet many of the club members who will be at the club that week for the regatta.

Ian is a Level 2 Instructor, a Tug Pilot and has been an active member on the management committee of the VMFG club, with a particular interest in the development and promotion of their club. He also gets involved in maintenance and plans to participate in the next glider maintenance course. The many referees from his club and others in Victoria have all stated how much he will be missed.

We are looking forward to having Ian working with us with his obvious energy and enthusiasm for club development. He will also be joining us during the months ahead which are ideal for training, when the debilitating heat on the ground subsides.

His experience here will ensure that the Club's reputation, built up by Jenny for midweek training, can be continued.

Ian (aka OFITTH) at the Birdsville races

JENNY GANDERTON

Our thanks go to Jenny who is retiring as Manager. During her years at the club she built up a wonderful reputation as a top class training instructor, and has introduced many new pilots into the club – people who came to learn to fly, and stayed.

Jenny demonstrated enormous energy and worked long hours for the benefit of the club. She is a self confessed aviation junkie and obviously enjoyed her work, and it showed. Jenny will be moving back to Cowra to care for her father who is becoming very frail. But she remains a member of our club, intends to return for the Regatta in February and still keeps her Mozzie in the hangar out the back. We still expect to see lots more of her as a club member in the years ahead when she gets the time to fly.

Jenny has set a very high standard, and we have confidence that Ian Downes will step into her shoes and do a great job at Lake Keepit. We look forward to having him working with us. I'm confident you'll get on well with Ian, and find him instructive, energetic and helpful.

We invite you to visit Lake Keepit Soaring Club soon to meet Ian – whether as a club member to get a tow midweek, as a visitor to experience the great country side we fly over, or as a new pilot wishing to extend your skills with our midweek training courses. Contact www.keepitsoaring.com or manager@keepitsoaring.com

KEEP SOARING

FEBRUARY-MARCH 2010

PRESIDENTS REPORT PART 2

Well as you can imagine it has been a hectic time for the Committee over the last month or so as a result of Jenny's decision to spend more time with her dad. See the separate note

THE REGATTA

The upcoming Keepit Regatta is progressing well with 35 entrants flying 26 gliders. The dates are 21st to 27th February. See the club website for further details.

While the Regatta is a self catered event, we have two dinners organised, the first is a Mexican night on Wednesday 24th Feb, and secondly a final dinner on Sat 27th.

In the eternal spirit of "Tijuana Soaring" we will be putting on a three course Mexican meal of nibbles, tacos and burritos, sangria and tequila worms. For those of you who wish to really get in the spirit, feel free to bring along your Mexican hat, big moustache and/or sombrero.

Tickets are $15, and numbers must be purchase by Monday, so let me know if you and partners will be attending. All families and crew are welcome but tickets need to be pre booked.

To round out the week we have organised a final dinner on the Saturday evening with presentations. The menu will be roughly along the lines of pre dinner drinks, King Island Cray and cheese plate for entrée.

Main will be a choice of, marsala pork belly and apple sauce, orange chicken or fillet steak. Sides will consist of warm potatoes with green pea dressing, baby carrots and yellow squash, broad bean salad with olives and anchovy dressing, rice salad with ginger and walnuts and a green salad.

To finish there will be baked cheese cake or apricot tart with a rum glaze. Again tickets will need to be pre booked by Monday, so let us know if you will be coming. Tickets are $25.

All members are welcome to join in, but will need to confirm their attendance with the organisers well in advance.

NEW PROP ON THE CALLAIR

The Club has purchased a new prop for its Callair, as part of its ongoing maintenance and upgrade program. This is due to go on at its next 100 hourly after the Regatta.

CONCRETE REFUELLING HARD STAND

Following the purchase and installation of the Callair's new prop, we are working on installing a new concrete hard stand in front of the fuel bowsers, both to make it easier for the tuggies to refuel, but more importantly, to reduce the incidence of stone damage on the prop. This work will be undertaken once temperatures cool down a bit, but timed to coincide with the fitting of the new prop.

NEW HANGAR AND MAINTENANCE FACILITY

We are currently in the planning stage of building the 3rd of the new hangars, with work scheduled to be carried out during the winter months this year. At present, the plan is for half of this hangar to be a dedicated club maintenance facility. Watch this space!

2010 COMPETITIONS

The Committee has been informed that we wont be holding the Club Class Nationals this year, but we have been offered the State Comps. The biggest issue for us this year is choosing a suitable date in order to avoid conflicting with other competitions scheduled for later this year.

THE CHAMBERLAIN TRACTOR

Many members may be aware that the PTO on our Chamberlain tractor is currently out of service, and we have borrowed a tractor from a local farmer to ensure the airfield can be maintained in a suitable condition.

Our Chamberlain is currently with Sam Clift who is stripping the PTO gearbox down to determine whether this is repairable. Thanks Sam for undertaking this on behalf of the club.

Once the Committee know the full details on the damage, we will work out the best way to rectify this situation.

That's about it for now. See you all at the Regatta!

Tim Carr

TAMWORTH BOYS & GIRLS AIR LEAGUE SQUADRON VISIT

The Tamworth Boys & Girls Air League Squadron had organised a winch air experience operation. They turned up, as planned at about 11 am The temperature had got up to about 35° by early afternoon when they assembled at the old bus for their winch launch. I was up at the club getting ready for the Safari and was detailed to immortalise the event on film… or the digital version.

Some of the cadets had flown before, others never. This seemed slightly odd, seeing as one girl had been in the air cadets for two years and never flown in her life! I took some pictures of her in the cockpit smiling before her first flight.

She asked what it would be like, and if she would like it, having never flown before. I was very tempted to suggest she try a normal aeroplane for her first flight, but thought better of it. What would I know, I'm far too windy to go up on the winch! Anyway, she was an air cadet, looking for adventure. And she was about to get it.

With final checks over, down went the canopy and off she went into the sky sling shot style. I held my breath. I really hoped she was liking it!

Meanwhile another glider landed and its cadet went back to the pack lazing at the bus. About half an hour later our first time girl arrived back.

I raced over…"So how was it?" I asked. "Awesome!" Came the reply, "That was totally awesome!" And there was that big grin again. Thank goodness I kept my trap shut! Hallelujah!

One by one the kids were brought onto the strip, as the planes flew in relays, back and forth all afternoon.

A couple of the women minders also took the challenge, and enjoyed their short flights. Much to the delight of Trevor, who certainly enjoyed ferrying the ladies up. I caught wind of him mumbling something about a possible out landing.

There was only one cadet who was smart enough not to go up. Only one, who had the excitement of a cable break, she got a second go! How good is that?

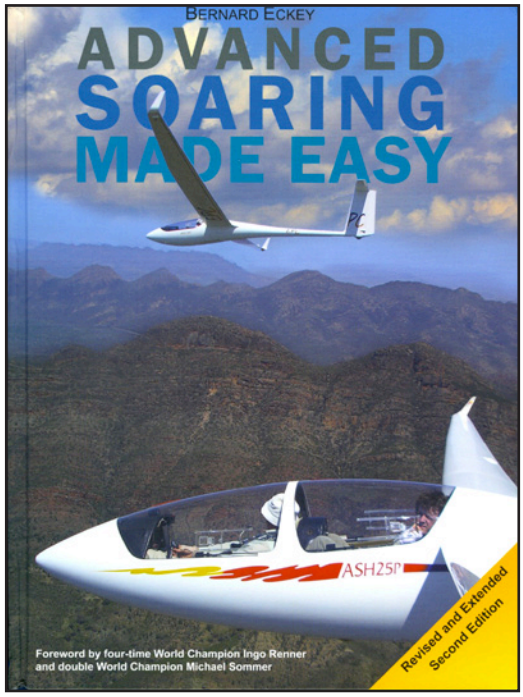
And all of them came back in one piece. It was a hot day and very energy sapping for most of us and it certainly would not have worked if the various members had not co-operated. All in all a great day out for the kids, well done Lake Keepit crew.

Picture captions (more or less!)
Previous page,
Left: Looking nervously happy before her first flight.
Right: Peter and "English Bob". E.B. did almost all the strapping in and wing running.

This page.
Top Left: Trevor contemplating an outlanding.
Bottom Left: Gerhard takes the front seat to balance the glider.
Top Right: Trevor and another pink passenger.
Middle Right. Happily nervous!
Bottom Right. Peter Sheils shuts the lid.

Keep Reading

February-March 2010



The second edition of Advanced Soaring Made Easy has hit the bookshelves with quite a thud. This edition is not quite a complete rewrite but close. It appears to be almost twice as big as the old version and that was barely a year old. It's certainly twice the weight.

The book has been expanded in almost all areas including chapters on modern instruments, oxygen use, flying in Europe, wave flying in New Zealand and lots more great pictures, some printed right across the double page.

There were a few small criticisms of the first edition… some of the diagrams were too small and it was, ahem… slightly Schleicher orientated. Well, the drawings are now larger and there are plenty of shots of other makes of gliders, including three from Lake Keepit including a close-up of LKSC's own airborne Stig posing for the camera in an LS-4… and two are captioned as Lake Keepit.

Reichmann's "Cross Country Soaring" is now quite dated in many respects and the Italian book "Competing in Gliders" is focussed towards high level competition. This leaves Advanced Soaring in a class of its own for many soaring topics.

I can recommend this book to anyone, especially a pilot who is post solo and has run out of inspiration in the GFA's Basic Gliding Knowledge.

We are tremendously fortunate to have a book like this which includes a mention of our own country, let alone one where Australia is the main focus. Buy it now!

Do you know WIDOLA? It's the annual magazine World Directory of Leisure Aviation. It's the love child of the old Berger-Burr's Ultralight and Microlight Aircraft of the World and is like a mail order catalogue of everything from hang gliders to home-built sub-sonic passenger jets. As such, it is required reading for anyone whose feet have ever left the ground.

This year, WIDOLA is separated into two magazines. One is devoted to flex-wings and the other is for rigid wing aircraft. Another new thing is that certified sailplanes are included in their own section, free of the taint of the many ultralight sailplanes which have their own category. An interesting thing is that on every ultralight glider, a price is quoted which is missing on every certified glider!

There's no doubt that there's a lot of activity and innovation in the ultralight category. Electric powered self-launchers have been appearing for years and there are all types of shapes represented from flying wings like the Swift to the two seater side by side Taurus from Pipistrelle… which has more than a passing resemblance to the Platypus.

Claus Olsen bought a Taurus for training and he says that the side by side layout is better than tandem. The 40:1 performance and reasonable price are not much of a drawback either. The strange single bladed propellor on the low-cost Silent glider gives it a climb rate which is the equal of any self launcher. Perhaps, with gliding's dwindling membership it's time we had a proper look at this other half of gliding before it's too late?

KEEP SOARING
FEBRUARY-MARCH 2010

CFI-CARE

Well we have had some good flying over the past month. It has been very good to see the new pilots coming through and progressing to X Country so fast. I think that the most rewarding flying comes when you are pushing yourself to progress into new area's and staying very current.

Flying standards have been good with all showing good airmanship I the circuit area. On some of our busiest days there have been some very good flying and separation communications. Keep up this high level in the circuit area please

We hope to do some more instructor training this year and so I would like to hear from anyone who feels they may like to help as an instructor. Being an instructor not only enables you to give back to the club and the sport but also increases you flying skills. So please let me know if you can help.

I have appreciated a saying I heard from Ian McPhee many years ago. " Height is like money in the bank and speed is like money in the pocket, so never fly broke"

I will be starting back at work in Narrabri in Feb and around Easter I will be shifting to live at Narrabri, so will have a little less time for flying/instructing. So will need a little more time to co-ordinate in future.

Safe flying

Ken Flower

LETTERS TO THE EDITOR

Dear Editor,

OUT THE TUROPHILES!

I have just learned that Lake Keepit Soaring Club harbours several notorious turophiles. They conduct their activities in plain view at Club social functions.

I believe they should be outed as the preverts that they are.

Supeito Gali (Outraged of Manilla)

Hello Outraged,

I could not agree more! After a day's flying in hot weather, we are all probably a bit whiffy and having these turophiles loose at the communal tables is an affront to everything that is honest and decent at LKSC.

In this regard you cannot trust the French. Just look what L-P Fargue has to say on the subject!

"Le camembert, ce fromage qui fleure les pieds du bon dieu" Léon-Paul Fargue. Voilà une phrase qui décrit bien la situation non?

One can do no better than to quote the words of General Buck Turgison who at that stage had not heard the term "Cheese-eating surrender monkeys":

"Yes gentlemen, they are on their way in and no one can bring them back. For the sake of our country and our way of life, I suggest you get the rest of SAC in after them, otherwise we will be totally destroyed by red retaliation.

My boys will give you the best kind of start, fourteen hundred megatons worth, and you sure as hell won't stop them now. So let's get going. There's no other choice.

God willing, we will prevail in peace and freedom from fear and in true health through the purity and essence of our natural fluids. God bless you all."

Who knows what the club will come to if these people continue!

The Editor (replacing the dictionary back on the groaning shelf).

THE ACRO COMP

There have been some minor grumblings about our captions competitions. Comments along the lines of "why can't we have something more airworthy?"

*A		ACJ-XXX	
A		ACK	
A		ACL	
A		ACN	
A		ACN	
AG&S		ACPT	
A&IEU		ACROB	
A&L		Act	
A&P		ACT	
A/A		AD	
A/G		AD	
A&P		ADA	
AA		ADAO	
AAA		ADC	
AAAA		ADDGM	
AAC		ADDN	
AACC		ADF	
AAD		ADIZ	
AAIM		ADJ	
AAIS		ADO	
AAL		ADQ	
AAR		ADR	
AAT		ADS	
ABAA		ADS	
ABAS		ADS-B	
ABF		ADS-C	
ABI		ADSU	
ABM		ADZ	
ABN		AEB	
ABT		AEP	
ABV		AER	
AC		AERIS	
AC		AFAP	
ACA		AFCS	
ACARS		AFIL	
ACAS		AFIS	
ACC		AFM	
ACCID		AFM	
ACD		AFRU	
ACFT		AFS	

OK. Here it is. This comp will run over the next few issues. All you have to do is to correctly fill in all these Aviation Acronyms. This month we have some of the As.

No cheating! People who attempt to look up the answers on the net will be punished as severely as anyone who cannot remember this list perfectly off the top of their heads in a busy cockpit. Answers to the usual address. First 100% correct entry will be the winner!

CHRISTMAS CAPTION COMP ANSWER

This one must have been too easy since almost everyone got it. Of course Marga has *always* cleaned Ray's glider and that's exactly what he said. The fact is, it ain't that difficult to clean a glider and it doesn't really need any special skills and someone of Ray's capabilities could easily learn. Nevertheless, the idea of having someone else clean your glider every day is an attractive idea and something to aim for. How hard could it be?

In spite of hints, suggestions and much begging, I've been completely unable to get the Boss to look after her investment in GRP.

She's been left with copies of the maintenance manual, Basic Gliding Knowledge, a bucket, sponge, chamois, rags and polish. I provided a foot pump and gauge for the tyres and a grovel mat to lie on. There's a vacuum cleaner for the inside and some of that special spray for the canopy and I have explained exactly how to wash it without running the risk of scratches. I provided some teflon grease for the clear view panel slide and a paint brush to clean the instrument glasses… and then realised that it was MUCH easier and quicker to do it myself!

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MEMBER PROFILE

GEOFF NEELY

I CAN'T THINK OF ANYTHING I WOULD RATHER DO

JOHN STEWART

There are some people who decide early what their occupation should be, go on to do what they intended and enjoy it ever after. John Stewart is one of them.

He finds general practice rewarding and stimulating. There is always more to learn, as indeed he says there is in gliding. For one thing there are medical conditions now which have names that were unknown when he started, such as Asperger's Syndrome and Autistic Spectrum Disorder [and a whole lot more which I seem to have]. Surely people always had these but the profession has moved on and you have to keep up with it.

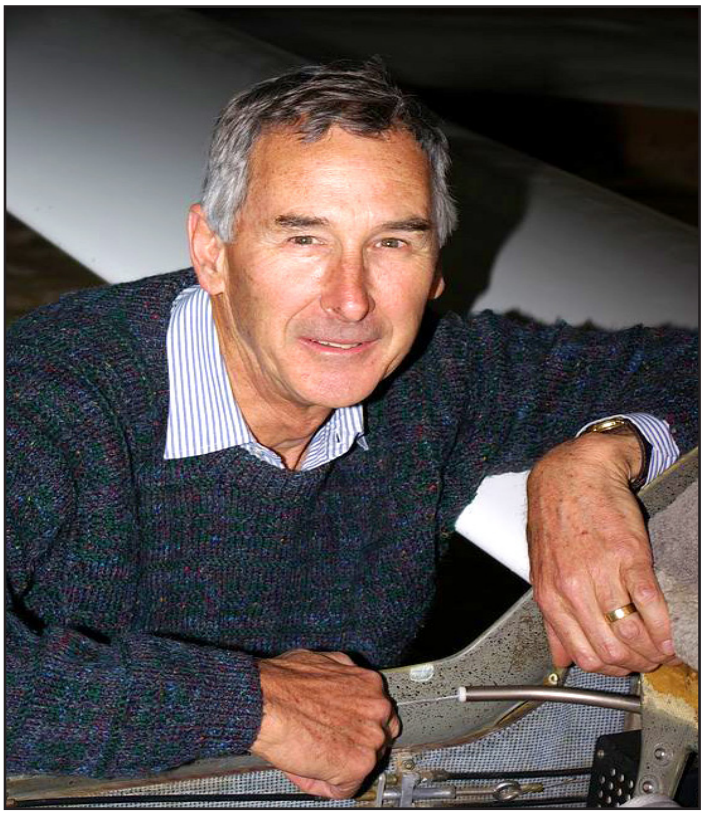
He says when a person sits down opposite you and says they are unwell you must begin by asking every question. You will form an hypothesis but you must beware of jumping to conclusions. You must know the right questions to ask as the interview proceeds. There must be two-way communication and if you listen carefully the patient will tell you what is wrong. John says he is privileged to work in this profession.

John Stewart was born in Adelaide, the eldest of three boys. He describes his family as academics. His father was a medical practitioner. When John was four his father took up a private practice in Casino and John looks back fondly to his early years in a country town. The family moved to Brisbane and by the time John was ten they were in Sydney.

It is not surprising that an Adelaide boy who had grown up in a country town did not see himself as belonging to Sydney. He studied medicine at Sydney University and in 1974 he graduated and started hospital training.

This is the year in which he met his wife Margaret. Unlike him, Margaret has an extensive family and meeting 40 family members at her twenty-first birthday party was a new experience for him.

John gained a graduate diploma in Obstetrics and Gynaecology and joined a group practice with four other members. In 1986 three of them went out independently.



Although Margaret was a Sydney girl the couple wanted their children to grow up in a country town rather than in what some call The Emerald City and others Sin City. Tamworth had then the biggest base hospital in New South Wales and some of the 40 relatives were there so Tamworth it was and has been ever since.

Flying and aircraft were always an interest. John's father flew DH82 Tiger Moth and DHC1 Chipmunk at Casino but John never got to fly with him. However, he assembled Airfix static models and progressed to reading the theory of flight and designing model gliders.

An article in Australian Geographic magazine about wave flying over the Snowy Mountains, with some beautiful photographs, sparked his interest and kindled the desire to fly "when the children were grown up".

He took a passenger flight at Lake Keepit with his father-in-law. Then Frank Hudson told him he could learn to fly at Lake Keepit Soaring Club but warned him that it was possible that he would spend money on a week's course and not like it. No such thing: John says he was petrified on the first flights but very soon took to it.

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This was with Jim Stanley in 2000. He says he never tires of flying and learning. Gliding and sailing appeal to the same kind of person and sure enough when you probe a little you find that John Stewart sailed DJs and Moths at Botany Bay and George's River.

Memorable flights include a series of competition flights in the Twin Astir with Jim Stanley and a cross-country flight with John Hoye. On his first five-hour flight John remembers the feeling of peace, on his own in the Junior late on a beautiful afternoon. The clouds were dispersing, most others had landed, and he worked every bit of weak lift just to stay up there. This was in about 2003.

John now has his gold badge. His gold distance was an enjoyable and satisfying flight. On a blue day he went to The Gap, Narrabri, Manilla and home. Asked what are his goals, he says more of the same. He does not want to compete but he is interested in cross-country and he just likes flying. The thought of getting a PPL and becoming a tug pilot has occurred but this is well down in priority. He is not interested in hang gliding or paragliding – just sailplanes.

About six years ago John's brother rang and invited him to join him walking in Nepal. John and Margaret had not been bush walkers but they went and became hooked on a new activity. The have walked the Annapurna Circuit in Nepal and have walked from the Nepali Everest Base Camp to Gokyo.

They are interested in other countries and other people and have had exchange students to stay with them, sending their own children overseas in exchange. They have visited their exchange students in USA, Czech Republic, Sweden and Germany. They are going to Japan soon to the wedding of one of their exchange students. All of their children have travelled overseas and Jennifer has spent six months in Germany. They have all flown with their father.

Classical music is a major interest – as a listener and concertgoer – John does not play an instrument.

Margaret runs the office of the medical practice. John and Margaret have three children: Jennifer was born in 1974, Andrew in 1976 and Joanna in 1979.

Of the children Jennifer works for a company that organises services for disabled people. Andrew is a chef. He and his wife will present the first grandchild in a couple of weeks. Johanna is an event manager.

Geoff Neely

DO YOU NEED A HANGAR SPACE?

The LKSC Committee is seeking expressions of interest from members who wish to invest in a 1/4 share of a new hangar. The hangar proposed is the same as the last two built i.e. 18m x 24m, and is to be located uphill of the current two. We already have an approved DA and power/water to the site.

We currently have two parties who have noted their interest in taking up a space, and require two more in order to progress to construction. There will be 4 spaces in the hangar in total. Indicative costings are $20k for the hangar and an optional $5k for concrete floor.

EXAM ANSWERS PART 2

What did Mahatma Gandhi and Genghis Khan have in common?

Unusual names

Name six animals which live specifically in the Arctic.

Two polar bears
~~Three~~ Four Seals

Name the wife of Orpheus, whom he attempted to save from the underworld.

Mrs Orpheus

1/09 X-Country Gliding Course

As many would be aware 327FLT conducted their 1st continuous training course for 2010 (15-23JAN inclusive) now ramping up 9 continuous training courses per annum within the gliding side of 3WG aviation. This course was the re-introduction of a specific X-County training course which was conducted at Lake Keepit Soaring Club (LKSC) with the detachment accommodated at the BAE Complex (ADFBFTS) and also utilised 310SQN lecture room facilities at Tamworth Regional Airport.

The majority of cadet students were RAAF Scholarship holders. I'm pleased to pass on that the CSE was a complete success and is now certainly a training platform that will be apart of the 327FLT (3WG) continuous training annual construct.

In summation, the location was very suitable and LKSC were great hosts. The concept of X-Country progression is certainly an area that will have to continue due student progression within 327FLT and simply the results at table 1 support its continuation and funding.

It should also be noted that CIA approved activity funding was only reason this CSE got legs, in turn with the RAAF Scholarships the CSE gives evidence to RAAF and AAFC initiatives that are without doubt enhancing AAFC aviation.

Finally the cadets in attendance represented the AAFC, 3WG and their local units positively and confirmed accurate selection for RAAF Flying Scholarships.

Bill Gleeson-Barker

FLTLT (AAFC)

Achievements included;

Name	Rank	No	SQN	Achievement
*Amy Baddams	PLTOFF	8494401	310/337	1st Solo and GFA A Cert
*Carl Downey	CSGT	CM376081	318SQN	GFA B Cert, GFA C Cert, 50km task for Silver C, 327FLT Wings test.
*Mitchell Thom	CCPL	CM376628	322SQN	GFA B Cert, GFA C Cert, 327FLT Wings test and Pax Rating
*David Thom	CCPL	CM376629	322SQN	GFA B Cert, GFA C Cert, 327FLT Wings test, Pax Rating and 5 Hour FLT for Silver C
*Nicola Jones	CCPL	CF377112	310SQN	CFA C Cert, Pax Rating, 50km task and height gain for Silver C
Jacob Geldof	CCPL	CM376525	337SQN	GFA B Cert, 1x 1 Hour FLT for C Cert, 327FLT Wings Test and Single Seat conversion
Zac Geldof	CCPL	CM376527	337SQN	GFA B Cert, 2x 1 Hour FLT for C Cert, 327FLT Wings Test and Single Seat conversion
*Ben Brooks	LCDT	CM375639	306SQN	GFA C Cert, GFA Silver C distance, height gain, distance completed and Pax Rating
*Marco Hurtado-Espinosa	LCDT	CM376658	307SQN	GFA B Cert, and 2x 1 hours flight for GFA C Cert.

* RAAF Scholarship holders.

The following staff attended;

Name	Rank	SQN/FLT	Duty
Bob Sheehan	FLTLT	327FLT	SFI, ATP and DETCDR
Bill Gleeson-Barker	FLTLT	3WG	QFI, ATP and Co-ord
Amy Baddams	PLTOFF	310/337SQN	ADMINO
John Hoye	CIV	327FLT	QFI and Chief Instructor
Peter Sheils	CIV	327FLT	QFI
Stephen Hedley	CIV	327FLT	QFI
Chris Gibson	SGT	3WG/337SQN	Student and OPS
Andrew Brumby	LAC	327FLT/310SQN	ATP and MC

NETTO

What does netto mean and what significance does it have for us when gliding?

"Netto"in German and Italian has the same meaning as net in English (as in net weight) – "the amount left after subtracting any extras , free from all deductions, such as charges, expenses, taxes".

A NETTO VARIOMETER is a variometer which reports the vertical speed of the glider, less the polar sink rate of the glider at that speed and wing loading. This provides the pilot with an accurate measurement of air mass vertical movement through which the glider is travelling.

So, if you're flying in perfectly still air, the netto variometer will read zero, even though your glider may be sinking at 2 knots or more. If you're in a particularly nasty patch of air, your normal variometer may show 9 knots down as you're screaming along to escape the sinking air - your polar sink rate may be 4 knots in surrounding air sinking at 5 knots. The netto variometer would be reading 5 knots down.

Many modern variometers can display a netto reading. It is particularly important during cruise, and varios can be switched from the glider's rate of climb in thermals to netto in cruise – sometimes with a manual switch, or on flapped gliders the switch is activated by the position of the flap lever (positive flap for climb, zero or negative for cruise), sometimes by G force sensor activation (greater G during thermalling).

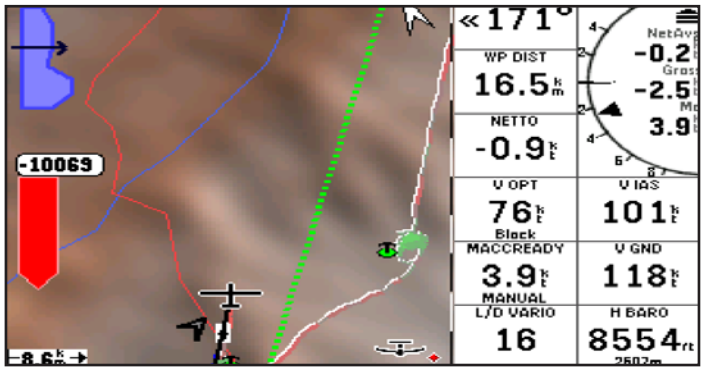


Fig 1. An XCSoar screen display showing Netto Average of -0.2 knots (in the vario box). Instantaneous netto reading is -0.9 knots vs total glider sink rate of -2.5 knots. At this speed the difference of 2.3 knots is the calculated sink rate of the glider at current speed. XCSoar is used in the Club's Duo Discus, and can be operated on any PDA handheld computer.

(The LKSC fleet with Cambridge LNav instruments can be set up to automatically change to display netto in cruise (I think it changes at speeds above 60 knots). XCSoar can be configured to separately report the Netto figure in the cruise screen. You need to read the instrument's instruction to check how)

Be careful though – I'm not advocating you watch your Netto vario reading while cruising. You'll get much more information looking outside – but if your vario is "wowing" between thermals its time to look for a change of air, and if it starts beeping at you then it might be worth following the line of energy a bit further.

The significance of netto was very apparent to me when I was doing the analysis of comparative flight traces from the Keepit Easter Regatta.

Seeyou flight statistics produce a Netto figure for the flight which is the average netto vario reading from your cruising flying. *(see following page.)*

This is the measure of the air you've chosen to fly through. If the figure is positive you've managed to stay in good rising air. If you've scored a negative netto for the flight, you've found a lot of sinking air.

The single factor that stood out from analysing the regatta flight logs was that those pilots with positive netto flights ended up with the speediest X-C results.

There were wide variations in the other factors – average rate of climb, percent time thermalling, average ground speed – none of these were good predictors of the results. The only consistent factor common to the winners was that they chose better air to fly in and had the better netto figures.

Flying through good air is equally important, whether you're racing, trying for a badge flight, a long distance flight or just local soaring. Choosing good buoyant air will keep you up longer, reduce the time you need to stop in thermals, improve distances flown and speeds achieved.

Some people say you can relax between thermals, but this is the time you most critically need to seek out the better air. You need to concentrate to deviate for the little wisps – there will normally be buoyant air underneath; to look for haze domes ahead; to look well ahead and line up the best cloud streets.

NETTO

Flight statistics

Maximum altitude gained: 4334ft, low point 2323ft at 02:56:34, high point 6657ft at 03:16:10

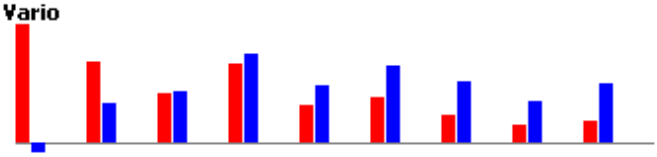
Circling:	Time	Vario	Alt.Gain	Alt.Loss	Thermals
Total	00:40:44 (26%)	3.3kts	15118ft	-1371ft	11
Left	00:08:16 (20%)	2.6kts	2648ft	-472ft	1
Right	00:32:28 (80%)	3.5kts	12470ft	-899ft	10
Tries (<45s)	00:06:50 (4%)	0.6kts	1634ft	-1237ft	9

Straight:	Time	Dis.Done	Alt.diff	Netto	Avg.GS	IAS	Glides	Avg.Glide	Mean L/D
Total	01:55:58 (74%)	295.0km	-15184ft	1.6kts	153km/h	145km/h	12	24.6km	63.7
Rising	00:25:30 (22%)	58.1km	16463ft	6.8kts	137km/h	132km/h			-12
Sinking	01:30:28 (78%)	236.9km	-31647ft	0.2kts	157km/h	148km/h			25
Netto rising	01:13:46 (64%)	185.7km	6946ft	4.0kts	151km/h	145km/h			-88

Wind

<2250	2500	3000	3500	4000	4500	5000	5500	6000	6250>	[ft]
4.1	5.4	1.8	7.0	22.4	39.3	34.1	28.7	11.2	2.7	[min]
167°/14	172°/11	171°/12	153°/16	149°/18	153°/16	160°/15	162°/14	158°/16	161°/12	[°/kts]

Vario



<1.5	2	3	4	5	6	7	8	8.5>	[kts]
10.0	6.8	4.3	6.7	3.2	3.9	2.4	1.6	1.9	[min]
-312	1158	1506	2635	1709	2267	1814	1234	1736	[ft]

Fig2. SEEYOU Flight Analysis software reports average Netto for the flight. Note the Mean L/D achieved of 63.7 from flying through good air – average Netto achieved in cruise 1.6knots

Turn away from sink streets. Turn up or downwind when you fly into buoyant air and milk as much as you can out of the lift before resuming your task direction. If you're following another glider and it falls away underneath, fly off to the side – don't follow into his sink hole.

Cruising between thermals is not a time to relax, and in fact probably needs more concentration and effort to ensure you get the best air. If you do, you'll be pleasantly rewarded.

Any similarities between this landscape and Ireland are entirely understandable. Lake Keepit January 2010.

The club is awash with sponsorship money. Almost all the plumbing in the club is being sponsored by someone!

If anyone can discover who this NK soaring lot are, can they contact the treasurer ASAP who wants to discuss terms.

Interesting Clouds #1. Mammatus?

Interesting Clouds #2. Horribilis? This lot promoted landings from all directions, mostly landings over the bus onto 20.

Interesting Clouds #2. Within a short while, the entire area was socked in. These clouds gave good lift underneath and nothing everywhere else .

Interesting Clouds #3. Horribilis again? This was the view upwards confirming that downwards looked better.

BGA SAFETY FLASH

Tug Upsets

These happen when the glider gets excessively high, pulling the tug tail up uncontrollably. Sometimes the glider suddenly zooms above the tug in an unstoppable manner after an initial pitch-up, putting the tug into a steep dive requiring as much as 400 feet to recover. The sequence of events occupies only 2-3 seconds, giving little chance for either the glider pilot or tow-pilot to recognise the problem and pull the release in time.

Some years ago the BGA ran a successful campaign to stop the resulting fatalities to tug pilots, but several years without incident now appear to have ended. This year there have been two reported upsets and at least one other not reported. Fortunately none resulted in crashes.

Six factors make upsets more likely. Three or more together should be considered unacceptable:

- **Lightweight glider, low wing-loading**
- **C of G hooks intended for winch launching**
- **Short ropes**
- **Pilots with little aerotow experience**
- **Near aft C of G.**
- **Turbulent conditions**

C of G hooks are the worst factor but the presence of any of these factors increases the danger.

Keep Soaring Flash

1. Nobody likes a know-all, but maybe Australia's Low-Tow is not such a bad idea after all.

2. You are now entering the SEALED SECTION of Keep Soaring which hopefully contains Offensive Material.

This being the official Women's Issue of Keep Soaring, it's only fair that we should cover things most interesting to women. And what could be more interesting to most women than Mr. Darcy's trousers. I've witnessed gangs of women sit around the TV for hours sighing and groaning on a wet weekend, re-running the DVD of Pride and Prejudice, waiting with baited breath for the pivotal scene where the awful Mr. Darcy walks out of the duck pond, according to most women, "damp and magnificent."

According to the Times, Mr Darcy's Trousers were without any doubt at all the outfit of 1995: "Nothing came close to those trousers...The sight of Firth wearing button flap, full-front breeches sent women everywhere into fainting fits…" and literally millions of viewers would have liked to examine the contents… so to speak.

We're proud to announce in this issue of Keep Soaring, that we can offer the world exclusive revelation… What's actually inside Mr. Darcy's trousers!… Which is why this has to be a sealed section.

At this point I think it's necessary to put in a word for an endangered species. The fact is, and I hate do disappoint all those fans, Mr. Darcy is not a *real* man. It's not just that Mr. Darcy is a fictional character, it is that men like Mr. Darcy just don't exist.

Example: When Darcy first proposes to Lizzie, he's roundly rejected. The second time he proposes, he gets accepted. What's wrong with that? Well, Mr. Darcy has *changed*. He's become a *new man*. And that's *exactly* what real men don't do.

At some time, between the ages of 16 and 20, a man's character becomes set in stone and his character remains fixed for ever. 60 year old men think like a 16 year old. This constancy, this steadfast endurance of character should the very thing that women like about men. A rock on which they can build a lasting relationship. Bizzarely and quite universally, that's exactly what women don't like about men!

The idea is that you get your man and then mould him to your all-powerful will. This is an idea completely at variance with the obvious truth: with men, what you see is what you get, unchangeable as the sun. Darcy is a woman's creation of an ideal type which mercifully for the rest of us, does not exist.

But let me get back to the trousers. Properly, his trousers are called pantalon à pont (bridge trousers?) or fall-front trousers and different styles have been around since the 16th century. Some decades ago when I was a dedicated follower of fashion, these trousers were fairly easy to buy from good sailing shops. They were made by the French company Saint James who still make those striped Breton jumpers with the buttons on the shoulder for people with big heads.

The Saint James trousers were itchy wool but they had some great features. They fitted tight round your arse and were nicely flared in the leg but mostly they were very comfortable indeed. (It's a strange thing about fashion. Comfort seems to have nothing to do with it.)

Have you have ever worn those WWll Bombay Bloomer type of shorts which seemed to be standard army issue? They fit tight

round the waist, sometimes with a waistband thick enough to need two buttons so they keep you looking slim. There's normally a set of adjusters on the side to make sure the waistband is tight.

Below the waist, the shorts flare like a skirt. The cotton fabric is thick enough to hold itself out from your body and the air can flow freely around your legs etc. So much more sensible and comfortable than the modern, tight 3/4 length "shorts".

One excellent feature of the fall front trouser is that they are well designed for having a widdle. You undo a couple of buttons to lower the flap at the front and the trousers stay firmly up because of the waist band. Like overalls or dungarees, the sides of the front flap are open and will also let in the air and keep things nicely cool. Like wearing a short frock.

Remember this is the Women's Issue of Keep Soaring? One odd fact about women in gliding is that there are so few of them. Women account for over 50% of the population at large. There are actually many women hang glider and paraglider pilots but nowhere near the same percentage of women glider pilots. This is strange since these other gliding disciplines are physically harder than flying a sailplane. What are we doing wrong?

See the picture to the right of the pin-up boys of the Lake Keepit Gliding Club looking as it they have just stepped off the catwalk instead of out of a glider after a 6 hour flight. I always thought they were letting us slobs down, but maybe not. Maybe we're letting the side down.

There are well-dressed glider pilots, but according to my wife, most of us dress like slobs. Actually, she didn't say "most", she said "you", but I've looked around the strip.

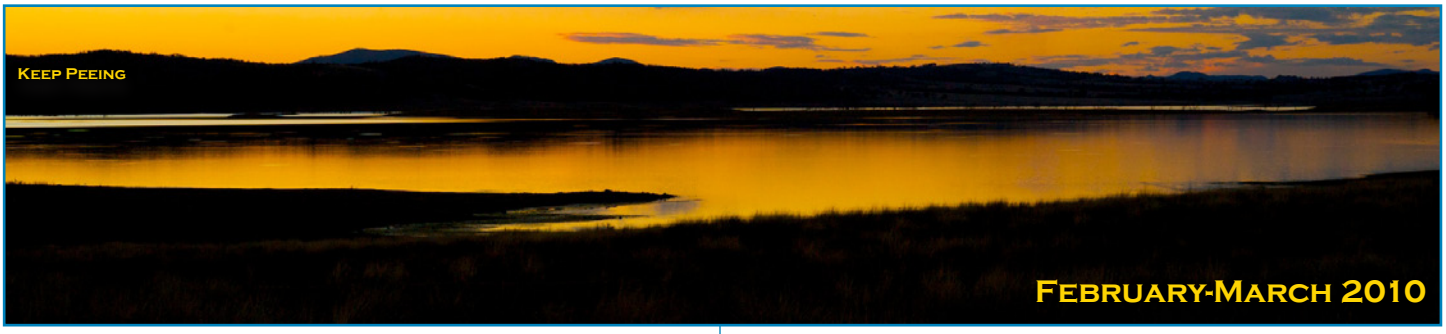
So how would it be different if we slobs dressed better? How about we dressed, at least half way, like Mr. Darcy? Would this attract more women to gliding? It's a thought…

Actually, at the Keep Soaring Think-Tank there's been quite a bit of thought on this vexed question. We've been getting a lot of emails from women in Russia who seem keen to get involved with Australians in some way or other. Perhaps if these Russian brides got into gliding it, could redress this balance? Ideas and suggestions to the editor at the usual address.

Gliding's Pin-up Boys

Two years ago when visiting the gliding club at Sisteron, I noticed a man getting into a two seater. It wasn't his bikini-wearing woman partner that made me go over and have a chat, it was his flying suit. It was a simple, light set of overalls with long zippers running down the arms and legs.

He could open the zips and when sitting in the glider the sleeves and legs of the suit almost fell off his body to keep him cool. When he got higher, zipping the suit up again would keep out the cold.



You can buy something like this flying suit from postfrontal.com and perufly.com… do a search for soaring suit. They even do one in Peru called Omarama. Surprising the Kiwis don't have a trade mark case on that.

These suits are not really suitable for our warm weather flying even though they do have the arm and leg ventilating zippers. They also have a longer than normal zipper down the fly. I have not tried this deep zip and my glider and wedding tackle may be different to yours, but the fact is that any fly is going to get narrower at the base and whether lined with metal teeth or plastic ones, they are none the less teeth and inclined to bite just the same as a short zip!

More to the point, in most cockpits, there's very little room to move. The access to connect up "pilot relief systems" is difficult to say the least. There's the hip strap of the harness, and close either side is a stiff band of parachute harness webbing. Heaven help you if you have a five point harness! Elastic waisted trousers or jeans with zips are quite a struggle to get to a point where you can connect the plumbing, before or after takeoff.

I was listening to one of the senior pilots at the club relating a story about hitting a big air pocket while he was fiddling with his funnel, nappy, plastic bag and water absorbent crystals. The result was drops of widdle all over the inside of the canopy. As Gerhard said… "In flight entertainment."

So what's the best way? Or is there one?

There's a lot of good information about in-flight weeing systems on the net. The internet's great for that sort of trivia. One of the best links is at:

http://aviation.derosaweb.net/relief/ by Eric Greenwell.

There's a lot of detail about how the blokes do it, but not much about the ladies. This appears to be a bit of a secret and perhaps something which really ought to be aired in the sealed section of this women's issue!

The main recommendation one the net is to use self-adhesive MECs or Male External Catheters which can be bought on-line from places such as brightsky.com.au. They are just like a big sticky condom. One commonly available type in Australia is the Conveen Optima. Mostly, the glue on these works fine.

Yes, they are compete agony to get off but aren't men built to endure pain? At $2.80 or thereabouts per flight, a cost to be considered.

No, they cannot be worn twice or even reused to do something useful like ripen a banana. Non self-adhesive versions such as the Urisure are only 80 cents but whether taping them on with micropore would work, I don't know. Yet.

I read some info on the web from some tight-wad South Africans that you could use a rubber washing-up glove and tape it on with micropore tape but I have yet to try this.

My glider is already plumbed with an exit tube which sits under the joystick cover and exits well clear of the undercarriage doors. My plumbing projects about 50mm from the fuselage and have yet to find any traces of widdle on the fuselage or undercarriage. Reportedly, this can rust the undercarriage but this may be worse if your system exits anywhere inside the undercarriage bay.

The consequences of having an exit tube which is a little too long…long enough to be pulled under the wheel when landing, scarcely bear thinking about.

Instead of the exit tube, some people use a urine bag which can be got from the same people who sell the MECs. These strap to your leg and are probably as much of a fiddle as the MECs but they can be rigged before you get in the glider. The bag to get is an overnight bag which costs about $8, holds 1.5 litres and comes with 900mm of tubing and a drain tube and clamp at the base of the bag. This is enough tubing to plumb a complete system to the outside of the glider

One word of caution here. The tubing is nice and flexible… probably it's silicone tubing. However this does mean it can kink, especially where the tubing bends to go down the exit tube. Having the plumbing constricted in any way is very painful indeed! Avoid at all costs.

Another recommendation is to get a T tubing joiner, fit this into the plumbing between the MEC and exit tube and use the tubing coming off the T as a flushing system. You take a mouthful of water and blow it down the tube to flush everything clean and if necessary, blow liquid off the fuselage.

A final refinement is to use a couple of Colder Quick-Connects. These are neat little fluid couplings used for everything from ink jet printers to petrol tanks on motorbikes. They're fairly small and can be got with valves integral to the connector so as soon as the connector is pulled apart, the valve shuts off and not a drop is split.

This is necessary in some cases because there's a bit of space around the end of the MEC which you cannot empty. If you don't have the connectors, as soon as you unplug yourself from the exit tube, there's always going to be a bit of widdle in the plumbing which will rush out while you are getting out of the glider. The Colder Quick-Connects prevent this. They can also be used with the overnight bags.

With the Colder Quick-Connects, you can attach and detach yourself from the relief system in a few seconds with none of the struggle and mess of a push-on system. The female connector (right side on the picture above) is small enough for the most modest of pilots to hide in their trousers or you can wrap the end in a spare sock for the full Mr. Darcy look. In Australia, these can be bought from Victoria Valves and Fittings for about $12 each half. Dishwasher safe!

The plumbing tubing is approximately 6mm or 1/4" OD with a 4mm bore which is fine. Anything smaller such as 4mm OD is going to be painfully small, so get the T pieces, quick-connects and clamps at that size. For the MECs, sizing is a problem. Men's wedding tackle comes in many different shapes and sizes depending on a lot of factors such as cold and fear. The MECs normally come in 5 sizes (21, 25, 30, 35 and 40).

You can get a measuring device from the people who supply the MECs. Since the sizes are actually diameters in millimetres, it's not difficult to make your own gauge. Have a good fright or a cold shower and measure somewhere in the middle of your winkle, not the bit on the end. Don't go too large, especially with the non self-adhesive types or you will get leaks and it won't drain as well. You should not have a problem in getting a couple of samples from the suppliers to try.

Which is where Mr. Darcy's trousers come in. Even the most modest of pilots can put their parachute harness on and unbutton the fall front on these trousers without revealing anything or having your pants fall half-off when getting into the cockpit. Once strapped in, it's then an easy matter to lower the flap and connect up the plumbing or whatever system you are using. And of course you look dangerously fashionable.

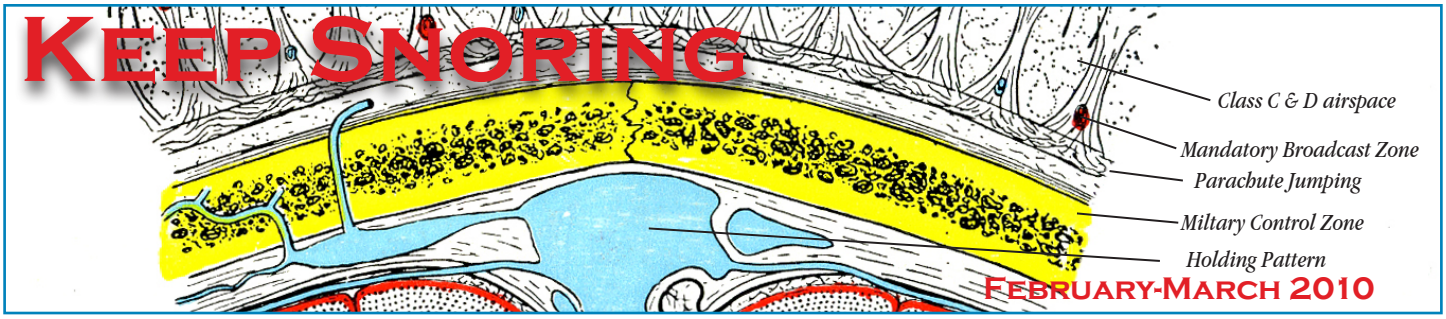
I'm sorry but I have no direct experience of systems suitable for women pilots. Like most things, if you need to know, just ask another woman pilot.

It is best to rehearse with your rig before you put it in your glider and to work out if one system or another is going to suit you best. You don't want to ruin a 1,000 km day. There are two routes. For the more adventurous, you might choose to try something away from home but still at ground-level. There are some interesting suggestions at www.stadiumpal.com or www.biorelief.com or www.whennaturecalls.com.

The alternative, if your partner likes a snooze in front of the TV on a Friday night, is to get a few beers or cups of tea into you, and test the system with your feet up in front of the TV.

He might have a problem getting the horse onto the strip, but my guess is that if we had chaps like him running wings, gliding would be at least 50% more popular.

The Sealed Section ends here (thank goodness)



THE FLYING DOCTOR'S GUIDE TO COMMON MEDICAL DISORDERS.

Patient Presenting Problem: I had landed the Twin Astir short on runway 20 and had to drag it 100m back up to the tar for another passenger flight. I'd just strapped into the back seat when I developed a sudden crushing central chest pain, radiating to my left upper arm with pins and needles in my left hand, as well as shortness of breath. What causes this, and is it anything to be concerned about?

The Flying Doctor says: This is caused by a too-tight harness, a very common problem given that the gliders of yesteryear, especially the cockpit, seat and harness, may not be adequate for the generously proportioned gentleman pilot of today. The cure is to untwist the left shoulder strap, thus relieving the left arm and hand symptoms, and to slacken off the harness generally, while complaining of the petite proportions of the last back-seater to adjust the harness. In the longer term a larger harness may be fitted to the glider to prevent any recurrence.

Presenting problem: I was taking a string fling in my Jantar after lunch one day and the lass driving the winch clearly thought 'full power' meant just that, because I was climbing at max. Vw with the stick buried in my belly and my feet over my head. Suddenly I developed a burning upper abdominal and central chest discomfort, later relieved by antacids which, being an instructor, I always carry with me. What could this be?

The Flying Doctor says: any attempt to address Jenny as 'wench' in a mock-Isle of Wight accent will always result in a full-power winch launch and the application of curry. Prevention is the only cure, I'm afraid, but counselling may help.

Medicare card please. *Ker-ching!*

We are of course unable for ethical reasons to reveal that the real name of the "Flying Doctor" is really Alphonse de Gilles.

People benefitting this column are requested to send a postal order or stamps to the value of 2s 6d in a sealed plain envelope to FDS Retirement and Beer Fund, c/o Lake Keepit Soaring Club at the normal address.

Noting the amount of space which needs to be filled on a page of Keep Soaring the editorial staff contacted the Flying Doctor begging for a few more words and mentioning the Women's Issue. His reply was: "*I plead litero-aviatory exhaustion... All that poetry has exhausted me! For a medical contribution, how about a few of those drawings/ads from the 1950's women's magazines, showing a beaming American housewife…*"

What can one say? And we thought that doctors were meant to be sensitive! Fortunately another LKSC member sent in the following, which is nevertheless attributed to FD.

At least when you see this sort of thing, you realise some progress has been made. Thank you Alphonse!

Dewpoint and Humidity

This series of articles is written for early pilots who might wish to increase their knowledge of the weather and its relevance to gliding operations.

Air contains moisture. The actual amount is usually described as Relative Humidity (RH) or Dew Point (DP).

Human comfort, particularly at higher ambient temperatures, is affected by relative humidity, which is accordingly the term used in public weather reports. RH can be described as the percentage of water vapour in an airmass relative to the total amount of moisture which that airmass could hold at that temperature. RH is temperature dependent, the warmer the air the more moisture it can hold so that as daytime temperatures rise, RH gets lower and conversely if the temperature of an airmass is reduced the RH increases.

The temperature of the human body is normally about 37ºC and must stay at about that level for our bodies to function satisfactorily. We can lose the heat of metabolism which our bodies generate either by conduction when the air temperature is below 37ºC but above that temperature our bodies are taking in heat by conduction from the atmosphere which must be removed additionally to heat created by metabolism.

The only way we can do this is by evaporating moisture from our skin and lungs. The removal of heat by evaporation is called "the latent heat of vaporisation" It takes 1 calorie of heat to rise the temperature of 1cc of water 1ºC but it takes 540 calories of heat to evaporate the same amount of water.

Evaporating water takes a very large amount of heat which is then hidden (latent) in the air. This enormous amount of energy is released when it is condensed out of the atmosphere, such as when cloud forms.

The energy in a large thunderstorm is extremely high, roughly equivalent to a 20 kiloton atomic bomb going off every half hour.

This energy most likely had its origin when moisture from the ocean was evaporated by wind blowing over it some considerable time earlier. The thermal which started it is little more than a trigger for it all to happen.

Upper atmospheric conditions may be ideal for storms to occur but unless thermals reach a height at which a cumulus cloud can form, it is unlikely that storms will develop.

If a person was encased in plastic sheeting or immersed in water which prevented water moisture evaporating and the ambient temperature of the air or the water temperature was over 45deg. then heat would pour into the body and the modest amount removed through evaporation through the lungs and nasal passages would be insufficient to prevent the body heat rising to critical levels and collapse would occur.

This happened in the Victorian bush fires of February 1939. People sought refuge in elevated water tanks. The water temperature in these tanks had risen to a level which although not too hot to get into, was such that the people very quickly collapsed and died.

Dew point (DP) is the term favoured by meteorologists and refers to the actual amount of water vapour in a mass of air. DP does not alter with changes in temperature. The origin of this term relates to the earth cooling due to heat radiating into space during the night (nocturnal radiation) to a lesser temperature than the general airmass around it.

By conduction the air immediately adjacent to the ground acquires the earth temperature. As this air cools, its RH rises and when the air adjacent to the earth or plant falls to the DP temperature, dew forms.

The phenomenon called a "black frost" occurs when the DP is less than zero which can happen under dry inland conditions.

The temperature of plants drops below zero before dew is formed. The moisture in plants freezes before dew forms. The freezing of moisture in a plant destroys its structure and kills it. This happens without dew forming.

DP can be experimentally determined by stirring with a thermometer an aluminium vessel containing water and ice. The temperature of the water drops as the ice melts and is reflected in the temperature of the aluminium container.

When a faint haze of moisture condenses onto the outside of the container then the temperature of the water ice mixture is the DP of the air surrounding the aluminium container.

In the practical world we cover the bulb of a thermometer with a wet fabric sock. The temperature shown on this thermometer is lowered by water evaporating from the sock. The lower the DP the more water evaporates and the lower the temperature on this thermometer. By comparing this temperature with that from a normal thermometer we can calculate the DP.

What has all this to do with gliding and forecasting weather? By knowing the DP at ground level we can calculate cloud base assuming thermals go high enough. The simple formula which mostly works is to subtract DP from temperature, multiply by 400 and this gives us cloud base.

By knowing the DP and temperature of air in the upper atmosphere, which is measured by balloon flights at meteorological stations such at the one at Moree, we can also work out if storms are likely, the possibility of over development and even hail .

We all know that with increasing altitude temperature falls by 3°. per 1000ft. (dry adiabatic lapse rate or DALR) When the temperature in the thermal cools to its DP then it can hold no more moisture and a cloud forms. After a cloud forms and there is no inversion to stop the thermal going higher then condensation releases the heat which was entrained when the water was evaporated.

This extra heat tends to accelerate cloud formation and we have the saturated adiabatic lapse rate (SALR) of approximately 2deg. per 1000ft. This is the reason an active cumulus cloud is said to "suck" and we experience higher rates of climb when near cloud base.

The practical application for glider pilots is that when cumulus clouds are active we should attempt to have an operating height band close to cloud base, even if this means taking slower climbs sometimes and flying conservatively between active clouds.

Whether clouds cease to grow once formed or grow to some thousands of feet in height depends on the temperature of the air and whether there is an inversion that puts a stop to clouds growing beyond a certain height. All air reduces in temperature until it reaches what is called the tropopause at which height the air temperature is stable and clouds can grow no further.

The tropopause varies in height with the season. In the tropics it can be up to 70,000ft, which allows the development of extremely severe storms. Towards the poles the tropopause reduces in altitude and at say, Tasmania, may only be 25,000ft. The actual tropopause can often be seen associated with a cumulonimbus cloud. At the tropopause the cloud can grow no more and levels out leaving a well defined flat top.

More about weather another month.

Harry Medlicott.

Tango Papa and Ian McPhee

The Gliding movement have many story tellers
Macca is surely one of these fella's.
He tells you stories to gladden your heart
Why champs use cambridge to give them their start.

Yesterday was a five hundred you should of been here
The wind from the south that gives you a shear.
The cloud will clear by half past eleven
Pilots at keepit have a bit of heaven.

This job will take but a few minutes to complete
I will be there by Sunday in time to compete.
He tells you of Optus, faxes, and cards.
Of Telstra, computers and the distant stars.

The latest story which is credited to him
Ian saw Tango Papa fly out of a cu nim.
It was beautifully finished, shiny and bright
Twenty six thousand launches, a wonderful sight.

The glide angle now is a hundred to one,
He saw it flying far out in the sun.
Dipping and diving and having a fling,
There seems to be an honour board on its wing.

Listing the pilots that had learnt to soar,
Five thousand customers and may be more.
This gentle giant this Bergfalke lll,
Was a pleasure to know just like McPhee.

Wally Stott

Tango Papa was one of seven aircraft destroyed by an arsonist in Lake Keepit in 1994.

Digital Photography for Glider Pilots.

THE FAT LADY IS STILL SINGING.

Like surfing and sailing, gliding is a sport which encourages great photography. Unlike these other sports, we don't have news agents full of glossy magazines stuffed with colour pictures of gliding, so you may as well get usd to taking your own.

We've got the chance to see one of our colour pictures every four months in Australian Soaring. There are web sites and newsletters like Keep Soaring where pictures can be used. On web sites the pictures are small and low resolution, but that doesn't mean you have to stop taking pictures, and it certainly doesn't mean you don't have to try and take the best pictures you can.

This series of articles is intended to help you take the best pictures you can… think of it as the Basic Gliding Knowledge of photography. Unlike BGK, there will be some poncing around.

Like gliding, photography is something you do in your head as much as anything else. It's fair to say that a good photographer takes a good picture in his or her head. The camera merely records the image. Photographs are a point of view about the world and at least somewhat creative. Therefore a certain degree of poncing is in order.

As a foretaste of this, consider who you are taking pictures for. You? Some magazine? Your family? Your children? Most families have got an old shoe box or two containing a pile of black and white photographs going back a hundred years or more. The one in our family, which has been divided up between dozens of children down through the generations, contains pictures of my parents, their parents and at least two generations before that.

Pictures of my mother in army uniform stationed at a ack-ack gun emplacement near London. Pictures of my grandfather dressed up in a girls frock. Unfortunately most of our kids are not going to have that box of pictures and their grandchildren won't be able to take the piss a century later on.

There's a few reasons for that which we'll get onto later, but that's what you should bear in mind when reading this. The pictures you take may not belong to you but they are your responsibility to keep. Are you looking after this legacy?

One of the often repeated phrases from people who have lost their houses in fires is "we've lost all our memories". And while to some extent digital pictures are easier to store than film, most modern picture storage media are downright fugitive compared with film. It's happened before.

Don't look for much footage of the early Vietnam war era. TV stations found videotape was much cheaper to shoot than film, so they rapidly went over to that medium for TV news. The trouble was that the videotape of that era (1970-1990) fell apart in a few years. The magnetic stuff literally fell off the backing making the tapes unplayable… if you can find a player.

In the 40 odd years since that war, there have been almost as many different video formats and each one has been largely incompatible with the one before. In some cases there is only one surviving tape player of a particular format in the country. Most amateur videotape whether VHS or MiniDVD has a life expectancy of 10 years or thereabouts when stored "properly". And I guess you store yours about as well as I do. So lets call that 5 years for most of us.

The vast majority of moving picture material is on film. 35mm film has been used since the earliest silent films and today you could take piece of that film and play it in almost any town from Tierra del Fuego to Alasca. Yes there might be scratches, dust and even tears in the film and the colours might be faded, but you could still view it. Film is analogue. And in most cases the technology is silver based and stable for a long long time.

You cannot make that promise about any digital format. One thing to be understood that the Box Brownie that your great-grandparents used has far higher resolution than the best digital cameras of today. The compact digital camera you are probably using has a lower resolution than granny's old Instamatic.

A piece of film is a very stable and high density recording medium compared with hard drives memory cards and optical discs. On most digital cameras, the pictures are stored in a compressed format, normally JPEG (.jpg). Without going into excessive detail here, almost all JPEG compression degrades image quality.

The normal alternative is RAW. When picture data is saved in RAW format, the camera's electronics do a minimum of processing of the file before storing it on a card. The RAW images are processed, graded, colour balanced etc. by the photographer on a computer.

You probably need software on your computer to read a RAW file and since with every camera released, the manufacturer changes the RAW format slightly, this can be a problem and may be a big problem in the future if a particular RAW format is no longer supported.

There is more image data in a RAW file, and that means the files are larger, slower to save and take up more space on the card. And if you want to distribute these pictures to less dedicated people, they have to be saved as JPEG files. I've shot a few weddings where the saved JPEGs took up more than 2 DVDs. The RAW files on my computer probably took up more than 16Gigs of disc space.

Modern movie and still cameras require staggering amounts of disc space. Terrabytes of it and it gets more every time you take a picture. Backup, archiving, grandfathering of files rapidly becomes a nightmare. I used to store the first digital pictures I took on floppy discs. Now, I doubt if I can find a computer which has a floppy disc player and in any case I know the file format of those early pictures is not readable by current computers.

CDs and DVDs have a lifespan of about 10 years. If you can find a player for them in 10 years time. Hard drives have a lifespan which is probably a lot shorter than this, and in any case the interface technology keeps changing. Anyone for SCSI?

I was having a discussion with a friend about this last year and he said that the experts were now recommending that for archival purposes, important digital images were stored on… film.

English photographer Bert Hardy took this shot of two girls on the Blackpool prom on a £5 Box Brownie to prove you don't need expensive equipment to take a good picture. Maybe that's no longer true.

Keep Snapping

February-March 2010

Photography has been around for about 150 years and in the last 10 it's changed more than at any other time. Once you probably had to know something about film speed, aperture, depth of field, focal length and shutter speed to take a good shot. In fact, nothing has changed there. You still do need to know about these things (though you could in the old days take a cracker of a shot with a box brownie which cost less than a slab of beer if you knew what you were doing).

What's changed is the cameras themselves. They've almost all gone digital and before we get to look at how to take a picture, it's a good idea to look at what's happened to cameras. A few years ago, pre-digital, if you were interested in photography, you bought a camera for one reason… the lenses it would carry.

The Nikon F2A. The high water mark in mechanical cameras. 30 years old and worth more today than when it was new.

A film camera body was just something to space the camera lens out from the film. With the same lens, a cheap film camera body would take the same picture as an expensive one. Right now, with digital cameras, it's the body which gets all the attention and nowhere near as much attention is paid to the lens. And a good camera body will cost a small fortune.

Why is this? There are two important bits inside digital camera bodies. The sensor and the electronics. The sensor is what records the image. The electronics are what processes the image received from the sensor and saves it in some form of memory. Mostly it is the sensors we hear about.

A frame of 35mm film is about the equivalent of a 25 megapixel digital camera. If you use good film and a professional film scanner, you can get results from film which exceed this by some margin so if we are counting pixels, then digital has a way to go before it is better than film. *The fat lady's still singing!*

The Nikon 3 with a 30 year old lens. A $7,000 house brick? A great camera? Or both?

Most digital cameras are now around 12 megapixels but not all pixels are created equal. Sensors suffer from all sorts of limitations, the most noticeable ones being noise and dynamic range. If the sensor is small and the individual photoreceptors crowded together, these two nasties are generally going to be a lot worse.

Without going into this too far, a good rule of thumb is, the smaller the sensor and the camera it's in, the cheaper the picture will look. Bigger sensors mean better images. The full-frame size 35mm sensors in modern DSLRs are in almost all cases going to be very noticeably better than the smaller size sensors.

Bigger sensors cost more money. The electronics inside the camera body have to do a lot of work. They capture the image off the sensor and process it to reduce noise, adjust colour balance and sharpness, often several times per second. If the camera can record more than one image per second, the electronics have to buffer all these images before processing and writing the data to a storage card.

Fast electronics are an absolute essential for a digital camera and they are expensive. The camera should not only be ready to shoot almost instantaneously after turning it on, it should also record the image as soon as the shutter button is pressed. It is simply not possible to get good results with a camera with any appreciable delay in the shutter action.

What does this boil down to?

You get exactly what you pay for. In almost all cases, a $5,000 camera will be 10 times better than a $500 camera. And it does not take a professional to see the difference. You can spend a lot more than that on a good camera body and a second hand film camera costing a few hundred dollars will out-perform the lot of them.

Big digital cameras are almost always better than small ones. A Digital SLR will almost always be better than a compact.

An exception to this may be the Micro four thirds cameras which are not reflex cameras and because they have no flipping mirror can fit a large sensor in a small body.

The Canon G10. Last year's top compact. $500 worth of proof that you need to spend $5,000 to get a good camera.

The Rollei B35. Last centuries top compact. No batteries, 1/3 the weight of the G10, 10 times fewer pages in the manual, and 10 times the picture quality. $250 on ebay.

Small digital cameras like this may be used to discharge batteries. They are carried by teenagers looking to fill their Facebook page but not for taking photographs.

Read the manual! A camera like the little Rollei or even the top end Nikon F2A has a manual barely 30 pages long. A compact digital camera like the Canon G10 has a manual over 300 pages long in very small print and almost incomprehensibly dense Engrish. The Nikon D3 manual is over 400 pages long.

You are going to do your money. Seldom in the history of the world has anything depreciated in value faster than a digital camera. Today's $5,000 camera will be close to worthless in 4 years. In any case, if you want to take great pictures, you may want to spend more of this on the body alone. So sell your camera as soon as possible after you buy it.

Both the Rollei and the Nikon film cameras shown here are worth more now than they were 10 years ago. As a glider pilot and photographer, does this throw any light on what you need in the way of equipment?

I'll get off the high horse of film and just concentrate on digital now.

The first thing is that you will almost certainly use two cameras. The big camera which takes the good pictures is not suitable for taking up in a single seater.

Apart from the size, the weight of the big camera is enough to cause serious problems in any turbulence. You are not always going to be able to get your eye to the viewfinder of an SLR and the LCD screens on the backs of these cameras are not bright enough for use in sunlight.

Most compact cameras suitable for use in-flight are rubbish. There's not much nice that can be said about them. They are slow, noisy, have poor dynamic range and normally an incomprehensible menu system. With many, the camera back is covered with buttons and every time you pick up the camera, you touch some of them and change the settings.

I have not tried a Micro Four Thirds camera. They do offer a reasonable compromise between camera size and sensor size but at a price. Most appear to cost upwards of $1,500.

To take pictures in-flight, you will generally want a fairly wide angle lens on the camera (24 - 28mm equivalent on a 35mm camera). Most compact cameras do not have a lens wide enough to fit in more than part of the inside of the cockpit or the pilot.

Ideally you want a rubber lens hood. Often, pictures taken from inside a glider's cockpit are messed up by reflections of the canopy. If you have a good rubber lens hood, you can put the camera up against the perspex without scratching it.

Keep Snapping

For shooting cloudscapes and landscapes outside the cockpit, motion, haze and UV limit the quality of images from anything other than a wide lens. Micro Four Thirds cameras have interchangeable lenses and there are some good wide angle lenses in the range.

The flip-up mirror on an SLR means that wide angle lenses have to be of retro-focus design. This is a limitation compared with a rangefinder camera such as a Leica M series, or Micro Four Thirds camera where non retro-focus wide angle lenses can be easily designed to be small, sharp and good contrast.

Personally, I have little time for zoom lenses. In any case, in a single seat glider you have no time for longer lenses where it's necessary to look through a viewfinder.

This is shot with the equivalent of a 28mm lens… probably not wide enough.

According to Frank Capra, "If your picture isn't good enough, you're not close enough." but there's a limit to how close you can get to another glider in a single seater and have time for photography. In a two seater you might have more room to change lenses but watch that the weight doesn't affect the CofG!

On the ground, there is really no substitute for a digital SLR and a few lenses.

I'm not going to talk to much about makes of cameras but I can make a single comment here. The two most noticeable makes of DSLR are Canon and Nikon. I have always owned Nikon cameras. Almost all Nikkor lenses made for Nikon SLRs since 1965 can be used in some way on modern DLSRs. The same thing cannot be said for Canon who have changed their lens mount design many times. This may not be of any importance to you.

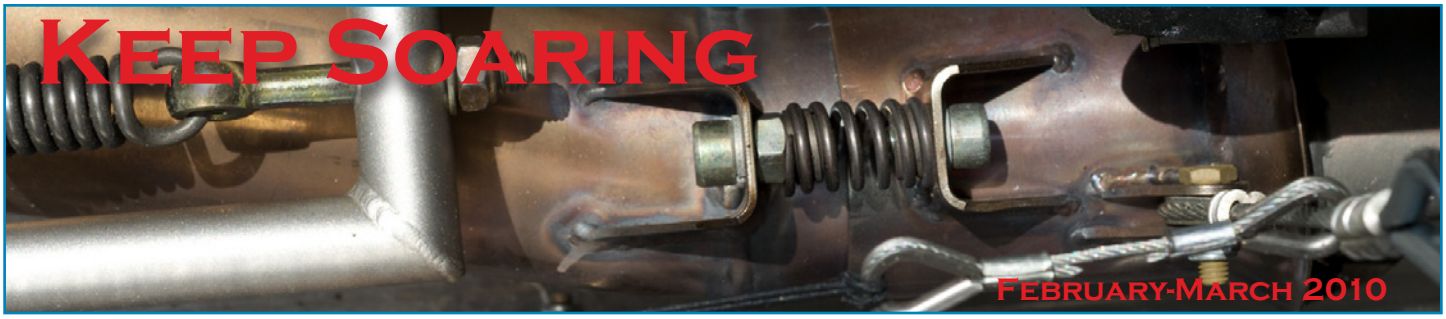
Typically, you will need a wide angle lens (24 - 35mm) for pictures of people on the ground, a medium telephoto lens for close shots (85 - 135mm), and something longer for aerial shots (300mm +). Long lenses can be a bit of a handful when trying to shoot a fast-moving subject side on to the camera like a glider on finals. With anything below 200mm you are best off to hand-hold the camera, but with a lens longer than that, you need a tripod. Most still camera tripods are not able to pan quickly so your window of opportunity for a great picture is small.

An uncropped picture shot with a fixed 105mm lens. Less than 2 seconds later, the glider was well past the camera.

This was shot with a 400mm lens. With a lens this long, the window of opportunity for a great shot is very short.

As with gliding, photography is a bit of an equipment orientated pastime but unlike with gliders, second hand digital cameras are not great buys. Quite apart from the picture quality, most low cost DSLR camera shutters have a life of less than 70,000 exposures and that can come up surprisingly soon.

Next, we'll have a look at image quality and how to improve pictures on your computer.



MAINTENANCE MATTERS

For this issue, just a few bits and pieces:

MAINTENANCE WEEK 2010

Now that we are into 2010, it's time to think about our maintenance week; even if it is only to make a pencil diary note (for those who still use such things). I am proposing the week commencing Monday 23rd of August . This is the week most of the Form 2s done last year expire. Please let me know if you are aware of any reason this week is unsuitable.

Last year we had a very successful week with most of our objectives ticked off. This year I plan to add in Form 2s for the Jantar and Duo Discus, so there will be seven Club gliders involved overall. Doing the Jantar and Duo at this time will align all our Form 2s and avoid having to do these in peak season. Whether we do or not will depend very much on the support we get for the week. If it is similar to last year, we should have no problems. As well as the Club gliders, I would like to see as many private gliders as possible inspected so we are all ready to go for the start of the next season.

AIRWORTHINESS COURSES

Last year, there were no airworthiness courses held in NSW. I was advised then that a course was being planned for Bathurst or Narromine in April or May this year, but am yet to receive a response to enquiries as to whether this is going to happen.

Meanwhile Gliding Queensland is holding airworthiness courses at Warwick from 17th to 24th July and are happy to accept interstate participants. Courses offered are Component Replacement, Form 2 Inspector, and Minor FRP Repairs. So far, two LKSC members have indicated they will be attending.

TE SUPPLY TESTING

Following the notes on TE supply on the last issue, I did some research to find out how best to test the TE supply. I found the information contained on Mike Borgelt's website the most helpful. The full information is contained at http://www.borgeltinstruments.com/Leaks.pdf . I would recommend that you print off the five or so pages and keep them for reference.

The notes stress that small changes in TE pressure make significant differences to vario performance so it is important to try to eliminate any changes not originating at the probe.

Key points are:

- Tubing should be as rigid as possible (ie not soft) and should be secured so it does not move under G loadings. Any filter housings (eg for motorcycle-type paper filters) should be rigid.

- There must not be any leaks between the probe and the instrument. Mike recommends use of elastic donuts (which he sells) over the tube to instrument connections. A simple leak check method is included in the notes.

- If splitting the TE supply for more than one instrument, split as close to the TE probe as possible (eg at the rear of the cockpit). Do not do split the supply using T pieces behind the instrument panel.

- If using restrictors or gust filters, install these after the supply has been split, not before.

As TE supply is not really an airworthiness issue, there is little information in Basic Sailplane Engineering. However, for effective vario performance, it is an important issues and I would recommend that the supply be at least leak-checked during the annual inspection.

POWERED GLIDERS

Now that the Club is responsible for the airworthiness administration of a powered glider (Duo Discus) I have had to do a bit of reading. I was surprised to see that the only guidance available is half a page in MOSP 3 (para 7.11) and an AN (AN 59). Personally I see these as providing inadequate guidance and am currently in communication with the GFA airworthiness department seeking clarification of a number of issues. Once I am happy with the advice received, I will provide an update via this column.

In the meantime, two points:

- Anyone conducting a DI on a powered glider should have a log book entry recording their authorisation to do so.

- If conducting a DI, make sure it is done strictly in accordance with the flight manual or maintenance manual (maybe a case here for a printed checklist).

John Trezise

February, 2010

Winning with Woitjec!

Keep Soaring is honoured to have the legendary Polish soaring champion Woitjec Bziktk writing for the newsletter. Countless are the numbers of members who have been imploring Woitjec for clues and tips to his enduring success in the air and on the ground.

GS of Beverly asks: Woitjec, People keep flying away from me between thermals. I was thinking of getting some winglets on my glider. Do you think this will help?

Woitjec: Ha! If people are getting away from you, czech in the mirror again! Most gliders are the same, but most pilots are different.

The one who leaves highest and the one who leaves soonest will win over you because you are waiting for them. May them wait for you.

But! Winglets make small men seem big and big winglets make big gliders seem small. Me, I like to fly with the biggest winglets.

RS of Gunnedah asks: I'm afraid to drink too much in the air. Normally it try to drink the night before and then not too much when I am flying. Is this OK?

Woitjec: A man is not a camel! Wretched is the body which is dependent on a body and wretched is the spirit that is dependent on these two.

Drink while you can, or be thirsty,

Wow! Thank's Woitjec! Can't wait until next month's tips!

It is to be remembered when reading Woitject, that he does his own translations and refuses to accept hints from Keep Soaring editorial staff..

INSPECT A GADGET

It doesn't matter if you are a form 2 inspector or not, most glider pilots like to get their hands on a good tool, especially if it is one of the ones Jenny has hidden away so they don't get lost. There are some tools which lend themselves to working on gliders. For example, a precision Leica hammer has it all over the Bunnings made in Chain variety when I comes to whacking something on a sailplane.

One thing is almost a given on sailplanes. And that is that most of your tools are too big to fit in the available space… which is where these two sets of tools come in very handy. The first set is so small that it's like Barbies socket set. Nevertheless it's a great piece of kit and very useful for working in confined spaces. Made by Bahco in Sweden, it's good quality too.

The set of spanners is made by Facom in Europe. You can get other types of stubby ratchet spanners from other manufacturers including Snap-on and Kingchrome, but what sets this lot apart from the rest (apart from the quality) is the neat plastic holder.

The Kingchrome tools come in a plastic clip designed to make sure nobody knocks them off in the ironmongers. The Facom set come in a clip which can help you make sure that you take every spanner out of a glider when you've finished working on it.

In the real world of working on aeroplanes, this is called Tool Control and it is a huge subject. Most socket sets intended for aviation use have a two contrasting foam layers in the tool case so every time you remove a socket, you've got a fluror yellow hole reminding you to put the thing back before finishing work.

We all know SeeYou, the gliding software from Naviter. This is Oudie, the new stand-alone navigation device from Naviter which they hope to have ready for sale for the Northern hemisphere gliding season (first quarter 2101). It certainly looks the part and with a built-in GPS should have it all over PDAs which are beginning to look like an end-of life product.

Here are the features of the Oudie:

. Landscape and Portrait screen orientations
. Integrated GPS for stand-alone operation
. Serial communication cable (doubles up as charger)
. Bluetooth serial communication
. Preinstalled SeeYou Mobile
. Preinstalled worldwide Vector maps
. Large 5" screen (same brightness as all other PNA devices)

It's perhaps the last one which is the problem. To get the device to market, a small company like Naviter has a limited range of choices. They have opted for a high resolution 480 x 272 screen, identical to the ones used in most PDAs. That is, as difficult to see in bright sunlight. The main reasons are economy and battery life.

Devices such as the LX 8000 are smaller and brighter but pull a lot of power and actually get very hot in flight… hotter than the plastic case of the Oudie would want to get.

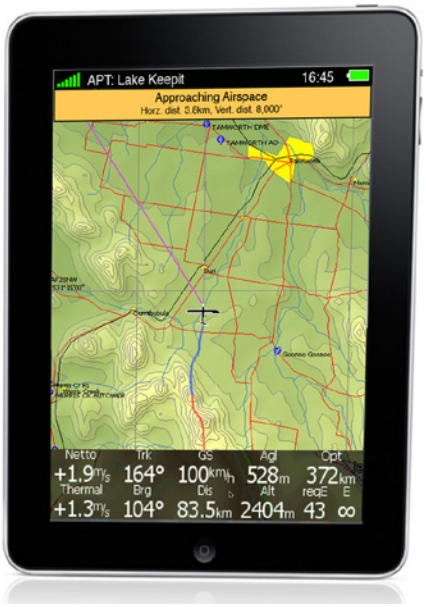
There's no doubt that Naviter have the credentials to build a device like this, but one cannot help but wonder if they have missed the boat by a little and are perhaps testing the water. The Oudie was released in America at the SSA converence at the end of January… just a few days after Apple announced the iPad.

I'm not saying that Naviter would have got in wrong but right now, in you can date almost all hand-held devices as being pre or post things like the iPhone. If companies like Ericcson, Nokia and Blackberry had got it right, Apple would not have swept the board with the iPhone and had everyone scrambling to get out me-too devices.

After the iPhone, shares in companies like Garmin and Tomtom have started to sag. Sure the performance of the iPhone navigation aps appears to be nothing too wonderful (oddly with Tomtom's being the most criticised), but the writing is on the wall, writ in large letters.

The iPhone HUD. Here today.

Right now, you can get iPhone apps with features like compass, altimeter, accelerometer, turn and bank, ASI… the full cockpit in fact. The speed of the compass and the way it rotates maps on (my son's 3GS) iphone is amazing. Smooth, fast and responsive. He showed my an app which used the compass. You aimed the phone at the horizon and panned it sideways. As you panned, all sorts of "points of interest" including restaurants, airstrips, outlanding paddocks popped up all over the screen. And the iPad is faster and runs all the iPhone apps.



The iPhone Nav. Here tomorrow?

At the time of the launch of the iPad, the rumours were that there would be two of them. One at 300mm diagonal and another at 180mm. Even thought the iPad is slim, 300 is a little large for a cockpit. 180 would fit in just fine. With a battery life of 10 hours (compared with the Oudie's 3.5) it remains to be seen how bright the screen will be in sunlight. I can remember not being able to read the weensy dim screen on my Nokia, but can't remember having too much trouble with an iPhone. The iPad screen uses a technology called In-Plane Switching which gives the device a 178° viewing angle, so in theory at least, you can aim the screen downwards all you like and still be able to read the display.

The technology stuffed inside the iPad is formidable.

3G UMTS/HSDPA, Wifi, Digital compass, Bluetooth, Mono Audio, ambient light sensor, VoiceOver Screen reader, accelerometer.

Look at the last three. If your Nav system has an ambient light sensor, it only uses the amount of juice required to make the screen readable. So when you are doing that long run under cloud streets, the device reduces power to suit. Most large or bright Nav units like the LX8000 have this buit in but most PDAs don't.

Companies like Airbus have found that warning lights are not enough and having the instruments give a spoken alert to problems is much better anyone who has used a car GPS can confirm the usefulness of this. When your Nav system speaks "Traffic at 11 o'clock" or "Approaching airspace 5 km" you are likely to pay attention. Accelerometer…

It's a huge risk predicting the future, especially where this type of consumer technology is concerned, and I don't think I want to read a book on a computer (what if it dropped on the dunny floor?) but who knows until you have tried it? People apparently watch movies on iPods! No doubt this is the way it will go.

The built-in GPS on the iPhone and iPad has limitations, but external GPS antennae are available. Given all the rest of the stuff in these devices, the huge user base and the Software Developers Kits available, if you were thinking of developing navigation software, you would be barmy not to have a very close look at them.

SEEING WHICH WAY THE WIND BLOWS

Two billionaires whose names I will not dignify here, are currently pissing up against a Spanish wall, the best part of 200 million dollars in the current so-called "Americas Cup" while people are still being dragged from the rubble in Haiti.

Three races, or possibly two, between giant multi-hulls which are so exciting that almost every sponsor other than the main two have walked away. The ABC news coverage was less than 30 seconds on the first race.

There doesn't seem to be a budget on the technology and some of the ideas are really off the wall as they often tend to be when money is not an object. One thing which can be make or break in yacht racing, is guessing which side of the course might have the best wind.

AC teams have never left anything to chance. In the last series in Fremantle, buoys and mobile phones were used to (illegally) message the conditions on course to the tacticians on the boats.

Right now, the technology has moved on to two new areas. One is the use of remote controlled drones with built-in wind sensors. These fly around the course mapping the wind conditions.

The notorious Antoine Bonnaveau, who has already done porridge in 2009 for his "reconnaissance" work for one AC team, hones his R/C skills in the Blue Mountains with an open-mouthed Keep Soaring correspondent.

Another slightly more retro technique is the use of human-piloted trikes. One team is using trikes from Airborne in Newcastle which are fitted with floats and have been up for more than 5 hours on some days, looking for wind. You may ask "why don't they use 'real' planes?" Well apparently the Espanish don't recognise trikes as being *real* aircraft so there's actually no legislation to prevent or allow this type of flying over the water!

The legality of these processes is dubious, especially since the Deed of Gift which controls the AC was written down over 100 years ago!

Another development is laser wind sensors like the Vindicator. These devices are used to sense the wind speed and direction in front of wind turbines so the blades can anticipate gust direction and strength. They can sense horizontal and vertical gust strength at distances up to a kilometre away.

Catch the Wind, the company who developed the Vindicator, have also made a smaller "consumer" version of the device, specifically for yachties. It's called the Racer's Edge LWS. Their web site gushes:

"The Racer's Edge unit, similar in appearance to a (very!) large pair of binoculars, weighs only 9 kg and includes both a (large) neck strap and tripod mounting holes making it easy to use in various applications. Designed for portability and flexibility, Racer's Edge LWS is a vital tool for all yachting enthusiasts looking to find the best wind first.

This fiber-optic laser device is ruggedly designed to handle the challenges of a maritime environment, even operating in degraded visual conditions. The device has no moving parts, is water-resistant and functions in a wide range of temperatures. It also utilizes wireless data transmission to remotely link to an onboard computer and download wind data instantly."

At 9 kgs, you would not want the necks strap on too tight if you went over the side! Even the chase boat wouldn't get too you soon enough.

It doesn't take much thought to realise that this type of technology would also work on sailplanes and if a 1 km range wasn't going to get you over the horizon, it would certainly give you the edge in optimising your thermal searching and centering.

A short word about lasers… and don't take this as gospel and aim one at your ey. There are several types of lasers around including CO_2, Helium Neon (HeNe) Gallium Arsenide and YAG, which operate continuously or with a pulsed output. Some are dangerous and others are not do dangerous.

Some invisible lasers, such as CO_2, are not nearly as dangerous as visible light lasers. The main reason for this is that the wavelength of the light emitted by this type of laser is easily absorbed by water, acrylic and polycarbonate.

The big danger of the visible wavelength lasers which are occasionally aimed at airline pilots is precisely because they are visible. The visible, coherent and directional nature of the beam means that it can be easily focussed by your eye and burn your retina while a similar power CO_2 laser output would be absorbed by the water on the surface of your eye.

Laser types such as YAG are seriously nasty and can't be operated unless they are completely enclosed. The best thing is not to look into a laser beam, but not all lasers are something to be feared.

What's not stated on the web site is that the Racer's Edge LWS costs around $200,000. You may find that getting a new glider will give you a similar advantage and a lot more fun!

R/C FUN FOR THE MAN IN UNIFORM?

No, it's the Caspar UAV developed by Israeli Weapons. Available in a mini-backpack kit containing two aircraft "The Casper 250 backpack mini UAV system provides reliable real time intelligence gathering in high quality using the new Lev 2 light weight stabilized payload."

"The Casper 250 is a cost effective solution for Homeland security - low intensity conflict Day or Night operations. It can be deployed anywhere in a very short time, the system operation is simple and the Human Machine Interface (HMI) is user-friendly."

The Caspar is electric powered and has a duration of about 1.5 hours. The back-pack kit contains two gliders with neatly telescoping fuselages and quick-fit wings, day, night and infra-red cameras and all the necessary control gear.

And while the Caspar is radio controlled, it is not actually controlled by a human. The pilot merely launches and takes over during the landing phase. Just like most transport pilots then…

The operator draws the flight path of the aircraft on a computer map, launches by hand or catapult, and then the computer flies the aircraft around the track. The on-board camera is mounted in a swivel mechanism which lets the operator have a good view downwards and to the sides while working out who to kill next.

You can buy these things from the web-shop at /www.israeli-weapons.com. They looking for dealers.

Keep Soaring is not allowed to get involved with the politics of this sort of stuff, but two aspects make my blood run cold.

The first is that a semi-trained operator (sometimes in another country altogether) can drag their mouse around a track and one of these aircraft will blindly follow without any idea of who or what else is using the airspace.

And while you may say, "Oh, but this is only used in combat zones," that's only a hope. In fact they can be used anywhere by anyone for surveillance. At the last count, there were over 44 countries, most of whom claim some vestige of civilisation, who are using remote controlled aircraft to spy on their citizens.

I spent some time sitting in a boat cockpit, cruising offshore with my wife when we were young. It gets boring after a while and you can't leave the cockpit for too long… you need to do a good lookout every 10 minutes or so. But the bored mind turns to the prospect of more interesting things to do.

I failed to convince her that any satellites up above would be able to see into the cockpit of our boat, and anyway, it probably wasn't something they hadn't seen already. Technology has moved on.

This helicopter drone is being used in Liverpool in the UK. Planned targets will be everything from "youths riding motorbikes in a park to clashes between rival football fans and armed sieges where it might be unsafe for officers to come too close".

What the rozzers will do with this airborne information remains to be seen, though they claim to have nabbed the first two teenagers in early February.

Of course, being a top cop or soldier doesn't mean you have the skills to pilot a spy plane. They discovered this in America where now civilian contractors run the spy planes.

Because most of the pilots are based somewhere in the US and the planes are based outside the US and the main purpose of the operations is to kill people suspected of terrorist activities, it doesn't matter if the pimply teenager at the controls has any concept of the rules of war or even of the law itself.

The result of this is that their hit rate has been estimated as high as 50:1. That is, 50 civilians killed for every targeted terrorist. Even the most optimistic estimate puts the figure at something like 10:1.

There were times when barking dogs woke me early on a Sunday morning… OK it was a lot of years ago and no doubt I had a hang-over at the time… and I gave some thought to the design of a noise-seeking missile.

I did wonder about collateral damage and what the consequences might be if one were to "take out" a crying baby or maybe just a kid having fun and shelved the plans. It looks like those type of concerns don't matter much any more.

OK Sunshine. You're nicked!

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Keep Soaring

February-March 2010

Coming Events 2010

21-27th February	Keepit Regatta	Tim Carr
January 2010	Errol doing the gardening around the club	
Easter 2010	April 2nd to April 5th	
Nov 28th - Dec 2nd	Keepit Safari proposed dates	Ian Barraclough
	Winch Weekends	
	Cross Country Weekends	

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