

# WARM AIR 7 Dec 13

## Aviation Sports Club Gliding Newsletter

<b>THIS WEEKEND:</b>	Club Cellphone 021 745 433	<a href="http://www.ascgliding.org">www.ascgliding.org</a>
Saturday.	Instructing: Andy McKay	Bank Acct 38-9014-0625483-000
	Towing: Peter Thorpe/Jaime Wagner	
	Duty Pilot: Jeff Rosenfeldt	
Sunday.	Instructing: Rex Carswell	
	Towing: Craig Rook	
	Duty Pilot: Rudolph Struyck	

### MEMBERS NEWS

#### SATURDAY *Towie Graham Lake starts us off*

I was not really meant to be on but real towie, Derry Belcher, was apparently going to be late and could I sub for him until lunchtimeish. No problem, especially as he was completing annuals on a glider. Not the Libelle but some mob up North.

Several things stood out when I arrived. The 30 knot windsock, the clouds scooting by and most folks showing little inclination to do any actual gliding. Only the towplane and the twin had emerged from the hangar. Ah well, best preflight the towplane and throw in some fuel. I had gotten the filler cap unlocked before I twigged I had extracted them from the power switch. Back in for a quick check and yes some muppet had left the power on all week and the battery was flat. Who flew it last and did not take the keys out at the end of the day? Oh Crap.....me. Shove her back near the hangar and on with the battery charger.

The wind and sureity of turbulence was having a discouraging effect on our intrepid club members and we soon spread that discouragement to a trial flighter. "Don't come out mate as it is not nice." By the time Derry arrived we had almost talked ourselves into putting everything away and going home to hope for a better day on Sunday. Half an hour later and we were out the gate and gone.

#### SUNDAY

After the windy day that was Saturday, Sunday dawned looking much better. Ray had offered to collect the keys and open up, and sure enough when I got there soon after 9 things were already well underway. There were a couple of Youth Glide members, Jack and Jeff, as well as Jonathan, and before long we had several people, and the fleet was out and DI'd, ready to go.

I did notice on arriving that RDW was parked out on the grass minus engine cowlings, so wondered if there was going to be a problem. However, it turned out to just be the result of an overnight battery charge, and so we cleared with Base Ops and set up on 26. The sky did not look particularly inviting, although RASP was promising an improvement for mid afternoon.

First away, at 1059, was Jack Foot, a new YG member who was keen to practice take off and landing, so wanted to go to 1000'. There was a significant cross wind, so he found out all about the challenges of aero-tow. Having managed the latter part of the tow well, and also the release, I was just thinking about how best to brief for his first circuit when he hooked into a thermal. Despite not being the easiest, I was pleasantly surprised to watch him work his way up from there to 2500'. Sadly, once there the lift faded and we were unable to find any more, so were joining not long afterwards. With a little help Jack managed a reasonable circuit and was well into finals before handing back control for me to land. Overall a good 20 min flight. The other YG member to fly was Jeff, another low hours pilot who demonstrated some good skills, flying much of the launch and circuit, and gaining confidence in his thermalling in some tricky conditions.

During the day the conditions gradually improved, with all three gliders in the air for much of the day. As well as a few good flights in MP and VF, the twin was kept busy, with Ian and Roy working their way up to the quarry and back to test out a new 'team' Calibri, Jonathan and David Grey going up for a good flight, and very enthusiastic trial flyer who had been looking forward to flying a glider for a long time and decided it was even better than he had imagined. Around 4 I went up with a colleague for what looked like it would be the last flight of the day. Ray was already up in MP and everyone else had flown. However the conditions improved yet further. We watched from the air as a Boeing arrived, and while the tower gradually persuaded me to move further west from the prison, largely as a helicopter was also arriving under test IFR conditions, they were none the less very good to work with, as always. We got a good view of the Boeing, and soon after it was down, VF launched. We had been up for a while, so I returned, only to find Ian and a colleague waiting to take off. For the next long time, during which we largely packed away and got ready to break out a few lemonades, the fleet kept flying, and only came down when an obliging cloud cover rolled in and blocked off much of the lift. Everyone returned with big smiles on their faces, with at least one commenting that "it was really quite hard to come down".

One word of caution. With all that lift about, there was also a fair bit of sink, much of which seemed to concentrate around the circuit. At least one glider got very low on approach and ended up turning in late and low, to the concern of the few stood on the ground watching. A couple more had shallow final approaches. It is important that pilots be aware of the potential for sink, even on "good lift" days, and plan to return to the field with good height, and also to turn in early if caught out low on downwind.

Overall, a good days flying with a total of 13 flights, and at least one prospective new club member. The longest flight of the day was well over 2 hours, with several around 90 mins or more. Jonathan also demonstrated some fine spinning in VF. The last flight of the day landed at around 6.15 and those that were still left managed a beer or two, with lots of stories being swapped, before we finally packed up shop around 1900.

## **XMAS CAMP**

We intend to go to Matamata around 28 Dec and stay for about a week. If you are staying over this is a good time to book accommodation as there. This camp is a multi-club event that has confirmed attendance from Auckland Gliding Club, Tauranga Gliding Club, Piako Gliding Club and even pilots from Taupo and Taranaki. In addition as the camp is to be run concurrent with the multi-class Nationals New Zealand's top pilots from both the north and south island will also be there with the latest in gliding technology (Antares, JS-1 jet, ASG29, etc). A typical day will be along the lines of club flying from after breakfast to around midday at which point club flying will stop while the competition grid is launched (typically 50 minutes). After this club flying can continue. Novice tasks of around 50km will be set and scored on a day entry basis so that novice cross country pilots will be able to have a crack at an easy task over friendly terrain. There is normally no problem spot entering one or two days of the contest, especially the novice class.

Club two seaters and club singles will be encouraged to have a go. There will be opportunities to attend daily weather briefings, task briefings, fly in gliders like the duo discuss with expert cross country pilots, assist with the launch of a competition grid, retrieves, fly novice tasks, spin training in a two seat glider that actually spins, BBQ's and evenings at the bar with pilots from all over NZ. This is an opportunity that in my view our club would be silly to let pass by. It is not expected that everyone will be there the whole time, in fact it is expected that due to Xmas and New Years commitments most people will not turn up until after New Years. With the camp running until January 10th though there is plenty of time to pick a few days and come and join in.

## **TAILPIECE**

Some time ago Arthur Gatland wrote a very good series of articles on threat and Error management. With his kind permission part one is reproduced in this issue with parts two and three to come in later issues.

## **ROSTER AT THE END**

## GLIDING – THREAT AND ERROR MANAGEMENT – *or How to Reduce Mistakes and FLY SAFELY*

Part 1 of a 3-part series

Arthur Gatland

*Arthur Gatland started flying in 1963 at age 13 and has accumulated 17,000 flying hours including 2,500 hours in RAF fighters such as Harriers, Hunters, Hawks. He is currently a Boeing 777 Captain and instructor, and for ten years was Manager of Training and Flight Standards for Air New Zealand. He is an A Cat glider instructor, with a Gold C and 3 Diamonds, and was a previous CFI of the Auckland Gliding Club.*



In *Soaring NZ* issue 15, George Rogers asked why our gliding accident rate has been so bad over recent years. The fact is that on average we have one fatality a year with all the tragedy that this brings to families and friends, not to mention the huge cost in damaged and destroyed gliders and associated increase in insurance costs etc. Yet gliding is inherently a relatively safe sport, and historically has been second only to airline flying as one of the safest types of aviation. To my knowledge, none of our spate of accidents has been the result of structural or mechanical defects – all have resulted from pilots unnecessarily putting themselves in a situation that for various reasons have resulted in a crash. Ridges, rocks and trees do not suddenly leap out and hit gliders – yet we manage to collide with them on a regular basis. And despite the fact that gliders are safer, have better handling and performance, better airbrakes, more comfort, and better visibility than those of 30-odd years ago, our accident rate is worse.

Why is this – and more importantly, what can we do about it?

Already, I can see a number of pilots losing interest in this discussion – because “This doesn’t apply to me – I’m experienced / skilled / smarter / an above average pilot (*delete where applicable*) and I don’t make those mistakes.” If you really believe this of yourself, then you can replace those descriptions with “arrogant / overconfident / unrealistic / unaware” (*delete where applicable*).

**This series of articles applies to every glider pilot in New Zealand, regardless of experience.**

I believe that, like many accidents where contributing causes are often small but multiple, there has been a lowering of our flight standards for a number of reasons. These include:

- lower average flying hours due to less leisure time and financial constraints
- higher performance gliders that create an unrealistic expectation that we always get home from cross-country flights
- changes to national culture where people think they have the right to be more independent which leads to less discipline, reluctance to ask for on-going training, less time to talk to and listen to more experienced pilots, and unfortunately a lowering of instructing discipline and standards. <the bulleting is just a suggestion but that sentence was very long>

We all – individually and collectively – need to look at ourselves and see where we can attack these issues and reverse the slide in our flying standards and safety.

One technique we *can* all use to improve our flying safety is the use of Threat and Error Management, which I will describe in this and following articles. This is a simple technique of understanding the type of situation where we are more likely to make a mistake and to *prevent* making errors which might lead to disaster.

**“TO ERR IS HUMAN” (Cicero, 50 BC).**

In other words, we ALL make mistakes. Accepting this is an important step to understanding when and where errors occur, and therefore how to prevent errors. Pilots who think they don’t make mistakes are (a) seriously mistaken (b) dangerously over-confident (c) have a limited life expectancy!

Errors are most likely to occur when we are faced with a THREAT, that is, something that presents a change to what we are used to, or what we are comfortable with. To understand what constitutes a Threat, I will introduce the concept of a Pristine Flight (*courtesy of Continental Airlines*). In this first article, I will concentrate on a local soaring

flight and discuss possible threats, and in part 2 and 3 we will expand this to cross-country flights, and competition and other specialised flights.

## PRISTINE FLIGHT:

This is a simple gliding flight where everything goes exactly to plan. You arrive at the airfield and the club glider you want to fly is available, already DI'd and at the launch point. Helpers are readily available to pull it out for you, and a towplane is waiting. You are current on type and an instructor is happy to authorise your local flight. There is no wind and no lift or associated sink. There are no other gliders flying and no delay to your takeoff. The weather is pleasant; not too hot. You aerotow to 2000 feet and glide gracefully back to the circuit, practising a few turns and speed control. Your well-planned circuit is uninterrupted by other gliders or crosswinds and landing is uneventful. This is a Pristine Flight – arguably a bit boring, but with no real interruptions to your simple plan.

Now let's talk about likely variations – many of them very common – that can upset your plan. You planned to be at the airfield by 11.00am but you are annoyed that you are late because your partner was late getting back from shopping. No-one has bothered to get the glider out of the hangar and it hasn't been DI'd. You are short of time so you must hurry these processes. The only instructor is flying, and you haven't flown for 2 months so although you think you might need authorisation, you decide it'll be OK to go without. There is only one other person to help push the glider on to the start line, an inexperienced student who you need to brief. After the exertion of pushing you are hot before you even get into the glider. You strap in and as you are doing your pre-takeoff checks, someone interrupts you to ask for your tow tickets. It's a bit windy and you haven't briefed the towpilot, so after takeoff he annoyingly takes you downwind to what he probably thinks is a good looking cloud. You don't find lift, but you practice a few turns, then head back to the airfield, encountering unexpected sink on the way. Your circuit is lower than you would have liked and you are concerned about another glider on circuit at the same time. Your circuit is a bit rushed, and with a short finals, you don't quite sort out the crosswind so the landing is a bit untidy. After landing the next pilot points out that the DI hasn't been signed today.

All of these variations to the Pristine Flight constitute **Threats** that will increase the likelihood of you making a small slip, or an error in judgement, or forgetting something – regardless of your experience. Let's review what these Threats might include:

Time pressure	Frustration	Impatience	Procedural uncertainty
Heat discomfort	Interruptions	Weather changes	Poor preparation
Unexpected sink	Outside interference	Inexperience	Lack of currency
Fatigue	Other traffic	Poor training	Poor health
Inexperienced crew	Launch delay	Turbulence	Unfamiliar airfield
ATC / airspace	Technical issue	Dehydration	Hunger

Cross-country introduces an additional list of threats which we will discuss in the next article.

Note that many Threats are normal and some even desirable. For example a moderate wind might be appreciated for ridge soaring, but result in a crosswind takeoff and landing, and result in a headwind when returning to the airfield. Good thermals can also cause unwanted sink on downwind leg in the circuit. You may be aiming for your 5-hour endurance, but this will raise threats of thirst, hunger, fatigue, etc.

## THREATS:

All threats increase your likelihood of making an error. A proficient pilot can easily recognise all threats, and implement a strategy to prevent an error resulting. Some examples might include:

- Interruptions: If someone talks to you when you are halfway through your pre-takeoff checklist, recognise that this threat is likely to result in your forgetting something, and start again from the beginning.
- Procedural uncertainty: *Any time* you hear that nagging voice questioning something (are we clear for takeoff, did I do my checks, did I sign that DI, do I need instructor authorisation, did I remove the tail dolly) – then STOP and double-check. Observers always respect someone who acts professionally and questions some small detail, in stark contrast to someone who makes an assumption and is proven to be an idiot.
- Time pressure: *Any time* you feel pressure to hurry – for whatever reason – you should be aware that this is a major cause of errors, through forgetting processes (tail dolly removed?), forgetting to take essential equipment (maps, drinks, hat etc.), ignoring procedures (takeoff checklist) etc.
- Other traffic: A good pilot will always join the circuit assuming there will be other gliders rejoining, and have sufficient height to give way to a lower performance glider. He/she will also know the rules regarding landing if there is a glider ahead on final approach – where to land etc.

- Unexpected sink: *Always* anticipate sink in the circuit. However if a circuit is flown using correct techniques this should be self-correcting – don't rely on the altimeter, or ground features for turn-in points, but assess your angle to landing point. Any unexpected sink can easily be corrected by adjusting distance out and turn-in point – *if a pilot is alert to the possibility of unexpected sink.*

### INEXPERIENCE and INSTRUCTOR RESPONSIBILITY:

Early solo pilots cannot be expected to recognise all threats existing on any particular day. This is why an instructor must authorise and brief early solo pilots. It is the instructor's responsibility to assess all threats and brief an early solo pilot accordingly. The brief might be along the following lines (abbreviated):

- I have checked your logbook and confirmed you are current on this glider type. Your aim of today's flight is to search for lift and practice thermalling. There are several other gliders airborne, so let's review how you join a thermal if another glider is there first. Remember when you are concentrating on thermalling and speed control that lookout is actually more important. There is a moderate northerly wind today, so stay upwind of the airfield. Always keep the airfield in sight and have a plan on how to rejoin circuit if you don't find lift. Be aware of the likelihood of sink in the circuit area. Where will you land if another glider has landed ahead of you? It's hot today – have you got a sunhat and sunglasses? Now make sure you take your time getting comfortable in the cockpit and doing your checks – don't let anyone rush you. Any questions – anything you have any doubts about?

The main ways that new pilots can gain experience and knowledge is by instructors or experienced pilots passing on these thoughts, OR learning by making mistakes! Which method is better?!!

### SOME EXAMPLES of THREATS and ERRORS:

1. An experienced pilot was rigging his motor-glider for a flight from a remote airfield where there were no other glider pilots around, although a number of interested spectators were watching and talking to the pilot. While rigging, he was further interrupted by a phone call, and failed to mount the tailplane correctly. After takeoff the tailplane detached and the pilot was killed.

THREATS	POSSIBLE STRATEGIES
Remote airfield, unusual environment, out of normal 'comfort zone'.	Be aware of risk of errors because of change to normal routine. Exercise extra caution, take your time.
No other qualified glider pilots to carry out a duplicate rigging check.	Ask if anyone has flying experience and brief them on how to carry out a check for you. Alternatively go away briefly, and come back as if you were carrying out your own duplicate check with a 'fresh look'.
Interruption during rigging.	Recognise this as a serious threat! Start again and ensure everything is checked from scratch.
Interested spectators watching and asking questions.	While we want to foster interest in gliding, and encourage pilots to talk to spectators – a pilot must separate this from operational procedures. "Let me finish rigging, then I'll come and tell you all about it."
Nagging doubts or uncertainty.	NEVER assume – always check.
<b>Over-confidence</b>	Every pilot <i>must</i> acknowledge that we are all human and we do all make mistakes.

2. A pilot elected to fly his new motor-glider to a family farm, where he flew a circuit, while extending the engine to carry out an approach and motorised go-around, to 'show off' the glider. The engine failed to start, and while flying the circuit he got low and slow, stalling on base turn. The pilot was killed.

THREATS	POSSIBLE STRATEGIES
Remote 'airfield', unusual environment, out of normal 'comfort zone'.	Be aware of risk of errors because of change to normal routine. Exercise extra caution, take your time.
Carrying out an unusual and potentially high risk manoeuvre.	Practice engine-extended circuits at home airfield before trying this on cross-country flights or at other airfields.
Carrying out any demanding manoeuvre – risk of pre-occupation with this task and forgetting to fly the glider first.	Recognise this as a serious threat! First priority is <i>always</i> to fly the glider, and in this case maintain safe speed and correct circuit pattern in case the motor doesn't start.
Interested spectators / friends watching – pressure to 'put on a good show' and to stick to a plan even if it's not working.	Any 'display' or demonstration – official or ad hoc – should be legal and should only involve well-practiced manoeuvres and procedures. Keep it simple and safe.

## PROCEDURES THAT ASSIST WITH THREAT and ERROR MANAGEMENT (TEM):

We already have a number of checks and procedures that have been developed over the years, all of which help with TEM. Some examples:

Checklists – all are designed to ensure we have completed all essential actions, and/or to check the position of equipment (gear down, flaps set) or the operation of controls (airbrakes check). Also by completing a checklist diligently you remove any nagging doubt you may suddenly have, for example during takeoff (*I can't remember if I took off the tail dolly...???*).

Eventualities planning – this is a required part of pre-takeoff checks, allowing you to plan for unexpected threats or emergencies. It should also be an on-going thought process throughout the flight. (*If that glider joins the circuit ahead of me, what will I do? If this cloud has no lift, can I get back to the airfield etc.*)

Standard Operating Procedures – normal procedures, circuit procedures, right of way rules, ridge flying protocols, are all part of TEM.

Make sure you understand *WHY* we do certain things – for example:

- Strap in before doing control checks
- Don't attach towrope until fully ready to launch
- Specify nosehook or bellyhook open
- Check full operation of airbrakes on downwind
- Always secure the wingtip when parking a glider
- Maintain safe speed near the ground.

**All of these procedures have resulted from learnings from previous accidents!**

## CONSEQUENCES OF ERRORS:

An important part of Threat and Error Management (TEM) is to understand the consequences of possible errors, and to make doubly sure the most consequential errors do not occur. Forgetting your map on a local flight may not be important at all, but forgetting your map on a cross-country flight could lead to navigation uncertainty, infringing controlled airspace etc. Stalling while pulling up into a thermal might be slightly annoying, stalling on base turn may be the last mistake you ever make.

Some errors have downstream effects. Forgetting to raise the gear after takeoff has *often* resulted in gear being raised instead of lowered for landing which has led to a wheels-up landing. This is also a good example of 'seeing what you expect to see' – you can't believe you landed wheels-up "because I **know** I did my pre landing checks diligently!"

## SUMMARY:

Every flight involves some threats and all pilots must ensure they recognise these and have a strategy to manage the threats and prevent errors, and/or have a process to catch errors or slips that may have occurred. Remember we ALL make some mistakes on every flight – the important thing is to ensure they are not critical ones, or that they are captured before they lead to an undesirable situation.

### WHAT ARE THREATS?

- Any variation to our straightforward Pristine Flight is a Threat
- Every Threat increases the likelihood of an Error being committed
- Every Threat requires a positive strategy to manage it and prevent errors

**USEFUL STRATEGIES:** The following are just a few examples of TEM strategies that should become automatic to a skilled and safe pilot.

### TEM STRATEGIES:

- Use SOPs / Procedures diligently
- Don't succumb to time pressure
- Always fly the glider first
- When fatigued be more careful and conscientious
- After interruptions, say "Where was I?"
- Always carry out a Situation Awareness review after a period of high workload
- Don't 'see what you expect to see' – look for errors
- Listen to 'that little voice' that questions what you are doing
- Take advice from other pilots, especially experienced glider pilots.

**THREAT AND ERROR MANAGEMENT:** was introduced to Air New Zealand around 8 years ago, and is a mainstay of pilots' briefings for every takeoff and approach/landing. It is a proven technique for assessing and mitigating risk and is becoming accepted worldwide as a powerful yet simple tool in improving safety and preventing errors. It is imperative our gliding movement adopts this tool – individually and collectively – to stop our slide in safety standards and return to a safe and proficient operation – and still have great fun!

## A MESSAGE TO INSTRUCTORS and EXPERIENCED PILOTS:

You have a particular responsibility for ensuring Club operations are always carried out professionally and responsibly. You can do this firstly by setting a great example with your own diligent procedures. You should also be watching what other pilots are doing as they prepare to fly, or when they approach and land. Never let your guard down – lives have been saved because someone had doubts about what another pilot was doing, and 'interfered' by questioning something...

## TO EVERY GLIDER PILOT:

Acknowledging your vulnerability to mistakes is actually a sign of strength. In flying, you never stop learning. Every flight, whether you have 50 hours, 500 hours, or 15,000 hours, presents us with the same threats that must be recognised and managed. On every single flight you need to ask:

- What are my threats today?
- How will I manage and mitigate these?

**IN THE NEXT ARTICLE** I will continue the theme of Threat and Error Management into cross-country flying – which is an area that has resulted in a significant number of serious accidents.

**DUTY ROSTER FOR NOVEMBER, DECEMBER 2013, JANUARY 2014 Final**

Month	Date	Time	Duty Pilot	Instructor	Tow Pilot
NOVEMBER	2	am pm	B Hocking -	L Page -	C Rook -
	3	am pm	B Mawhinney -	R Burns -	R Brookes -
	9	am pm	E McPherson -	P Coveney -	P Thorpe / Jamie Wagner
	10	am pm	W Harman -	I Woodfield -	R Carswell -
	16	am pm	T O'Rourke -	S Wallace -	D Belcher -
	17	am pm	K Pillai -	R Burns -	G Lake -
	23	am pm	R Pitt -	R Carswell -	C Rook -
	24	am pm	J Pote -	R Burns -	P Thorpe / Jamie Wagner
	30	am pm	T Prentice -	P Thorpe -	D Belcher -
DECEMBER	1	am pm	G Rosenfeldt	I Woodfield	R Carswell
	7	am pm	J Rosenfeldt	A MacKay	P Thorpe / Jamie Wagner
	8	am pm	R Struyck	R Carswell	C Rook
	14	am pm	R Thompson	D Todd	P Thorpe / J Wagner
	15	am pm	G Healey	S Wallace	R Carswell
	21	am pm	M Belcher	P Thorpe	J Wagner
	22	am pm	K Bhashyam	L Page	D Belcher
	28	am pm		XMAS ROSTER	
	29	am pm		XMAS ROSTER	
JANUARY 2014	4	am pm		XMAS ROSTER	
	5	am pm		XMAS ROSTER	
	11	am pm	K Boyes	P Coveney	G Lake
	12	am pm	K Bridges	R Burns	C Rook
	18	am pm	S Foreman	R Carswell	P Thorpe
	19	am pm	R Forster	I Woodfield	D Belcher
AUCKLAND ANNIVERSARY	25	am pm	D Foxcroft	S Wallace	J Wagner
	26	am pm	J Pote	P Thorpe	R Carswell
	27	am pm	C Hall	L Page	G Lake