

# Waikato Whispers



Waikato Hot Air Balloon Club: [www.waikatoballoonclub.co.nz](http://www.waikatoballoonclub.co.nz) Tel:07 856 0060

**CLUB NIGHT** Wednesday

No Club Night for November

**CLUB DAY** Sunday 6<sup>th</sup> November

Flying from Innes Common. Meeting time to be posted on facebook

## NEWS IN BRIEF

### Fan Maintenance

The fan has the potential to cause injury/harm to both crew and members of the public. And without the fan, you will not be able to cold inflate the balloon.

There are a few simple things you can do and check:

- Change the spark plug every couple of years;
- Check the air filter once a year and if it is looking dirty replace it;
- Check the frame. The fan vibrates and this vibration can cause weld to crack so pay special attention to all the weld points;
- Check the muffler – the vibration can cause the bolts or wing nuts to come loose;
- Check the pull cord for fraying;
- Check that all the holding bolts are tight – again some may be prone to coming loose due to the vibration of the motor;
- It is recommended that the oil be changed every 1-2 years. Use small engine oil;
- Check the fan – look for cracks in the blade, bits missing off the tip of the blade and the general condition of the blade. When the fan is running check the amount of vibration – an out of balance fan will certainly make the fan vibrate;
- **CHECK THE FAN GUARD** – this really is important. One or two cable ties might be acceptable holding a wire that has come loose. Having several cable ties trying to hold the guard together and/or in place is **UNSAFE**. A broken wire will vibrate and end up getting caught by the fan blade. Fan blades are expensive to repair/replace.

You will note that most of the checks are something that we can all do. You do not have to be a mechanic.

### 2016/2017 Flying Season

Te Kowhai Aerodrome - open for business and we are welcome to land any time. David is meeting with the owners to discuss safety issues. The Aerodrome is essentially a PCUB under the new Health & Safety at Work Act 2015 and the owners become Officers. Our compliance with their H&S requirements will help us build a long term relationship with the new owners. There will likely be an "opening day" in February.

We have also contacted Federated Farmers to renew our relationship with their membership. Recent happenings as emailed out now make life difficult for the farmers and we do not want to make things worse. Every step we take on a paddock potentially reduces that paddocks productivity. We will keep you posted with developments.

**For our Younger Members:** (Ref: Kids Learning Resources by Cameron Balloons)

## 6) How does a balloon come back down?

By putting less heat from the burner into the balloon or by releasing heat from the top of the balloon as required in stages, we can look ahead and fly downwind and down to a field. We always look for a field without any growing crops or farm animals with an access gateway where the retrieve vehicle can pop in to pick us and the balloon up. Most fields of course have tractors and farm vehicles in-and-out of them during the course of a normal day, so a small retrieve vehicle usually poses no problem.

Here, some balloonists 'in training' are helping to pack away the balloon.



Here is our balloon at touchdown.



The balloon here, has had all the air 'squashed' out (back into a long line) ready to pop back into the envelope bag.



The basket will then be de-rigged and packed back into the trailer or van – ready to be refuelled and stored.



Ready for the next adventure!



**For our Junior Balloonists:** Thermals

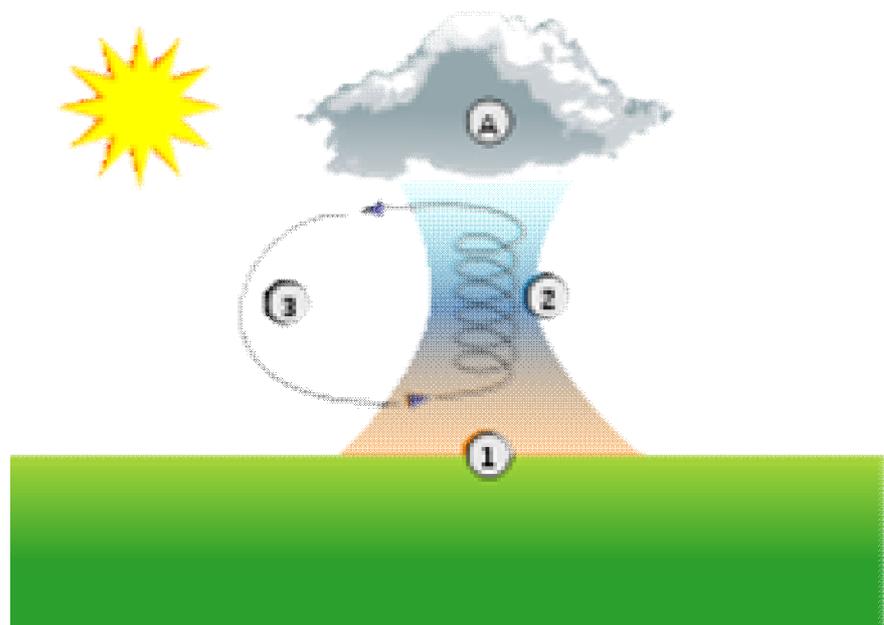
Thermals are often indicated by the presence of visible cumulus clouds at the apex of the thermal. When a steady wind is present thermals and their respective cumulus clouds can align in rows oriented with wind direction, sometimes referred to as "cloud streets" by soaring and glider pilots. Cumulus clouds are formed by the rising air in a thermal as it ascends and cools, until the water vapor in the air begins to condense into visible droplets.

A – Cumulus cloud – the top might look like an anvil.

1 – Ground level where the air is drawn into the centre of the thermal

2 – The updraft where there can be strong upward wind currents.

3 – The downdraft where the air sinks back down to ground level



Here's an experiment you can do on a fine summers day when there are large fluffy clouds in the sky. Best when there is one single cloud passing directly overhead. Best done out in the open. If the cloud is tall (indicating the presence of strong thermal activity) lie down on the ground and tune in to the direction of the cloud. Feel for the wind – when you are at the location indicated above as you ideally will not experience any wind flow. Note above how the wind is drawn into the centre of the thermal. You can experience this change in wind direction on you face and arms.



ground and tune in to the indicated above as you ideally will not experience any wind flow. Note above how the wind is drawn into the centre of the thermal.

A number of years ago two Club pilots got caught in a small localised thermal which was around 2000ft in height. Both balloons were drawn up in the thermal in a spiral until they were released at the top and followed the path back down until they were sucked back into the thermal. This went on for nearly 40 minutes until the thermal dissipated and they were able to fly on for a safe landing.



### Local Airspace Changes:

Changes take effect on 10<sup>th</sup> November when the new Visual Navigation Charts are published. Our thanks to Megan from Air Traffic Control for her presentation on Club Night.

President	Nicholas Norris	021 213 8861	<a href="mailto:nnorris@ihug.co.nz">nnorris@ihug.co.nz</a>
Chief Pilot	Dave Norris Mark Brown	021 351 957 021 912 679	<a href="mailto:nenya@ihug.co.nz">nenya@ihug.co.nz</a>
Secretary - temp	Linda Norris		<a href="mailto:bellan@vodafone.co.nz">bellan@vodafone.co.nz</a>
Treasurer - temp	Dave Norris	021 351 957	
Whispers	Dave Norris		<a href="mailto:nenya@ihug.co.nz">nenya@ihug.co.nz</a>

## Hangar Flying edited by George Denniston

*Experience of others can help prepare you for the unexpected!*

# Tanks, but no Tanks.

by Peter Cyrus

**M**y Galaxy 7 hot air balloon is based in Snohomish, Washington and I normally fly there, but this morning in August I planned on joining three other local balloonists in Arlington, Washington, some 10 miles to the north. On arrival, I was surprised not to see anyone else at our usual meeting place. I later found out that they had canceled the night before due to concerns about ground fog in the morning, but neglected to inform me. Morning fog usually is a concern there, but the briefing I got at 5 a.m. indicated it was burning off already, and sure enough it was all gone by the time we arrived at the meeting spot at 6:45 a.m.

My crew - all first-timers - and I proceeded to the launch site, at the north

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*HANGAR FLYING with George Denniston is presented to enhance safe flying by providing balloonists the opportunity to gain experience from others without actually flying. The column is edited by George Denniston who is a doctor and balloonist living in Seattle, Washington. Articles may be signed or anonymous to protect the privacy of those involved, as the author wishes. If you have an experience that you would like to share with others, send your manuscript to Balloon Life magazine, Hangar Flying with George Denniston, 2336 47th Ave SW, Seattle, WA 98116-2331. Submissions may be typewritten, submitted on disk (Mac or IBM format), or e-mailed to tom@balloonlife.com. Balloon Life pays \$35 for each story used.*

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end of Arlington airport, where we set the balloon up and inflated it. I did a normal preflight check, for which I have developed a written checklist, and found everything normal. At about 8 a.m., we were ready to go. I took two passengers and followed my pibals into the air.

Surface winds were from the northeast, with perhaps a slight turn to the right as we rose. But above 1000 feet AGL, the winds were completely calm. I had hoped to be able to box back to the east and land on the airport again to swap passengers, but I found no cooperative winds at the altitudes I explored.

About 10 minutes into the flight, I noticed a change in the sound of the burner, and discovered that I was down to about 15 percent fuel in my first tank. Normally, each of my tanks would last longer than that, but I thought that a slight change in the procedures that morning might account for the discrepancy.

My four tanks share a common fuel manifold (hose) running to the burner, and it's my habit to run each tank down to 20 percent, then switch to the next tank in a predetermined order: blue, green, yellow, then red. At the upstream end of the manifold is a quick-release joint to which I attach another hose when refueling. This quick-release valve closes automatically when unattached, but it is also protected by another valve just downstream, which adds another level of protection against leaks.

Turning a knob opens this safety valve, but that morning the knob had been missing from its stem - I later found it under the nearest tank. Without the knob,

I couldn't open the fueling port. It's my habit to inflate the balloon using a fifth tank that attaches to this port. Using the fifth tank saves onboard fuel and releases me from any time pressure to fly after inflating. This tank is removed before the passengers board.

Without the fifth tank, I had had to inflate off my blue tank, which I reckoned might have caused the abnormal fuel consumption. At any rate, I switched to the green tank and noted that it was not yet registering - the gauges on my tanks register only when they're less than 35 percent full.

A few minutes later, I noticed that the green tank was now registering, and in fact it seemed to me that the fuel gauge was moving lower at a visible rate. Now I was worried. Since both tanks had seemed full on the ground - I check the line pressure from each tank as I do my burner check - I could only assume that I had a leak in my fuel system somewhere. I theorized that the valve controlled by the missing knob was actually in the "open" position, had been for some time, and that the constant fuel pressure had loosened the quick-release valve. My passengers and I sniffed around for a fuel leak, but didn't smell anything.

I decided to look for the most expeditious landing opportunity. I dropped down to 100 feet or so and began looking ahead for landing spots. Unfortunately, we were in very light winds and over a densely settled area. During this flight phase, the fuel level in the green tank got down to the

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20 percent level, and I switched to the yellow tank. My balloon is normally very stingy with fuel, and I'm usually close to landing by the time I need the yellow tank. My red tank was still full, but I like to think of that as a reserve tank only. So whether or not I had a fuel leak, I began to worry whether I'd be able to find a suitable landing spot before fuel exhaustion became an issue.

We had been moving so slowly that our chase vehicle was right below us. We told them to go to the Taco Time parking lot where we normally meet before flying.

As we flew by our crew, the wind lined us up right down the parking lot. It's actually a fine landing spot on a calm day: bigger than a football field with no powerlines. There are three light stanchions, but two were left of our track and the third too far downwind to be a factor. At 8:30 on a Saturday morning, there was only one car in the parking lot.

I made a near perfect approach and landing, easy in such light wind. We stopped after about 10 feet of skid, with the balloon standing up. It doesn't take much wind to knock the basket over, and we were only carrying about half the maximum gross weight, so I know the winds couldn't have been very strong. My chase crew came over to add weight. When the passengers got out we were able to walk the balloon another 10 feet to the northwest without adding any heat. I stationed my crew, joined by a blond woman who had driven up to share her delight in us, on both sides, and we brought the balloon down onto the pavement.

As we were bringing the balloon down, a deputy of the Snohomish County Sheriff's Office drove up. He asked me if everything was OK, and I said everything was fine. He then asked if I had planned to land there. We balloonists are rarely given the opportunity to plan where we land, so I responded that it had been an "opportunistic" landing. He laughed at that, and then offered us any assistance we needed. I thanked him for the offer, but things were well under control, and he drove off, with both of us still smiling. I appreciate the sheriff's "uniformly" cooperative attitude.

After packing up I called Tom

Hamilton, my former instructor. I explained my fuel-leak theory and then headed down to Snohomish to meet him. If I had a fuel leak, I wasn't going to refuel before bringing the balloon in to the repair station.

Tom's theory, which I believe is correct, is that I had simply forgotten to refuel after my last flight. I had last flown in Las Vegas in March (my balloon stayed down south after the Albuquerque Fiesta last year, since we can't fly here until summer anyway). After that flight, I hadn't refueled since I knew I would be headed back north and reckoned I'd be safer and faster on the road with empty tanks in the trailer.

The balloon has been back in Washington since April, and I'd already been out three times this season, but not in my own balloon. I guess the time lapse and intermediate activities had conspired to help me forget that I hadn't refueled after flying like I normally do.

I took 26 gallons that day, compared with 17 gallons the next day after a longer flight. I reckon I must have used 8 gallons from the blue tank and 6 from the green tank in Las Vegas, then used another 12 from all three tanks on this second flight from Arlington. I have no explanation for why the blue tank wasn't registering before the flight, unless I just missed it in the preflight. Apparently, checking that the fuel pressure is above 100 is no guarantee of fuel quantity as I thought it was; I'm told the pressure doesn't drop noticeably until the tank is almost empty.

Although I won't likely make this particular mistake again, it bothers me that I didn't have a procedure in place beforehand to detect this kind of error. I've asked what is the best way to check fuel quantity before a flight, and heard the following suggestions:

First, make sure you check the gauge - I will from now on.

Second, open the spit valve on each tank. I've tried this a few times since but don't love it, mainly because it spreads the smell of fuel all around the basket, preventing me from sniffing for fuel leaks (a greater danger). It's also hard to distinguish spitting vapor from spitting liquid under those circumstances. I'm also not sure a refueled tank would spit after settling or a drop in temperature. I'm told we can shake them to make them spit, but if that works at any fuel level, it defeats the

purpose of the test. I'll keep trying it, though.

Third, we can heft the tank a little to judge its weight. But since the tanks are tied down, they won't go far, and I'm not sure I can judge the difference between a 75-pound full tank and a 55-pound half-empty one.

Fourth, a friend and I were kicking around the idea of a strip of that temperature-sensitive tape that changes color. I think the color change might show the liquid level, since tanks are always colder outside the vapor-filled fraction, but maybe that's only after you've started to use fuel (and propane boiling off inside the tank as the pressure drops cools as it evaporates). One small problem would be that the insulation that surrounds my tanks would hide the tape.

Fifth, we can focus not on checking fuel during preflight but instead on making sure we've refueled before flying, on the generally valid assumption that any fuel you've put in is still there. My first idea was to mark the tanks with an *EMPTY* flag if I *don't* refuel after flying, but a few days later the propane supply tank was empty when I went to refuel, and I didn't reopen the trailer to mark the tanks out of laziness. Now I think I should mark them empty as I switch tanks in flight.

In confirming this story, I checked again with my crew and passengers, and they all reiterated that they'd had a great time, had learned a lot about ballooning, and all wanted to do it again - in fact, three of the four went again four days later.