

# Waikato Whisper



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

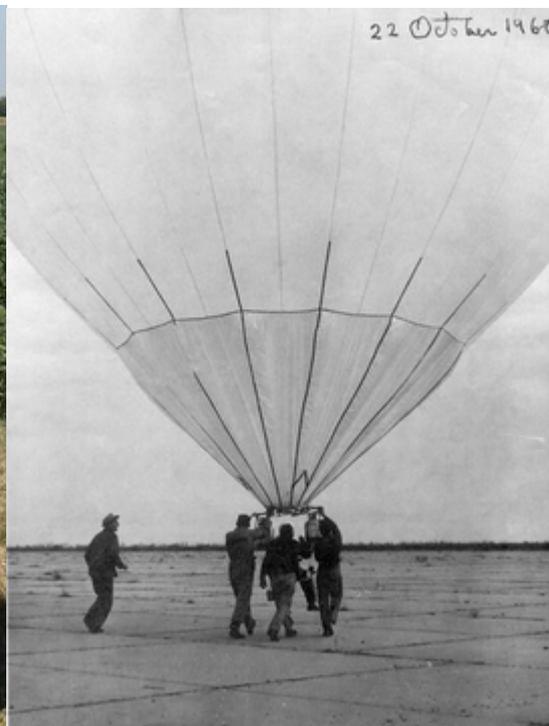
**CLUB NIGHT** Wednesday 7<sup>th</sup> September We are organising for Megan Thomas from ATC will talk to us about the new Control Zone.  
7:30pm Waikato Woodworkers Guild Storey Ave.

**CLUB DAY** Sunday 11<sup>th</sup> September to be advised via the club facebook page. Tethering at the Lake

## NEWS IN BRIEF

### Early Modern Hot Air Ballooning

Modern hot air balloons, with a more sophisticated on-board heat source than the Montgolfier brothers' basket of hot coals, were pioneered by [Ed Yost](#) beginning in the 1950s which resulted in his first successful flight on October 22, 1960



*Yost flew the first man-capable hot air balloon at an old air base at Bruning, Nebraska on October 22, 1960. It used propane vapor rather than liquid propane. It was a cold October day, and Yost had to shake the propane tanks to get some of the liquid propane to vaporize on the sides of the tanks. After a slow climb to around 500 to 600 feet, Yost succeeded in staying aloft for 35 minutes. The deflation opening was only 7 feet across, with the fabric held together by a line which was cut by an explosive squib fired by a flashlight switch. The small hole opened up when the squib was fired. But with such a small opening, the balloon deflated very slowly. Yost said "the balloon dragged me all over the country."*

[http://www.lighterthanair.org/ellis/ed\\_yost.htm](http://www.lighterthanair.org/ellis/ed_yost.htm)

## Ultramagic Balloons

Ultramagic have been designing and manufacturing hot air balloons in the late 1970's with their first balloon being flown in Africa. Their factory is in Barcelona Spain.



Ultramagic Balloons are now firmly established as *the leader* in balloon design and are one of the largest balloon manufacturers in the world. The annual production has now increased to between 80 and 100 balloons with approximately 80% being for export.



Nicholas is now the NZ Agent for Ultramagic Balloons so if you would like any information contact him [nnorris@ihug.co.nz](mailto:nnorris@ihug.co.nz)

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

### 4) How does it get ready to go up?

To start – the balloon equipment is positioned on the launch area from the trailer or vehicle and is laid out in the direction of any breeze.



The basket is rigged.



Do you mean it's put together?

Yes, we simply mean the burner is set up and attached together like this...



The Pilot puts on his gloves and tests the burner and fuel system pre-flight.



Wow, what a lot of gloves!



Then the basket is put on it's side and the fabric part of the balloon (envelope) is attached to the burner frame with karabiners (metal connectors with a screw-opening.) The basket is then attached to the vehicle

with the restraint system (the black strap, blue release with the red clip, seen below right) ensuring take-off only occurs when the pilot is totally ready.

out of the bag, into a long 'sausage' shape.



Did you know a normal four-person balloon is about 25m tall from the bottom of the basket, to the very top of the balloon.



Once briefings have been done and crew jobs allocated, then the envelope is filled with air from a motorised, cold-air, inflation fan like this.

Some ballooning friends here, are nearly ready to go!

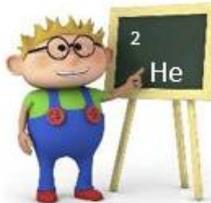


Then the Pilot has to complete the final checks and confirm with the crew that everyone is ready to start...They can then begin the 'hot-inflation'. The Pilot checks the fuel-system once again and 'fires up' the burner, heating the air inside the balloon with one or sometimes two, 5m long, controllable flames.



The air inside the balloon heats up, expands and rises taking the fabric part of the balloon with it, all to a vertical position... and once the last checks are done, the passengers have climbed aboard and everyone has had their flight-safety briefing, then it is **TIME TO FLY!**

## The Science Bit



### The Science Bit - What makes a hot-air or helium-filled balloon rise up or float in the air?

All gases, liquids and solids take up space and have weight.

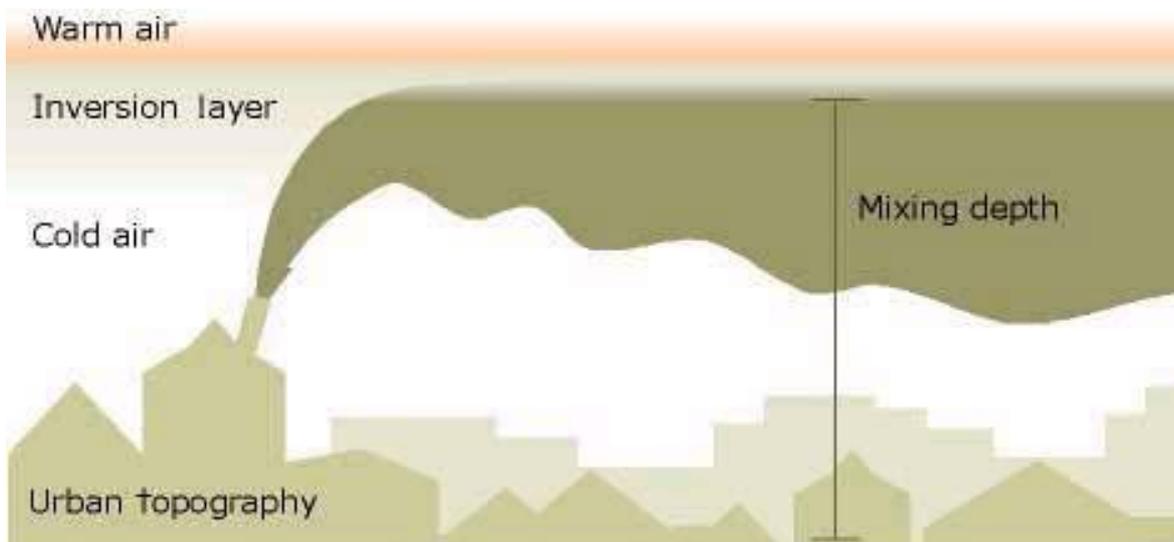
An object will float in water or in air if the object is lighter than the air or the water, it displaces. Air in a balloon envelope that has been heated more than the surrounding air will rise, as will helium gas in a toy balloon as both are lighter-than-the-air displaced, causing the balloon to float and rise.

## For our Junior Balloonists: Temperature Inversion

How often do you see a layer of smoke that seems to settle over houses rather than rise up in the sky and wondered why this happens.

In the normal situation, the air temperature decreases as you go up in altitude in the troposphere. The rate of decrease varies, but an accepted average value is 6.5 degrees Celsius per 1000 meters (this is called the normal lapse rate). That is, if you start at sea level and go up (say, in a balloon) 1000 meters in the atmosphere, you can expect that the temperature of the surrounding air will drop an average of 6.5 degrees Celsius. Go up another 1000 meters (one kilometer), and the temperature will drop another 6.5 degrees (that is, it will be 13 degrees colder than it was when you started at sea level).

Here the inversion layer has trapped the smoke beneath it.



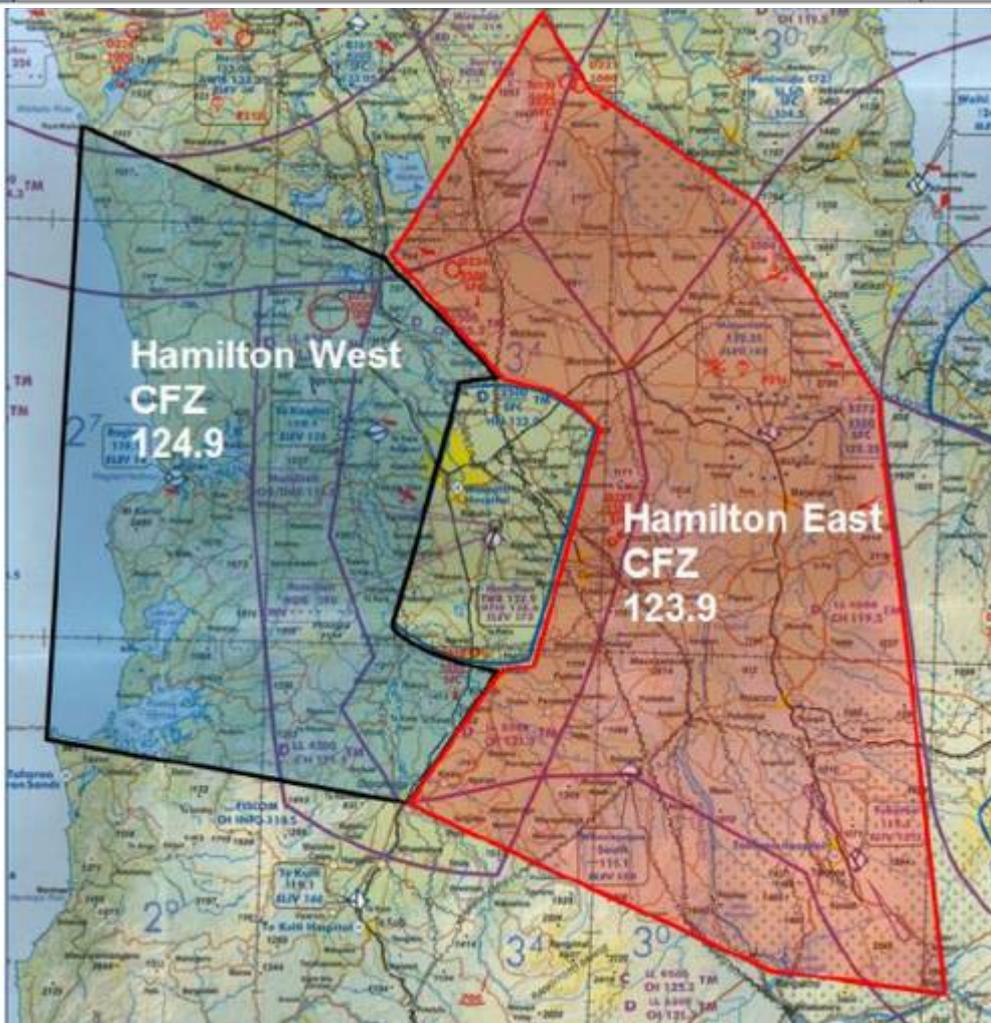
Winter inversion layer trapping smoke from home fires

## Local Airspace Changes:

Reset your aircraft radios – not sure just when these will become effective – most likely when the new VNC is issued in November. At that time we will also get confirmation of the altitude of the lower level controlled airspace.

VNC charts are available from the Waikato Aero Club.

Waikato Airspace Changes		
Result	Two new CFZs are established – Raglan and Morrinsville – as per Figure 6 in the “2016 Waikato and Bay of Plenty airspace review – final airspace changes” document published 5 April 2016.  Raglan CFZ – surface to lower level of controlled airspace, 123.75 MHz “Raglan traffic”.  Morrinsville CFZ – surface to lower level of controlled airspace, 123.25 MHz “Morrinsville traffic”.  NZB273 Matamata will remain on the existing frequency 122.25 MHz. There is no change to the current situation.	Proposal effect from current
		IFR
		VFR
		Nil
		Minor +



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