



Issue 29 - May 15 - Jun 15

# Contraails

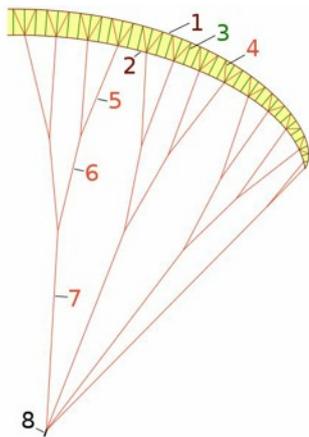
## Newsletter of the Christchurch Aviation Society

CAvSoc

### Paragliding - Ups and Downs

Neil McCain the chief coach at Wessex Hang Gliding and Paragliding Club gave our March talk. The basic principles of flying are similar to gliding except that the controls are primarily using left or right hand control cord pulls to affect the wing to create a turn, climb or descent supplemented by weight shift.

Paragliding in Wessex started in 1980 but can be traced back to the 1960's when they used a single skin rather than the double skin that we see currently. A single skin wing in the form of the Rogallo hang glider wing was researched as a possible controllable recovery system for space capsules, but when the ocean splashdown was decided upon the parachute proved a simpler solution. A patent for the para-foil was granted in 1963 and this consists of a number of rectangular cells, open at the front but tapering and closed at the back. Hence in a flow of air the cell inflates due to air becoming trapped



to form a longitudinal cross section resembling an aerofoil shape. A ram air parachute used by sport parachutists uses a similar principle but the wing is straight whereas the head on view of a para-glider is an arc. Cells are partially open to each other thus allowing span-wise flow internally which aids stability so that if one cell momentarily loses air the nearby cells provide re-inflation. The

pilot is suspended by suspension lines which pass via risers to the pilot's harness. The lines, with a 400lb breaking strain, typically bifurcate twice before joining the wing at a cell wall. There are three or four rows from front to back and pulling down on the rear lines pulls the rear part of the wing down and causes the same effect as flaps on an aircraft – to increase drag and to produce a greater descent rate. Conversely, a speed bar, normally foot operated, decreases the angle of attack by pulling down on the leading edge. The pilot sits in a comfortable, almost arm chair like, seat which contains padding for the occasional hard landing and an emergency parachute. Soaring is the type most people see, at

Barton-on-Sea or Southbourne, utilising the rising currents of air caused by a gentle Southerly wind striking the cliffs.

Cross country flights can be achieved by thermal soaring to gain height although cross country flights in the south east of England are cramped by controlled airspace. Instruments that help in this are similar to those used in gliding such as a Variometer to detect rising air, a GPS for navigation and an altimeter. A combined GPS and altimeter can provide a record of a flight for replay on a computer. Neil brought his para glider in to show the lightness of the material and lines although the overall weight with couch and parachute made for a heavy lift. During training Neil had to purposely collapse the canopy and recover it. This loses a large amount of height, and he was told to ditch in the sea for a boat pick up.

Determined not to get his feet wet he chose to land on a small pontoon moored out at sea and landed with just one end of the canopy dipping in the sea. Such is the accuracy of landing that competitions are held to land on a small marker. Overall we had a fascinating talk, well applauded, on something often seen on our coast without the knowledge of what is involved.



### Vixen News

Winter service well in hand with repairs to brakes post burst tyre. Work also on port aileron. Full write up on Facebook page



Spencer Furley

**Meetings for 2015 - at Druit Hall commencing 8pm Wed 6th May (AGM) – “Earliest Pioneers of Aviation (prior to World War 1)” by Peter Roe**

**Bournemouth Air Festival** takes place Thursday 20th August until Sunday 23rd August 2015.