WARM AIR 4 September 2021

Aviation Sports Club Gliding Newsletter

THIS WEEKEND: **No Flying this Week**

www.ascgliding.org Bank Acct 38-9014-0625483-000

Saturday	Instructing:	
	Towing:	
	Duty Pilot	
Sunday	Instructing:	
	Towing:	
	Duty Pilot	

MEMBERS NEWS

Are we there Yet? Keep up the Good Work Folks, getting closer to threedom.

In Warm Air this Week;

- ***Club News***
- ***ASC Condorites – Virtual Soaring***
- ***Video Corner – some links to some cool aviation videos.***
- **Avian Compatriots Part 10. The route humans took towards flight. Jonathan Pote**
- ***Roster***

Club News

Okay folks get your Diaries out and note the following events and dates.

Club Captain Kishan wants, needs, request you note the following.

9th October

- **Annual General Meeting**
- **Start of Season Briefing**
- **Working Bee & BBQ**

The hangar needs a good clean up. We would like to have a working bee after lunch and put some stuff in trailers and take it to the tip. There are a couple of old gliders in there .... *(only joking)* ....

There is quite a lot of ~~crap~~ rubbish slowly rotting away and bits of a/c that can now be dumped. Put your overalls in the kitbag. If anyone has a household trailer / ute that they are prepared to bring along, can you please email me and let me know. If we don't have any, I will organise hiring a trailer.

Any excess hands may get to do some glider polishing as there are a few that need doing.

Labour Weekend, **Matamata** **Sat 23rd Oct 2021,**

We are intending to head to Matamata for the long weekend. This is just around the corner. The XC course is also being run at Matamata that weekend so if you want accommodation on in the bunkrooms I would book early.

Cross Country Course, Sat 23rd Oct 2021 - Wed 27th Oct 2021

For those planning on attending the XC course now is the time to register. Use either the Events tab on the GNZ homepage, or here:

https://msc.gliding.net.nz/events/msc-cross-country-coaching-course-oct-2021

From the ASC Condorites

Our CFI gives us a run down on the Virtual Gliding World, ***Condor****.*

Big shout out to Craig who managed to organise Jeff in SA to create all the landscapes from Te Aroha to Cape Reinga!

So, we now have valid landscape files for our airfield and all the airspace going north and along the coast. This is a fantastic addition to Condor for us at NZWP. If you want to know what it looks like north you can do it safely from your lounge.

If you haven't explored Condor before, it's worth a look. It's a great simulator. It comes with a bunch of nice aeroplanes and for a fistful of dollars more you can add extras like an ASW20, JS1, Libelle, even a Stemme S12. Or for the really discerning, a Ka6CR.

It is fairly easy to connect XCSOAR to condor which makes this a great opportunity to get to know XCSOAR in flying conditions. The last thing you want to be doing when flying is re-configuring your device. (In fact - just don't do it. Eyes out the cockpit folks). This is a golden opportunity to prepare for the new season. Get to know XCSOAR and have some fun as well.

Condor also supports the famous "Q" button which instantly gives you another 1000 feet altitude (or is it 3000? I don't know, I never have to use it - Yeah RIGHT!)

I'm pretty sure Joysticks are classified as essential items (I'm struggling to find anything online that is not classified as essential). So, no excuses. Get into it!

Condor also allows us to group fly by connecting all our computers together over the internet. Thanks to Kishan we have another little toy that allows us to talk to each other while we are flying. Big thanks to

Andrew playing the part of number one task and weather setter. (Though I notice he is starting to sneak in the odd task with "Q" disabled). About Condor – Condor Soaring

Thanks Ray. Are you still CFI in the Virtual world as well?

Rays Dream Upgrade Machine for the Air Training Cadets, a Stemme Stemme Twin Voyager S12

After obtaining ATC Clearance Westharbour Marina with NZWP in the background

Downwind for 26 looking at the Prison

An airfield familiar with Hawkeye and Ray last Season – Can you guess which one?

A high-performance machine with classic lines. I wonder what it could be…..

So don't be shy send us pictures and brief comments on any of your aviation related Lockdown activities that are keeping you occupied e.g., flight sim, model-making, books etc. We will note in next week's Warm Air.

Video Corner – Okay here is another selection for you viewing pleasure

Okay, checkout some Virtual Soaring and see if this entices you to purchase.
Condor 2: The complete soaring simulator (trailer) - YouTube

Righto Tim has produced another great little video
Best Of Soaring in New Zealand '20-21 (crank the volume!) - YouTube

Most of you may have seen this one before, but here is a great video of the West Coast. Low Level Flying at the Beach | Gliding New Zealand Style - YouTube

For the Avid Vintage Glider fan or those who like open cockpits this one is for you Classic Glider Flight - The Ultimate Freedom - YouTube

Well, we have all seen Betsy fly over Auckland city. Here is a great video of their operations. I have been fortunate to take a ride and a most beautiful machine she is. Enjoy 1944 DC-3 "Betsy" Cockpit Movie Supercut! AMAZING New Zealand & Dakota views: Fly DC-3 NZ [AIRCLIPS] - YouTube

Many thanks for the replies and some tips for getting some other video links. I will follow those up and insert.

Avian Compatriots Part 10. The route humans took towards flight.
Jonathan Pote

I think it is important to note that *Homo Sapiens* approached the ability to fly in the opposite direction to that in which Avians evolved. For the birds it happened by accident as a result of evolution, gaining other advantages along the way, not least catching edible creatures and avoiding being eaten themselves. For humans it was pretty much the opposite.

Humans have longed to be able to fly as long as they have had sentient brains, many thousands of years ago. Early efforts showed that it was not all that easy. Daedalus and his son, Icarus, tried to escape the wrath of King Minos of Crete some four millennia ago. Daedalus fashioned wings for both of them from feathers embedded in wax. He counselled Icarus to neither fly low as the wings would absorb moisture and thus fail, nor too high as the sun would melt the wax and the feathers would be blown away. As so many times since, that first known pre-flight briefing was ignored be an impetuous young aviator and Icarus flew too high, falling to his death when the sun melted the wax holding eagle feathers to his arms. We tend to forget that Daedalus supposedly made it across the Mediterranean and landed safely. A 50% mortality was really a pretty good start for aviators, and the idea should have been pursued; After all, mortality in test pilots as supersonic flight was explored in the 1940s and 1950s was over 50%, but the survivors persisted until now the 'sound barrier' is literally just history, not an aerodynamic problem at all.

Icarus falling

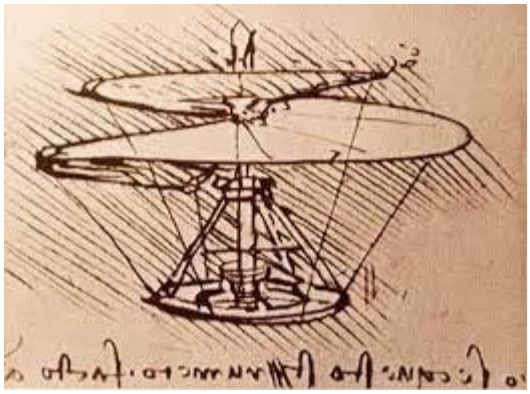
During medieval times, the mortality rose to 100% as people flung themselves off church towers wearing various 'wings'. A short ballistic trajectory was followed by a vertical descent accelerating towards terminal velocity and conveniently took the hapless adventurer almost directly to the graveyard below.

Medieval attempts

Whilst the practical aspect was not encouraging, Leonardo da Vinci did advance the theory quite remarkably.

Leonardo da Vinci (1452 – 1519)

Leonardo's glider drawing. Note the avian wingshape and lack of a vertical fin



Leonardo's helicopter, based on Archimedes' screw for pumping fluids for thousands of years

Leonardo da Vinci wrote a codex (an early form of a book) *"On the Flight of Birds"* (ca 1505). In his *Codex* many of today's aerodynamic terms and concepts appear, concepts such as 'centre of gravity' and 'centre of pressure' and the concept that a bird could fly by flapping its wings

"Birds can gain altitude, stated Leonardo, by "[raising] the shoulders and [beating] the tips of the wings towards itself, thus condensing the air that stands between the tips of [its] wings and itself". Leonardo describes how a bird rests in the air, after flapping its wings to gain altitude, by gliding downward to the ground.

He states that the only way for a bird to ascend when in a tailwind is for the bird, at its peak ascent, to turn in a semicircle and face the wind to continue its ascension in the opposite direction.

Leonardo explains that a bird should fly above the clouds to prevent its wings from getting wet and to avoid the circular air patterns that come from mountainous terrain. If a bird flies above the clouds and somehow gets turned over, then it should have plenty of time to turn itself back over by either "[falling] immediately with the wingtip downwind, or lowering the opposite wing to below halfway".

He notes that the framework needs to be strong with leather laces and raw silk for the ribs. He also adds that there should not be any metal in the machine because of its tendency to wear or break under stress.

For 'condense' read compress, note his prediction of the rotor associated with wave, and finally if only the designers of the de Havilland DH106 Comet had studied his codex!
That so much about heavier than air flight was understood six hundred years ago, even if only by one philosopher and his pupils, is astounding. Could that progress have been sustained by others?

Montgolfier Brothers (Late 18thC) There was another avenue to follow, the lighter than air machine, albeit not successfully for over three hundred years later. On 21st November 1783, the Montgolfier brothers successfully flew a human-carrying hot air balloon. Two brave aeronauts covered nine kilometres in about twenty-five minutes during the first manned attempt, rising to about one thousand metres and only coming down because their fire generating warm air, for which much fuel remained, was damaging the balloon envelope. Success at last, but it was almost a technological cul-de-sac, for whilst hot air balloons are popular and common these days, it seems that practical commercial lighter-than-aircraft for freight or passengers are always "about five years away".

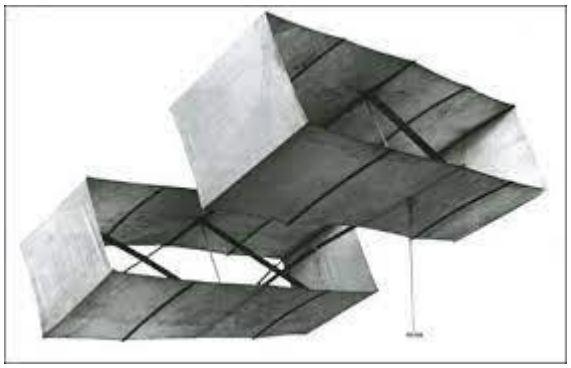
George Cayley (1773 – 1857)

A replica of George Cayley's glider of ca 1850

Attempts at flying heavier than air machines continued, with slow but steady progress. In England in 1809 Baronet George Cayley published *'On Aerial Navigation',* detailing his studies from 1792 onwards. He enumerated for the first time the four forces (weight & lift, drag & thrust) involved in flight and stated the three requirements for a **successful** heavier than air flying machine, namely ***lift, propulsion and control***. He also pioneered the **cambered** wing, and his gliding experiments (using potential energy as he had no suitable engine with which to develop thrust) continued until in 1853. His last gliding machine carrying his unwilling coachman several hundred yards in a successful downhill glide in front of the baronial mansion. Two replicas of this 'bathtub under an awning' have flown similar distances in recent years, the low centre of gravity and body movement by the brave occupant (one, Derek Piggott, a very well known glider pilot) providing a degree of stability and control.

Lawrence Hargrave (1850 – 1915)

Lawrence Hargrave, living in Sydney NSW, began experimenting with box or cellular kites in the 1890s. Unlike previous 'kite-shaped kites' (a simple quadrilateral shape in just one plane that obtained lift by deflecting moving air downwards - and required the drag and weight penalty of a stabilising tail), his box or cellular kite, comprising fabric stretched over a wood frame, seemed inherently stable and pulled hard on the tethering rope he held. Aerodynamic forces meant the fabric assumed the curved airfoil shape known to George Cayley and on 12th November 1894, harnessed to several cellular kites in tandem, Hargrave was lifted about five metres into the air during a brief gust. But for a thoughtfully attached anchor rope, he would have gone higher. A load carrying, heavier than air 'contraption' had flown! Amongst distinguished visitor who soon came to watch was one Graham Alexander Bell. Soon adventurous people were airborne under cellular kites, attached to Mother Earth by just a thread. Military use followed, soldiers being lifted to frightening heights, a thousand feet or more, in order to "see over the hill", fulfilling the long help wish of their commanders.



Hargrave's Box Kite

Remarkably unknown today, Hargrave received recognition from the Wright brothers, and indeed considered their advance a decade later as less significant than his. He was elected an early Member of the Royal Aeronautical Society, itself formed much earlier in 1866. The conquest of flight was now a global quest, with pioneers from France, Germany, England, Scotland, the USA and Brazil pooling their experience and ideas. The benchmark "powered, controlled flight by a heavier than air machine was now inevitably only a few years away. But by who, where and when?

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Well folks catch you next week. And remember turn that frown upside down as this pilot did!

ROSTER

Month	Date	Duty Pilot	Instructor	Tow Pilot
Jul	~~3~~	~~G LEYLAND~~	~~I WOODFIELD~~	~~P THORPE~~
	~~4~~	~~I O'KEEFE~~	~~A FLETCHER~~	~~R CARSWELL~~
	~~10~~	~~M MORAN~~	~~S WALLACE~~	~~F MCKENZIE~~
	~~11~~	~~T O'ROURKE~~	~~R BURNS~~	~~D BELCHER~~
	~~17~~	~~R BAGCHI~~	~~A FLETCHER~~	~~R HEYNIKE~~
	~~18~~	~~T PRENTICE~~	~~L PAGE~~	~~G CABRE~~
	~~24~~	~~C BEST~~	~~P THORPE~~	~~R CARSWELL~~
	~~25~~	~~E LEAL SCHWENKE~~	~~I WOODFIELD~~	~~D BELCHER~~
	~~31~~	~~R MCMILLAN~~	~~S WALLACE~~	~~P THORPE~~
Aug	~~1~~	~~A MICHAEL~~	~~R BURNS~~	~~P EICHLER~~
	~~7~~	~~R WHITBY~~	~~A FLETCHER~~	~~R HEYNIKE~~
	~~8~~	~~C DICKSON~~	~~P THORPE~~	~~G CABRE~~
	~~14~~	~~K JASICA~~	~~L PAGE~~	~~F MCKENZIE~~
	~~15~~	~~J DICKSON~~	~~I WOODFIELD~~	~~R CARSWELL~~
	~~21~~	~~S HAY~~	~~S WALLACE~~	~~D BELCHER~~
	~~22~~	~~K BHASHYAM~~	~~R BURNS~~	~~P EICHLER~~
	~~28~~	~~K PILLAI~~	~~A FLETCHER~~	~~R HEYNIKE~~
	~~29~~	~~G LEYLAND~~	~~P THORPE~~	~~G CABRE~~
Sep	4	~~I O'KEEFE~~	~~L PAGE~~	~~P THORPE~~
	~~5~~	~~M MORAN~~	~~I WOODFIELD~~	~~F MCKENZIE~~
	11	T O'ROURKE	S WALLACE	R CARSWELL
	12	R BAGCHI	R BURNS	D BELCHER
	18	T PRENTICE	A FLETCHER	P EICHLER
	19	C BEST	P THORPE	R HEYNIKE

	25	E LEAL SCHWENKE	L PAGE	G CABRE
	26	R MCMILLAN	S WALLACE	F MCKENZIE