Torque Back

The news letter of the Hobart Model Aero Club inc.

Happy New Year for 2013

Scale day at KF and More...

www.hobartmodelaeroclub.org.au

COCKPIT TORQUE

Its all a matter of Security - ALL MEMBERS PLEASE NOTE !!

Machinery Shed and Gate

Recently members arriving at Kelly Field found that the machinery shed was open.

If you are the last to leave the field please ensure that the buildings are locked and secure.

And

The Machinery shed !!

The committee notes that many of the 2.4GHz pegs on the frequency board are still very poor so we intend to make a batch and have them available on the day of the Christmas Lunch.

See photo of attached sample - advise William Deal if you would like one and he will do the rest!

We already have several orders after it was mentioned at the field last weekend. Donation to the club : $3 each

Cover picture: Ken Lawson's Wilga PZL. Engine 274cc twin petrol engine

IN THIS ISSUE

Hobart Model Aero Club inc.
PO Box 1117
Rosny Park 7018.

In the next Edition

PLEASE READ PAGE 15

MEMBER TORQUE

Profile
Bill JENNINGS

Your first aircraft encounter - Full Size or Model - can you recall?
I remember being terrified when my father took me to the pictures to see the Battle of Britain movie. I was probably 6 or 7 years old at the time. I also remember seeing a biplane (probably a Tiger Moth) land at the showgrounds in Launceston one year when I lived there – in the mid-1960s, we are talking about!

How long have you been an aero modeller?
I have been involved in aero modelling since 1953 (only last week Ed. Ha ha ha)

Your first model aircraft - details please
Frog Vandiver C/L model

Your first full time Employment
I worked for some lawyers in Hobart (Clerk, Walker & Stops, they were called then, now just Clerk Walker) for 2 years – would have been 1980 and 1981, before I went to Uni in Canberra. I only returned to live in Tasmania again in 2004, after a period working in France.

Your present Employment (or last if now retired)
First job was Navy Diver, specialising in EOD (explosive Ordnance disposal) Underwater weapons, Mine countermeasures.
Coal miner at Invincible colliery NSW (in the western coal fields near Cullen Bullen Ed…)

Name three model categories in which you are currently interested
Scale, scale and scale (I guess that counts out profile models Ed… ha ha ha)

Most admired person in model aviation
Ross Woodcock

Do you have a current project on the building board
Yes, An 82" span Corsair

Favourite full size aircraft
Corsair

Favourite model engine
Y S

Best memory of model building or flying
Finishing a P51 for the 1982 Anzac Scale day at Wagga

Favourite place in Tasmania (other than Kelly Field).
The whole Island.

SCALE TORQUE

STAND OFF SCALE 28 OCTOBER
28th October
Tony Gray. CD.

The weather leading up till the 28 October was rain and wind. The forecast for the Sunday looked like the event could be held. I arrived at Kelly Field at 9 am, the wind was a bit on the brisk side, probably ok for the large models, consequently some of the smaller models were not entered. The Phoenix Flyers arrived with quite a mix of models, the two smallest models were Steve reece's TL2000 Sting (A carbon fibre recreational aircraft) with a DLE 28cc and Debbie Walters Eindecker 20cc DLE. Rick and Tristan Price from the Hobart Radio Control Flyers arrived with three smaller models between them. A tiger the Ultimate Bipe and a cessna182,Saito65 powered Registration got underway at 9/15. Geoff Leverton and Dave Christian started the static judging.

At 10 am the wind was still quite strong, the decision was made that flying would commence at 10/30. The flying requirement was Take Off ---realism in the air ---straight and level pass---three legs of the circuit---and the landing. Each carried a score of 10 points, static was 25 points, with a five point bonus for kit or scratch built. There were 14 entries and12 flew.

By 10/30 the wind was easing so flying commenced, quite a number of the pilots used the cross strip to take off on and landed on the main strip and had to contend with some crosswind. Clive Butler put on spectacular display with some close rolls and loops with his 100inch span Gloster Gladiator powered by a 215cc Moki radial he also had a “dead Stick “ landing.

Geoff and Dave also judged the flying. This is the third event they have judged. They commented that the flying of the circuit was the deciding factor in the results. With flying finished, we adjourned to the Club-house for lunch, ably cooked by “Colleen's Canteen”. Colleen was kept very busy, not really knowing how many people she was catering for. After lunch the prize giving took place. 1st Michael Van Niekerk – his prize was a hard covered book on German Aircraft, donated by a Club Member. Equal second was Chris Rowe, his prize was a thermos. And Peter Ederle won a wire bender, also donated by a Club Member. Third was Clive Butler who won a donated Model Stand, probably a bit small for Clives Models? Bill Jennings donated a cake (he claims he cooked it) This was given to Tristan Price – see pic. Of red and white Tiger Moth. Next time we run a similar event we will have 2 rounds (The poor judges!).We did have three judges previously. Gavin was unable to assist at this event.

I must thank Bill Jennings, Bill Deal, Geoff Leverton, Dave Christian Colleen Tonks, and all the competitors for making it a great day. (also the camera guys)

Who is this person?
What did she do?

Pilot	Aircraft	Points
Mike Van Niekerk	P47 Thunder Bolt	68
Chris Rowe	Turbulent	66
Peter Ederle	A26 invader (bomber)	66
Clive Butler	Gloster Gladiator	64
Ken Lawson	Wilga	63
Steve Reece	Sting	63
Andrew McEntyre	Pawne	59
Mike Rutledge	Edge 540	57
Debbie Walters	Eindecker	57
Andrew Hutchison	Tiger Moth	56
Ricky Price	cessna 182	56
Tristan Price	Ultimate Bipe	53
Ian Gannon	Ansaldo Balilla	25

SCALE TORQUE CONT....

Scale Day at Kelly Field

Line up of models on Kelly field on the day

Daniel Walters, Corby Starlet, an Australian homebuilt

Peter Edlerle's A26 Twin engine Invader

Peter Ederle and Chris Rowe, with their prizes. Equal second

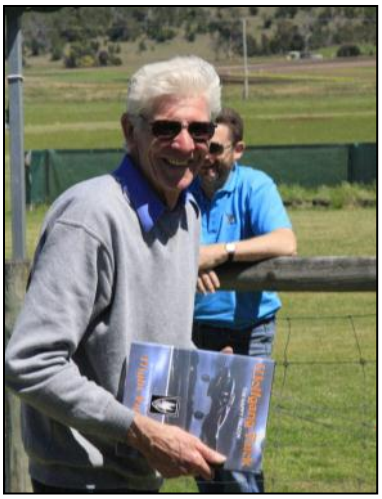
We must thank Geoff Leverton and Dave Christian our two judges, they had a tough time with so many full scale models that had to be judged as stand off scale models.

Running up Clive Butler's Gloster Gladiator
215cc Moki 5 cylinder radial

Debbie Walters with her WW1 Eindecker

SCALE TORQUE CONT....

Scale Day at Kelly Field continued...



Michael Van Niekerk receiving first prize a book donated by a club member

First place, P47 Thunderbird OS BGX 35cc

Whoops !

Bad Day at the office, Gravity takes over….

Tristan Price's Tiger Moth leaving the ground

Tristan Price's Tiger Moth about to bite the dust

Who did the "wing" nut up ?

FIELD & CIRCLE TORQUE

Bronze Wings

Dan Evans and Fly Baby,OS61FS, Tom Evans Parkzone SE5Aac Dan has been awarded his Bronze Wings for a second time. Previously gained his wings From Kevin Swiggs at LMAC Tom gained his wings with the SE5A. ac

Some other models in the club;

Garth Wilmot with his Trojan T28.
After his first successful flight

Graeme Scobie with his
Cessna 400 Corvalis. Not yet flown

CIRCLE TORQUE

Pilot :- Barry Champion
Model :- Unknown
Power :- Electric

Barry Champion's other electric control line model

Note the transmitter at his side

FEATURE TORQUE CONT FROM 1203

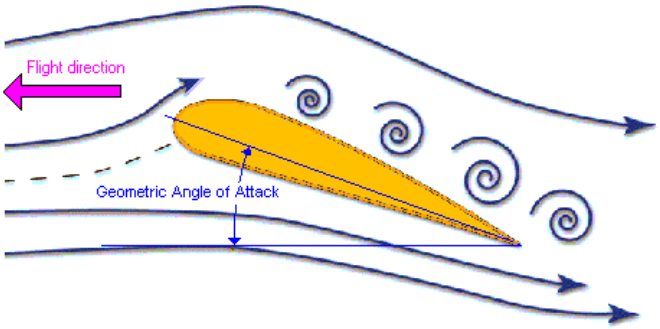
Spin and Stall *(Continued from 1204)*

http://adamone.rchomepage.com/index6.htm

One of the first questions a pilot might ask, when converting to a new aircraft type, is "What's the stall speed?" The reason for the enquiry is that usually, but not always, the approach speed chosen for landing is 1.3 times the stall speed.

Stall is an undesirable phenomenon in which the aircraft wings produce an increased air resistance and decreased lift, which may cause an aircraft to crash.

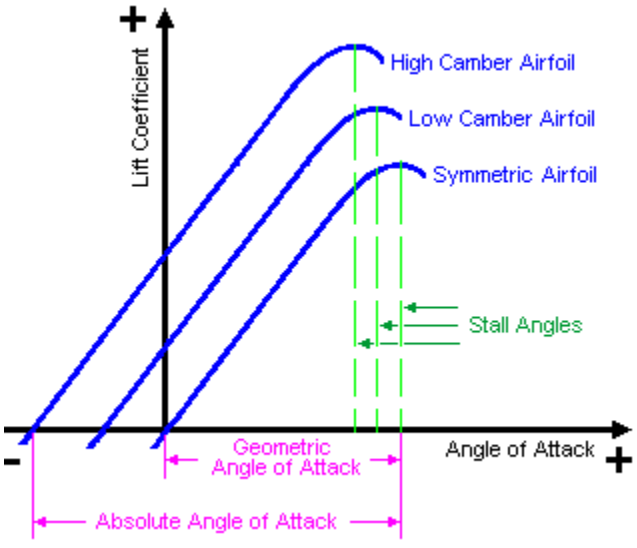
The stall occurs when the airflow separates from the upper wing surface. It happens when a plane is under too great an Angle of Attack (AoA). For light aircraft, without high-lift devices, the critical angle is usually around 16°. The picture below shows a stalled airfoil:



eometric Angle of Attack is the angle between the airfoil chord line and the direction of flight. The Angle of Attack is also known as Alpha.

The angle of attack measured relative to zero coefficient of lift is called the Absolute Angle of Attack (Absolute AoA). There's also the Pitch Angle, which is measured with respect to the horizon.

For symmetric airfoils the Absolute AoA is equal to the Geometric AoA, whereas for asymmetric (cambered) airfoils these two angles are different, since these airfoils still produce lift at zero Geometric Angle of Attack as shown below.



For airfoils of one family the symmetric airfoil stalls at a higher Geometric AoA compared with the cambered airfoil, however the cambered airfoil has higher lift coefficient and stalls at a higher Absolute AoA.

As mentioned in the chapter Forces in Flight, the lift force is proportional to the density of the air r, the square of the airspeed V, the type of airfoil and to the wing's area according to the formula:

Lift force = 0.5 * r * V2 * wing's lift coefficient * wing area

Since lift coefficient is proportional to the angle of attack, the lower the airspeed the higher the angle of attack has to be in order to produce the same lift.

Thus, stall may occur during take-off or landing, just when the airspeed is low: To keep altitude at low airspeed, the wing's lift coefficient has to increase, and if a non-experienced pilot tries to lift the aircraft's nose at a too low airspeed, it may exceed the critical angle of attack and stall occurs.

If you're flying near the stall speed and make a steep turn, the aircraft will stall. That's because, if the aircraft stalls for instance at 20 knots in straight level flight, it will stall at 28.2 knots in a 60 degree banked turn.

The rapid reduction in speed after passing the critical angle of attack means the wing is now unable to provide sufficient lift to totally balance weight and, in a normal stall, the aircraft starts to sink, but if one wing stalls before the other, that wing will drop, the plane falls out of the air. The ground waits below.

FEATURE TORQUE CONT.

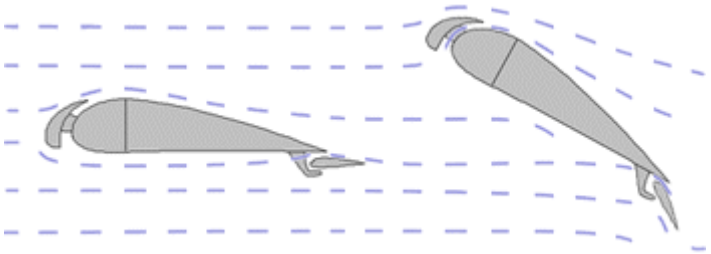
Stalls may also occur at high airspeeds. If at max airspeed and full throttle the pilot suddenly applies excessive up elevator, the aircraft will rotate upwards, however, due to aircraft's inertia, it may continue flying in the same direction but with the wings at an angle of attack that may exceed the stall angle.

See an example here Stalling at high-speed gives a more dramatic effect than at low speed. This because the strong propeller wash causes one of the wings to stall first that combined with the high speed produces a snaproll followed by a spiral dive. This happens very fast causing the aircraft to dive at full throttle and unless there's enough height for recovery, the crash will be inevitable.

An aircraft with relatively low wing loading has a lower stall speed. (wing loading is the aircraft's weight divided by the wing area) Since the airfoil also affects the stall speed and the max angle of attack, many aircraft are equipped with flaps (on the wing trailing edge), and some designs use slats (on the wing leading edge). Flaps increase the wing's lift coefficient, but the simple ones may reduce the stall angle. Slats, on the other hand, increase the stall angle.

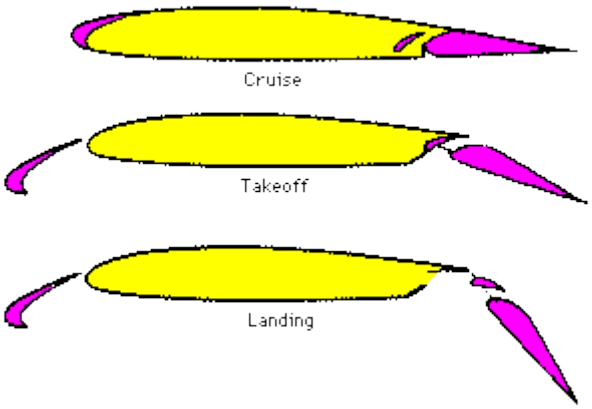
Aircraft that are designed for Short Take-Off and Landing (STOL) use slots on the wing's leading edge together with flaps on the trailing edge, which gives high lift coefficient and remarkable slow flying capabilities by allowing greater angle of attack without stalling.

The leading edge slots may prevent the stall up to approximately 30 deg. Angle of attack by picking up a lot of air from below, accelerating the air in the funnel shaped slot (venturi effect) and forcing the air around the leading edge onto the upper wing surface.

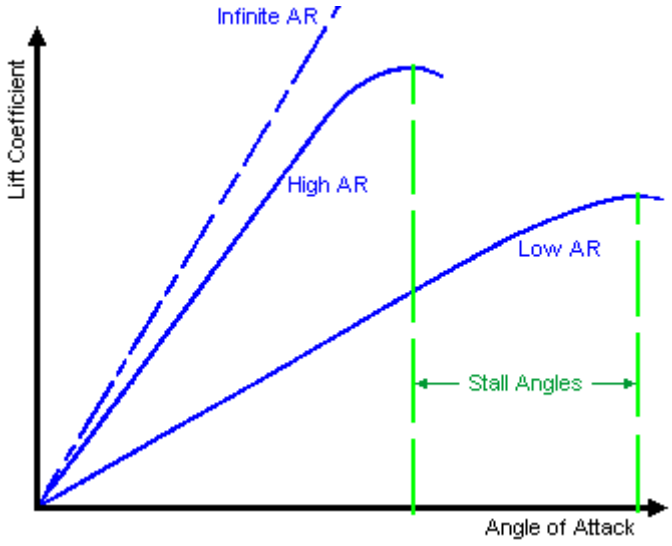


The disadvantage of the slots and flaps is that they produce higher drag. Since the high lift oefficient is only needed when flying slowly (take-off, initial climb, final approach and landing) some designs use retractable devices, which closes at higher speeds to reduce drag.

Such devices are seldom used in model aircraft (especially the smaller ones), mainly due to its complexity and also the increasing of wing loading, which may counter-act the increased lift obtained.



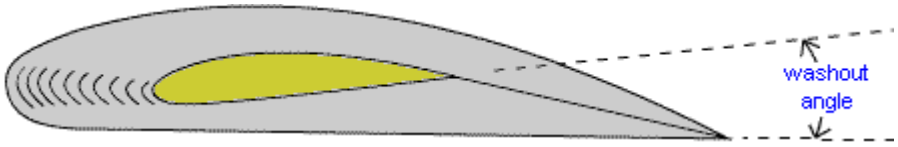
The wing's aspect ratio (AR) also affects the overall lif coefficient of the wing. For a given Re, the wing with higher AR (with long wingspan and small chord) reaches higher lift coefficient, but stalls at a lower angle of attack than the wing with low AR as shown below:



However, for a given wing area, increasing the aspect ratio may result in a too small wing chord with a too low Re number, which may significantly reduce the lift coefficient. This is likely to occur with small indoor planes.

Another method to improve an aircraft's stall characteristics is by using wing washout, which refers to wings designed so that the outboard sections have a lower angle of attack than the inboard sections in all flight conditions.

FEATURE TORQUE CONT.



The outboard sections (toward the wing tips) will reach the stalling angle after the inboard sections, thus allowing effective aileron control as the stall progresses. This is usually achieved by building a twist into the wing structure or by using a different airfoil in the outboard section. A similar effect is achieved by the use of flaps. The aileron drag is a further factor that may cause an aircraft to stall.

When the pilot applies aileron to roll upright during low speed, the downward movement of the aileron on the lower wing might take an angle on that part of the wing past the critical stall angle. Thus that section of wing, rather than increasing lift and making the wing rise, will stall, lose lift and the aircraft instead of straightening up, will roll into a steeper bank and descend quickly.

Also the wing with the down aileron often produces a larger drag, which may create a yaw motion in the opposite direction of the roll. This yaw motion partially counteracts the desired roll motion and is called the adverse yaw.

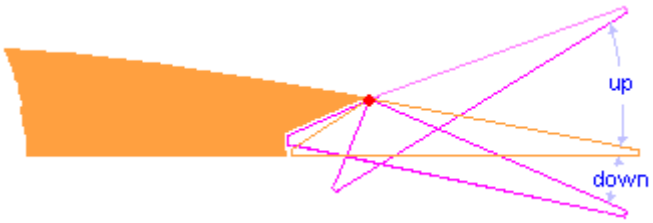
Following configurations are often used to reduce aileron drag:

- Differential ailerons where the down-going aileron moves through a smaller angle than the up-going.
- Frise ailerons, where the leading edge of the up-going aileron protrudes below the wing's under surface, increasing the drag on the down-going wing.
- And the wing washout.

Stall due to aileron drag is more likely to occur with flat bottom wings. Since differential ailerons will have the opposite effect when flying inverted, some aircraft with symmetrical airfoils designed for aerobatics don't use this system.

The picture below illustrates an example of a Frise aileron combined with differential up/down movement.

Another factor that affects the aircraft's stall characteristics is the location of its centre of gravity CG. A tail-heavy aircraft is likely to be more unstable and susceptible to stall at low speed, e. g. during the landing approach.



Downwind stall:

For instance, a powered plane flying north with airspeed of 30 knots against a 30 knots headwind has zero ground speed. If you turn 90 deg. left (west), the plane's airspeed still is 30 knots but is now drifting 30 knots to the south resulting in 42 knots ground speed to the southwest. If the plane keeps turning south, the drift due to the wind is still 30 knots but now the ground speed becomes 30+30 = 60 knots, while the airspeed still is 30 knots.

The pilot on the ground will see the ground speed but not the airspeed, and since the plane seems to move much faster flying downwind, the pilot may instinctively slow down the plane below the stall speed. This results in a pilot-induced stall due to the optical illusion of the plane's higher ground speed when flying downwind.

Recovering from a stall:

In order to recover from a stall, the pilot has to reduce the angle of attack back to a low value. Despite the aircraft is already falling toward the ground, the pilot has to push the stick forward to get the nose even further down. This reduces the angle of attack and the drag, which increases the speed. After the aircraft gained speed and the airflow incidence on the wing becomes favourable, the pilot may pull back on his stick to increase the angle of attack again (within allowable range) restoring the lift. Since recovering from a stall involves some loss of height, the stall is most dangerous at low altitudes.

Engine power can help reduce the loss of height, by increasing the velocity more quickly and also by helping to reattach the flow over the wing. How difficult it is to recover from a stall depends on the plane. Some full-size aircraft that are difficult to recover have stick shakers: the shaking stick alerts the pilot that a stall is imminent.

FEATURE TORQUE CONT.

Spin

A worse version of a stall is called spin, in which the plane spirals down. A stall can develop into a spin through the exertion of a sidewise moment. Depending on the plane, (and where its CG is located) it may be more difficult or impossible to recover from a spin. Recovery requires good efficiency from the tail surfaces of the plane; typically recovery involves the use of the rudder to stop the spinning motion, in addition to the elevator to break the stall. However the wings might block the airflow to the tail.

If the centre of gravity of the plane is too far back, it tends to make recovery much more difficult. Another circumstance that may cause loss of control is when a hinged control surface starts to flutter. Such flutter is harmless if it just vibrates slightly at certain airspeed (possibly giving a kind of buzzing sound), but ceases as soon as the airspeed drops.

In some cases however, the flutter increases rapidly so that the model is no longer controllable. The pilot may not be aware of the cause and suspect radio interference instead. To reduce the flutter, the control linkages should not be loosely fitted and the push rods should be stiff.

Long unbraced push rods can create flutter as vibration whips them around. In some difficult cases the control surface has to be balanced, so that its centre

of mass (gravity) is ahead of the hinge line. It should be located at about 60-65% of the length of the control surface from its inner end:

TECH TORQUE (EXTRA SPECIAL)

When I saw this image on the net I thought of the cake the president of the Melbourne Model "Helicopter" club for the clubs 25th birthday. He made a Helicopter. It included strobes etc.

But infact the plane might make a nice Christmas gift for a child or even a very young at heart adult (Ha ha ha ha Ed)

I am sure I will not need to include drawing for this little beauty. What a nice cake for a kid or even if you want to you could make it out of wood (Not the cake, although that would be one way of keeping it for next year.

Perhaps you could conceder one of the following;

- A sponge Spitfire
- Marzipan *Mechasmit*
- Z… Zero (use your imagination as I cant can't think of anything maybe zinc (ha ha ha Ed)

For more information visit the website at:

http://www.craftsmanspace.com/free-projects/free-kids-toy-plans.html

LUNCH TORQUE

Xmas Dinner and Swap meet

Sunday 2/12/2012.

There were quite a few bargains on offer in the shed with various aircraft and modelling gear on offer. Ricky Price from the HRCF club purchased a large low wing sports model powered by a Super Tigre 25cc probably the bargain of the day. Some of the gear was donated and the sales went to club funds.

Jack and Colleen Tonks spent Saturday decorating the club rooms and laying out the tables and chairs for Sunday. Tomboys were definitely off, no flying took place as it was very gusty.

We were called to lunch and lined up for our meals, Colleen was ably assisted by the ladies in serving up the meals. Thirty one people attended including Fred Willis from LMAC.

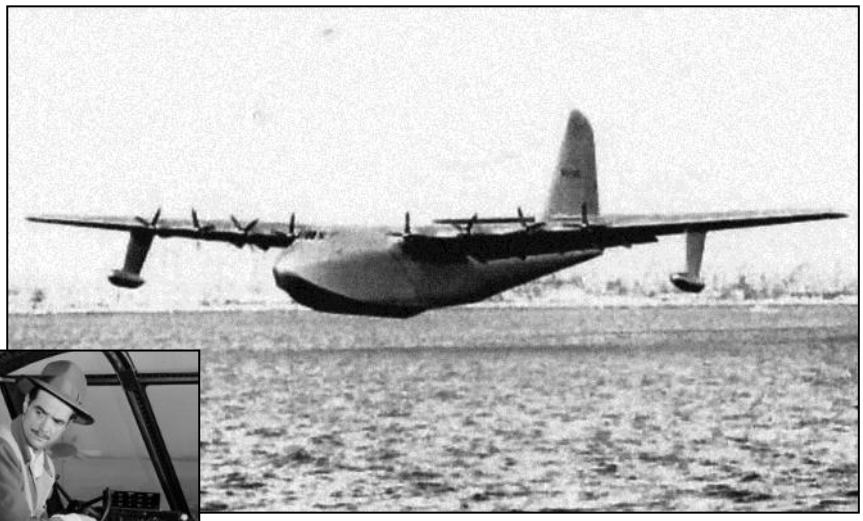
It was a great social day, after lunch people sat around and chatted, a great time was had by all.
Total funds raised was $375 this also included the sale of some donated items.
Thanks must go to Colleen and Jack for putting on an excellent spread. (and the Sunday BBQ's)

HISTORY TORQUES

Spruce Goose

At the height of the war in the Atlantic, U-Boats were strangling England of supplies. It was extraordinarily challenging to move troops and equipment to England to help with the build-up. Thus, in 1942, a developmental contract was awarded to Hughes Aircraft and the shipbuilder Henry Kaiser to develop an aerial supply ship that could move one M4 Sherman Tank or as many as 750 soldiers in a single flight with all their equipment. It was the dream of strategists to be able to rapidly deploy entire divisions of ground troops in a single day — or maybe two — anywhere in the world.

A fleet of H-4 Hercules aircraft seemed to be just the right formula.



Above: Spruce Goose

Left: Howard Hughes in the cockpit

http://fly.historicwings.com/2012/11/flight-of-the-spruce-goose/

FUNNY TORQUE

Funny aircraft announcements

On a Continental flight with a very "senior" flight attendant crew, the pilot said, "Ladies and gentlemen, we've reached cruising altitude and will be turning down the cabin lights. This is for your comfort and to enhance the appearance of your flight attendants."

"Thank you for flying Delta Business Express. We hope you enjoyed giving us the business as much as we enjoyed taking you for a ride."

Source:- http://mistyhorizon2003.hubpages.com/hub/Funny-but-true--Airline-Quotes-to-Make-you-Laugh

Date	Event
Sunday 3/2/2013	Glider (Format TBA)
Sunday 24/2/2013	Tomboys
Saturday 13/4/2013	Limited Aerobatics
TBA	Stand off Scale
TBA - email	Control-line
Saturday 2/3/2013 @ Panshangar	Aerobatic State Championships
Sunday 3/3/2013 (possibly) @ Panshangar	Aerobatic State Championships

EDITOR'S FINAL WORD

It has been a great pleasure and with interest that I have had the opportunity to be the club's editor, alas for such a short period of time. As some of you no doubt are aware I have relocated to Melbourne in search of employment.

It is with great thought and deep sorrow that I feel I can no longer give either my full attention or maintain suitable contact with the contributors to the publication as I have been able too in the past; distance has made it difficult to continue with the role. And hereby announce that I will no longer be editing the magazine.

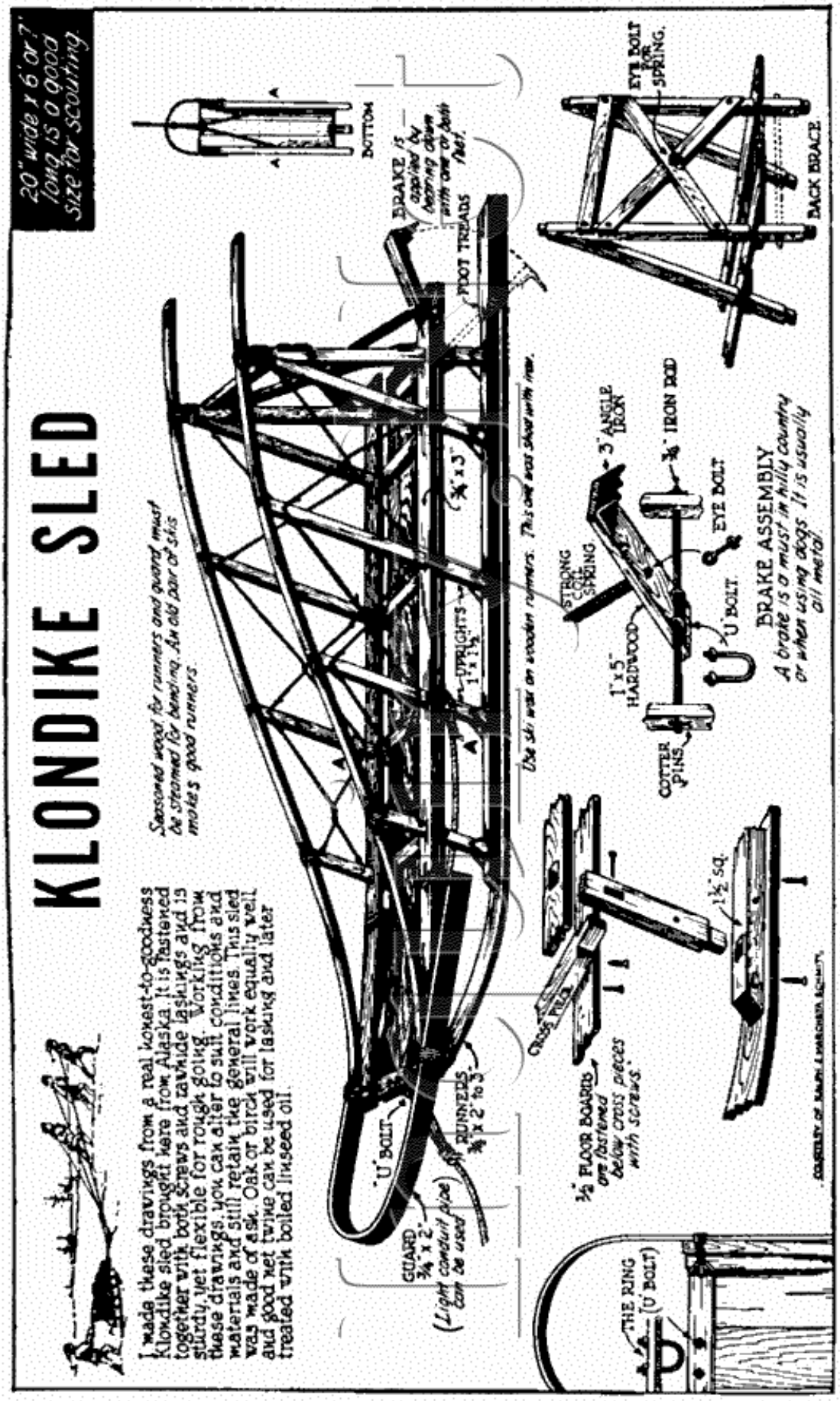
I have given Tony Gray the previous and current edition on disc. I urge members to consider the role of editor as it is a really good way of keeping up to date with club events and news of the club. I look forward to the continuation of the high standard of the publication. And watch with great interest the development of the magazine under the stewardship of the next editor in Chief :-) Thanks to all the club members that have helped make it the publication what it is today.

Happy flying everyone, Graeme (resigning Editor)

PLAN TORQUE

Build you own sleigh for Christmas

http://www.inquiry.net/images/hunt_klondike.gif



COCKPIT TORQUE CONT...

BUDDY CHECK

How many times have you built a new model, taken it out for its' maiden flight only to find you missed something. Ailerons are reversed, the centre of gravity is too far back or one of your batteries has not been charged.

It has probably happened to us all. In the building fog we change motors, rewire servos and change linkages (amongst others) after we have trimmed and balanced the model. We become blind to the changes in the final rush to get out and maiden the model.

It is important to get another flyer to run fresh eyes over the model before you fly. It doesn't have to be an instructor or gold wings flyer, but should be someone with some experience.

Get them to look over the model to make sure you won't have any nasty surprises.

An extensive check list can be found on the MAAA website. But make sure that you run through the following checks as a minimum.

Centre of Gravity.

Control surface hinges and gaps.

Control surface movement is correct. Eg. Aileron moves in the correct direction.

Servo mounting is correct and servo arm is secured to servo.

Pushrods/cables and links.

Propeller secure and undamaged

Fail safe set correctly.

Battery charge in both receiver and transmitter sufficient

Then check the centre of gravity again before you do a RANGE CHECK.

PUZZLING TORQUE

Nance Bird Watson

http://www.ctie.monash.edu.au/hargrave/nancy_bird_walton_bio.html