

July
2017

Flight Lines



THE NEW CLASS OF PRO CLASS

THE DX20

The smooth precision of machined-aluminum, quad-bearing gimbals. The natural comfort of leather hand grips. The sleek contours of a carbon fiber front case. And that's before you even turn it on. Power it up and the Spektrum™ DX20 gives you the speed and security of DSMX® technology along with a combination of pro-class features and functions you can't find in any other transmitter.

- 20 Fully Proportional Channels
- Airplane, Heli, Sailplane and Multi-Rotor Programming
- Voice Alerts, 250-Model Memory, Wireless Trainer Link
- Independent, Multi-Engine Control for Airplanes
- In-Flight Trimming of Rates, Expo and Mixes
- 4000mAh LiPo Battery

And that's just the beginning.



This is the new standard in pro-class precision, power and refinement - go to spektrumrc.com right now for complete details and to find a retailer near you.

- Includes
- Aluminum Dual Air Transmitter Stand Up Case
 - AR9020-9Channel Receiver

RRP\$2299



VISIT

Visit your local dealer

CLICK

www.hotrc.co.nz

CALL

07 850 9477

SERIOUS FUN.

Available from your local specialist RC Store or phone 0800 62 62 63 for your nearest dealer
Distributed by H.O.T. LTD, Hamilton, New Zealand. www.hotrc.co.nz, proud sponsors of many RC events

Cover: The cheap seats

FLIGHT LINES

HAMILTON MODEL AERO CLUB INC.

July 2017

www.hamiltonmac.org.nz

PATRON

Graeme Bradley

PRESIDENT	Grant Finlay	027-273-7461
VICE PRESIDENT	Gordon Meads	021-125-2911
SECRETARY	Alan Rowson	07-843-3889
TREASURER	Alan Rowson	021-025-93002
CLUB CAPTAIN	Chris Tynan	022-353-9231
BULLETIN Ed.	Mikey Wilson	mikeywilson@gmail.com

COMMITTEE:

Mike Sutton	
Lyndon Perry	021-2588506
Sel Melville	027-4823459
Mike Wilson	021-1689243

WEB SITE	Mike Wilson	mikeywilson@gmail.com
CATERER	Collen Tynan	

CLUB NIGHT	Wednesday 12 th July	7.30 pm
VENUE	Beerescourt Bowling Club 68a Maeroa Road - Hamilton	

Club Night Theme: The Annual Quiz!

Club flying days: Float Planes & Cambridge Fun Fly

Bulletin Printing *Compliments of Gallagher*

Presidents Report

Grant

Well this past month I can honestly say I have completed another “first for me” in this game of model aviation. Mind you, with such a variety of activities available in this hobby, finding a new “first” for yourself isn’t really that difficult if you think of all the



possibilities and potential flying you could take part in. Anyway, my first was to fly Jose’s X15 Glider mentioned in last month’s bulletin through an actual ‘Rocket Powered’ flight. The model was dropped from the launch plane and once I was able to clearly orientate on it, the rocket was fired and the model shot back up another 100ft or so in a 2 second burn with smoke billowing out the back, very exciting for a few brief seconds. A second flight was as equally exciting and somewhat less intimidating than the first. Rocket Pilot Wings...Tick.

As I write this, I’ve just returned from the field having ventured out for the Scale day club event. The weather didn’t look all that promising, but Gordon and I are ever hopeful. None the less, what greeted me when I got there was far more distressing than the weather, even though it was hosing down as I arrived. Unfortunately the Cows had been grazing in the paddock overnight and somehow the herd had managed to break through the Electric fence and found their way into the runway compound. Once in, they appear to have camped the night on the runway having a bit of a party. Needless to say, just like a bunch of Dunedin Uni students, they made a right fair mess of things. As the peat is very soft, their hooves easily punch through the surface and subsequently the runway will be out of action for a little while as a result.

We can’t say how they got through the fence, the farm staff checked the fences were up and working when they put the cows in the paddock, so we can only assume they broke in, possibly dislodging one of the fence pole handles. Anyway, what’s done is

done, and we will work to get the field back up and useable as quickly as we can. However the weather will play a big part in the reparation work, so you may want to take a trip to one of the Model Shops for an extra winter project in the mean time! We will obviously need a working bee or two to get things sorted once the ground has been rolled, we will let you know when that happens. On the positive side, we have been sited on Reekers Farm for over thirteen years now and this is the first really serious break in we have had in that time. So when put in perspective, I think we have been really, really lucky up until now and fingers crossed for another 13 years or more without drama. There's no sense in getting upset, what's done is done...but if we don't win the America's cup....well that's another matter!!!



Grant with new tow plane

Last months Club night was bit of a mixture of Multi Media, club event reports and other goings on. This was followed by Jose Cerezo giving us an excellent presentation on his 'obsession' with the North American X15 Rocket plane including his past efforts when he lived in his home country of Spain. Jose & his son

together created an awesome short video combining footage from his flying efforts with a previous X15 model in Spain, recent flights here at HMAAC and all mixed in with archive footage from documentaries of the real aircraft. Fantastic work, hopefully it might even make it onto YouTube?



Everyone else is also welcome to put any presentations together they feel would be of interest.

Following Jose's production, I started a new segment where names were drawn out of a hat for members to come forward and give a couple of minutes rundown on their background in modeling, what got them interested, how many models they'd owned and a few other pertinent questions. First up was myself as an example, followed by Gordon, Ken Foster who had some interesting war time experiences in London, Chris Tynan & Alan Rowson. I got some positive feedback on this following the meeting, so at some point we may include another short segment in a Club Night for some others to introduce themselves.

This months club night is the one to get your 'Thinking Caps' on, study up on your General Aviation knowledge and above all else figure out how to cheat without being caught. Yes that's right, it's that time of the year when our mighty 'Mikey the Quiz Master' dishes out the hard questions in our Annual HMAQ Quiz nite. As one member put it to me recently...the only problem I have with quiz nite is I don't know anything about Aircraft...I suggested he joined Brad, Bogan or Jacks teams....they don't know anything either....yeah right!!! So make sure you keep the night free as it's always the biggest and loudest laugh session of the year.

July's club flying Day will be our first Float Plane event for 2017 on the ever popular Lake D (Kainui) at Horotiu on Sunday 16th July from 9am. The weather is usually pretty calm around that time of the year, so here's hoping for a mirror finish water surface and plenty of splash and dash. As always, if it floats, fly it, and if it sinks...you forgot the floats!



3 wise? men

Also this month, after a quick word with Chris on the Cambridge MAC Club executive, they have offered to hold a Fun Fly event on Sunday the 23rd July at their flying field. This is in direct response to being

told that our field has been damaged and may still be out of action at that time. So thank you Cambridge for coming to our rescue and helping keep your fellow modellers airborne. I'm sure there will be a great response on the day even if Hamilton is back up and running. There has also been a rain date set for the following Sunday if it really turns to custard on the 23rd.



Last weekend a good number of HMAc guys found their way over to the Tauranga Model clubs Annual Auction. As usual we all brought home some bargains, some of which we hope to see flying

sometime soon plus of course some stuff we didn't really need. Anyway, it was a good days entertainment with Frazer and Mike Briggs doing an excellent Job as the Auctioneers. Well done to the Tauranga club for continuing the Auction tradition.

Well that's all I have for you this month. Obviously the next couple or more weeks won't see much flying action, but it will give you more time for building, which at this time of year might be a good thing as the colder weather sets in. Keep an eye on our Club Web Page for updates on the field condition and any Notices of proposed working bee's. There will also be notifications loaded on the Clubs Face Book page (which you can also access off the Web page)

So finally as always, remember "Safe construction is No Accident"

Captains Report

Chris

The saying goes "Takeoffs are optional landings are compulsory". Well coming down is compulsory, whether it's on your terms will depend if the motor is still running, the radio gear is still sending and receiving a signal or if you can land the plane successfully, if so bonus you can roll the dice again.



I really like WW1 & WW2 war birds and they seem to be some of the most challenging planes to land. This is probably for a number of reasons, majority are tail draggers, the undercarriage is not too far forward of the CG so they like to nose over, some like Spitfires and ME 109's have a narrow track to complicate things further, then there is the wing design that seems to have a major influence, P47 are a much more forgiving plane than P51 apparently, then there is the weight, big war birds with dual receiver batteries, ignition battery, metal servos, often include flap servos, retracts, sometimes with retracting tail wheel and then a big engine to drag all that weight around. All this adds up to a pretty cool looking brick, and finding the right speed to keep that brick "flying" when that strip looks shorter than it did when you took off adds to the nerves you had just before it left the ground!

Ok so how do you "practise" landing these awesome looking planes when retracts tend not to survive anything but a near perfect landing?

I wondered if strapping a brick to the top of my low wing trainer would help my landing skills, but a bad landing would probably break the thing in half and having a trike undercarriage would not really help the cause. Not to mention it could be a little dangerous too if it came off mid flight!

Not to be too hard on myself I can land these things now and again without knocking the wheels off, more often when no one is around to see the perfect landings.



I'm not sure if absence from flying for a week or three or just a plain lack of concentration is to blame, or maybe the good landings are just a run of lucky flukes??

I would however like to improve my success rate so I did a bit of research and it appears like most things on the internet everyone has their own expert advice and no two opinions are the same.

In fairness, as stated above no two planes fly and land the same so I guess the principle of landing is similar but the technique for each plane may be quite different.

So after all this contemplation what is the answer to a good landing?

Obviously good throttle control has a fair bit to do with it, but get some good advice from someone who can land your type of plane repeatedly and practice, practice, practice, and if the cost of new retracts does not influence a speedy learning curve, you can always belly land with wheels up!

Cambridge Soaring Series

Wayne

Cambridge MAC will host a series of soaring competitions and sport flying during the 2017/18 season, open to any member of MFNZ. Entrance to the site is to the left off Maungakawa Rd about 200m past the intersection with Fencourt Rd. Proceed through a farm yard onto a farm track that leads to the flying site which is about 400m NE from the entrance.

The events will be held on Saturdays, to avoid conflicts with club flying. The dates – subject to confirmation – are 7 October 2017, 25 November 2017, 20 January 2018, 3 March 2018, and 5 May 2018. The flying period each day is 10.00 am – 4.00 pm.

Five competition classes will be flown at each event according to rules simplified a little from those published by the Soaring SIG. A self-entry score card system will be used – as in Vintage SIG competitions.

Sport flying with electric and bungee/winch launched gliders, and electric vintage models is also welcomed, but there will be no aero-tow or IC models.

The CD for each event will be either Wayne Cartwright (wcartwright@vodafone.co.nz , 022 153 4679) or Dave Crook (chloecat@xtra.co.nz, 021 103 7854). Bill Derenzy (Tauranga MAC) has undertaken to provide the bungee and winch equipment.

Cambridge MAC requests a registration fee of \$5 at each event from people who are not members of the club.

The competition classes are:

ALES 123: Radian

- Model is a Radian
- ALD is set to cut off at 123m (400ft) AGL or 30 seconds, whichever is first.
- Time of launch for each flight is chosen by the contestant.
- Overall score is sum of three flights timed from launch and scored at one point per second up to 360, with one point deducted for each second over 360, plus 50 points if model nose is within 7m of spot and 25 points if it within 15m.



ALES 123: Unrestricted Design 2M

- Model is any design with maximum wingspan 2 meters.
- ALD is set to cut off at 123m (400ft) AGL or 30 seconds, whichever is first.
- Time of launch for each flight is chosen by the contestant.
- Overall score is sum of three flights timed from launch and scored at one point per second up to 360, with one point deducted for each second over 360, plus 50 points if model nose is within 7m of spot and 25 points if it within 15m.

- Scores from Radian ALES 123 class may also count in this class, or Radians may be flown in this class separately, at discretion of contestant.

ALES 200: Open

- Model is any design.
- ALD is set to cut off at 200m (650 ft) AGL or 30 seconds, whichever is first.
- Time of launch for each flight is chosen by the contestant.
- Overall score is sum of three flights timed from launch and scored at one point per second up to 600, with one point deducted for each second over 600, plus 50 points if model nose is within 7m of spot and 25 points if it within 15m.

Bungee/Winch: 2M

- Model is any Rudder/Elevator/Spoiler design with maximum wingspan 2 meters and with built-up (primarily wooden) wings and horizontal tail. (This rule is to encourage simple non-composite sports gliders.)
- Bungee or winch complies with MFNZ Soaring Rule 2.2.2 (300 meter winch line option).
- Overall score is sum of three flights timed from release of line and scored at one point per second up to 360, with one point deducted for each second over 360, plus 50 points if model nose is within 7m of spot and 25 points if it within 15m.
- Time of launch for each flight is chosen by the contestant.

Bungee/Winch: Open

- Model is any design.
- Time of launch for each flight is chosen by the contestant.
- Bungee or winch complies with MFNZ Soaring Rule 2.2.2 (300 meter winch line option).
- Overall score is sum of three flights timed from launch and scored at one point per second up to 600, with one point deducted for each second over 600, plus 50 points if model nose is within 7m of spot and 25 points if it within 15m.

Field vs. Cows

Here are some pic's of the flying field after the cows spent the night on it.

From everything we know it looks like just one of those things! Maybe the fence wire is getting a bit tired in places especially where it's been left arcing on the ground!



Building the same plane at a different scale

A club member asked me a question about a plan he had downloaded. The plan didn't have any size dimensions on it, so he didn't know how big to build the airplane. I've never had this



problem myself because although I have a very large collection of plans, they are all on paper.

Traditionally, model plans are drawn on paper at a 1:1 scale, meaning what you see on the paper is the exact size of the finished model. You don't have

to wonder how big it's supposed to be because it's right there in front of you. Some builders make a copy of the plan specifically for cutting out parts, then stick these parts onto the balsa wood with contact cement for easier cutting. Material thickness, engine size, control throw, and other data will be noted on the plans as needed. In fact, on a traditional paper plan the wood, landing gear wire, wheels, engine, and all other parts are drawn to their exact size, so even if something isn't specifically labeled, you should be able to measure it on the plan to determine its intended size.

Now that we have the opportunity to transmit plans electronically, and a lot of plans are generated electronically, a less experienced builder has to make sure that all of the details including wingspan, material thickness, etc, are included because a lot of designers



don't do a good job of drawing the exact sizes on the plans. Fortunately there are some general rules of thumb that you pick up after a few building projects, which means you should be able to build a plane in whatever size you want and still give it the right amount of structural strength without adding too much weight. Before we had scanners and large format printers available, a balsa builder would have to build the plane at whatever size it was on the paper, or design a plane of the desired size himself. Now you can go to an office store and run a paper plan through a large format scanner, then print it out at any new size. I've reprinted the famous 36" wingspan Q-Tee and built it at 24", and I've reduced the RCM Senior Telemaster from 96" to three different, smaller sizes. I also built the RCM Simple T-Craft for a customer in .40 size, blown up from the original .25 size. These are not very drastic changes in scale, so I simply used whatever size material was closest to the actual size on the resized drawing. In other words, where the Q-Tee had $\frac{3}{32}$ " balsa I used $\frac{1}{16}$. Mathematically, $\frac{1}{8}$ " balsa should have been reduced to $\frac{1}{12}$, as this is $\frac{2}{3}$ the original size. $\frac{1}{12}$ is the same as $\frac{3}{36}$, which is extremely close to $\frac{3}{32}$, so I used $\frac{3}{32}$. In other words,

when reducing to 2/3 of original size, I simply substituted wood one standard size smaller. The Telemaster was easier because all materials were half of the original size and everything lined up on the plan perfectly.

Cessna Aerobat: Ryan Cadwallader



At the smaller scale the Q-Tee was almost perfect, except the horizontal stabilizer. The original plan shows this part made of 3/16" sticks, which I reduced to 1/8". It turns out that tiny sticks don't scale as well as we might want them to. The stabilizer was very fragile and suffered damage during a landing. A solid sheet of lightweight 1/8 balsa works a lot better in this case. In the case of the Telemaster, the original design has lots and lots of sticks, and they are of sufficient size that the scaled down model was still very well built, even though the reduction was more drastic than the Q-Tee.

When you resize a plan it's always a good idea to check details such as these to make sure you're not under-building anything. On the other hand, .40 and .60 size planes frequently have lots of hardwood in the landing gear and engine areas, which, if built as drawn, can lead to excessive weight at a smaller

size. When you shrink a plane very drastically, it's usually best to simplify and build things out of thin sheet wood to reduce weight. The reason you can get away with this is because of a subtle effect of scaling which can be easily explained with an analogy. Imagine a cube that's one inch long on each side. It has a volume of 1 cubic inch and a surface area of 6 square inches, for a volume to surface ratio of 1 to 6. Now imagine a cube with a 2 inch length per side. It has a volume of 8 cubic inches and a surface area of 24 square inches. The volume to surface ratio is 1 to 3. Think of volume in this case as mass and landing loads, and surface area as a general gauge of airplane size. As a result, the smaller the plane is, the less strength you need for landing, crashing, or even engine mounting. Larger planes need more strength in the firewall, wing spars and landing gear supports.

What this means to you when you decide to change the size of an



existing design, or one that has a general outline but is sparse on details, is that you can usually get away with changing the size by 20 to 40

percent without worrying too much. But if you resize a very small plane to be very large, or vice versa, you'll probably want to redesign the wing spars, firewall, and landing gear mounts accordingly. The best way to do this, as always, is to look at well established designs, such as popular trainer or sport flying kits, or popular plans, and use similar sizes and thicknesses in your plane. After you build a few planes in different sizes you'll find that you're able to decide how strong to build these key points instinctively.

Coming Events

Jul 2017

- [HMAC Club Night Meeting - Our Highly Rated "Annual Quiz Nite"](#)
July 12, 2017 7:30 pm - @ Beerescourt Bowling Club Club Rooms, 68A Maeroa Road (behind the tennis pavilion)
- [HMAC Float Plane Day @ Lake D \(Kainui\)](#)
July 16, 2017 9:00 am - @ Lake Kainui (D), Lake Road, Horsham Downs.
- [Cambridge MAC Fun Fly \(Helping keep HMAC in the air\) - \(\\$5 pilot landing donation applies\)](#)
July 23, 2017 - @ Cambridge MAC, 191Maungakawa Road (Opposite letter box 188), Rain date Sunday 30th July

Aug 2017

- [HMAC Club Night Meeting](#)
August 9, 2017 7:30 pm - @ Beerescourt Bowling Club Club Rooms, 68A Maeroa Road (behind the tennis pavilion)
- [RC Soaring F3B Competition \(Waikato Champs\)](#)
August 26, 2017 - August 27, 2017 @ Matamata Soaring Site (confirm location with Organisers)

Flight Lines Deadlines 2017

August Bulletin – 26 th July

**For further up to date event info please visit:
<http://www.hamiltonmac.org.nz/>**

Official newsletter of the
Hamilton Model Aero Club Inc.
P.O. Box 1333, Hamilton

Website: www.hamiltonmac.org.nz