

Auckland Soar

Radio Control Soaring Club

Issue Number 163

July - August 2011



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www.aucklandsoar.org.nz

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Editor's Notes

On the Cover : A electric mass launch by three North Shore MAC entrants at Thermal Thaw 2011.

Hi everyone,

Firstly, a welcome and two farewells

Welcome to new member:

Arijen Visser - hope your enjoy flying with us!

Farewells to:

Cai Jurasik who is off to Sao Paulo in Brazil

Les Stockley and family who are relocating to Perth in the next month or so.

You will be missed. Keep in touch!

Some changes in the Club Committee at the recent AGM.

Les Stockley did not seek re-election and Dave Crook has now taken over the role of President.

(See Dave's Prez Sez on Page 5)

As is usual this time of year, not much has been happening on the field or the slope.

Highlight of the last month or so has been the Thermal Thaw 2011, which had a bumper turnout.

The main reason for this was it was decided sometime ago to, like Soarfest, have a 'Sportsman' class as well as an 'Open' class to allow those without moulded models, or those flying electric models to participate.

The concept certainly worked as we had only 6 in the Open class, but 12 in the Sportsman class!

(See pages 6~10)

Some recent talk on the Soaring Group about the lack of entrants to major contests in the South.

All I can say is the way AucklandSoar has approached the way contests are run has proven very successful and we will continue with the format of having two classes at each major event we run. It just seems (well, to me anyway) totally ridiculous to not allow anyone with any type of model or skill level the opportunity to fly in a contest.

After all, we all had to start somewhere and everyone in the Sportsman class at the Thermal Thaw enjoyed themselves, which, surely, is the name of the game here?

Thanks to those that supplied copy for this issue. Notably incoming President Dave Crook together with Laurie Jackson. Like I keep saying, any copy helps to make my job easier.

Well, that's my lot for another two months or so


Safe flying,

Brett

Coming Events

AS - AucklandSoar championship points

July 2011

3rd	Thermal J (2,4,6,8,10)		Ambury
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10th	Fly for Fun		Ambury
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17th	Ambury Closed for lambing		
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24th	Ambury Closed for lambing		
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31st	Ambury Closed for lambing		
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August 2011

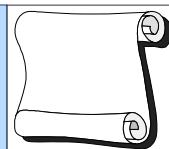
7th	Ambury Closed for lambing		
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14th	Ambury Closed for lambing		
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21st	Electric Fun Fly		Ambury
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28th	Thermal J (2,4,6,8,10)		Ambury
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Club Notices



Ambury Lambing dates for 2011

The farm staff have advised us that Ambury will be unavailable to us due to lambing from :

14th July to 14th August 2011

FLYING AT AMBURY

As we don't want to get on the wrong side of the Rangers.... remember:
If we do get that perfect day and you feel the need to have a fly; you get to Ambury and there are no people flying or sheep on our usual field **Do NOT** just wander in and fly.
Please, take the time to find one of the Rangers and seek their permission to fly on the field.

Also do Not just drive onto the field without seeking permission to do so first.
(The park staff can get a bit annoyed if you just drive on in - as the field can be quite soft underfoot - especially over the winter months - and cars do cut it up a fair bit.
We have a good relationship with the Park Rangers - let's not ruin it.

Also Note - Ambury is now a non-smoking park!

Field Safety

Just remember to get another person to check that model over Before you fly, even if you have flown it last week.
Also, don't just walk a couple of paces into the field or away from the cars and just throw the model off.
Most Sunday's there are quite large numbers of people in the park including children - so you need to ensure if anything were to go wrong that you are a sufficient distance away from them for safety.
Our tenure of the site depends on our good safety record - lets not put it at risk!
To quote from an old TV program "Let's be careful out there!"

Pegboard and Spots

Yes, we know most people have now converted to 2.4 GHz gear, but there are still a few around that haven't.
So if you are still using 27, 35 or 40 MHz gear - why not just get the pegboard out before you fly, just in case!
If you are First to arrive at the field - why not also just wander over to the shed and get the pegboard out.
There have been several occasions lately when several members have been flying and no pegboard was in use!
Please make an effort - for safety sake, if nothing else!
Same deal at the end of the day - how about putting the pegboard / landing spots or other equipment used during the day Back in the shed.

Let's all help with this and not just leave it to the same people all the time!



Prez Sez - Dave Crook



First off, many thanks to Les Stockley for fulfilling the role of president for the last four years or so. While the task in hand isn't an onerous one it still has to be done.

For those not in the know I had the role of president for a number of years prior to Les so I guess for me it's all about jumping back into the hot seat once again.

As a quick introduction about AucklandSoar to the newer members of the club or to those who fly at Ambury, Auckland Soar was formed in the mid-nineties primarily as a gliding club by a number of glider pilots from other clubs in the Auckland region who regularly flew at Ambury, due to the power flying which regularly took place on their home fields. In this regard gliding is and still remains one of the key objectives of the club.

Having already endured one policy change by the ARC a few years ago I had to set about writing the Resource Consent application and representing AucklandSoar at the Auckland Regional Council hearings which ultimately enabled us to keep flying at Ambury and to obtain our current licence to fly there. This license was given with the emphasis being on silent flight and it is on this basis that we are able to fly at Ambury.

Our licence is valid for a period of 5 years at a time and we have successfully had ours renewed once to 2013 (or thereabouts). In light of the new Auckland Council we must be seen from this point onwards of not rocking the boat.

And believe me, they know we are there as I still get correspondence from them !

So where does this leave us?

This leads us on to the present and the people who attended the AGM would have heard Les talk about the change in flying habits over the last few years and that maybe it was time for the club to get back into some competition flying once again.

And by that, I think Les is talking gliders here. I couldn't agree more. For the few who regularly fly in competitions it keeps your flying skills razor sharp. For others, and this includes me, I'm not ashamed to say what skills I once had in this department are way past rusty so it's going to be like starting all over again.

As Les has reported, and we have seen it ourselves, the upsurge in park flyers has spread dramatically. I even have a few myself. While we are able to fly them at Ambury, I believe it should be in moderation as the last thing we want to do is set about accidentally spooking horses and set about making too much noise for which people may complain. This doesn't necessarily have to come from the adjoining neighbours but can be from anyone using the park.

So where am I going with this ? I don't think AucklandSoar should forget its roots because the simple fact is:

- 1) we are a gliding club
- 2) where else in Auckland can you go to fly gliders.

Along with the park flyer craze there has been an increase in electric gliders as well, e.g. Radians etc. It would be nice if we are able to tap into this market and find the people out there who have bought and fly them somewhere and look at getting these guys to join us and fly at Ambury.

After all, this is the sportsman class of today which leads to the new generation of F3B pilots later on.

As for the immediate future. More gliding competitions and attendance at those competitions is the goal, a sun shade would be nice as there is no shade whatsoever at Ambury in Summer and even I can't stand the heat for too long these days. And maybe a few more chairs so people can sit down and have a drink or two in the shade. Oh yes, and an airstrip of some description. If any of these sounds like a good idea humbug the committee and we'll see what we can do.

In closing we say farewell to two of our members. Cai who is off to Brazil and of course we all wish Les, Gypsy and family all the best and success in their move to Perth. Does this mean Les will now represent Australia in upcoming F3J events ?

We won't forget you Les, after all you have your name carved into every trophy we have.

Dave



Thermal Thaw 2011 at Ambury on 12 June

Dave Crook

This year's Thermal Thaw event was once again held at Ambury Farm Park after being flown at the North Shore's Wainui field last year. Fortunately the day was rain free with only a moderate wind blowing from the west. Unlike last year where Brian Leeves reported the 2010 Thermal Thaw as "an absolute pain" due to the WSW winds gusting up to 20 knots as well as passing showers. So much so that it was a 50 – 50 call as to whether the event should go ahead and as a result had only 5 entrants.

This year we had eighteen (18) people entered, 6 in the open class and 12 in the sportsman. The open being the fully moulded F3B and F3J gliders while our sportsman class was opened up in essence to everything else. This being all other gliders, 2 metre wingspan or more with rudder, elevator and/or spoiler and even electrics comprising any combination of the above. After all this was meant to be a light hearted contest with the emphasis on getting people to come along and fly whatever they have. Whatever turned up, we would tailor the rules to suit if need be but generally we just wanted everyone to give it a go and have fun. This to my mind has to be close to a record number of people for a Thermal Thaw event and by my recollection only trumped by our own Soarfest event from a few years back. This was great to see and this type of format for competitions gives us something to work on when planning future events.

Even before the competition started the fun and games had begun. Ross and Ngaire had their Winnebago stuck in the field (or as Ngaire will say, Ross got it stuck!) due to the rain which had been pummelling the site over the previous few days.

Thank goodness for a friendly farmer with a tractor who got it moved and repositioned to a more suitable location. Laurie Jackson was another who found that his Falcon station wagon liked the mud and he had to engage the services of half a dozen people to get it moving.

Everyone else managed to tip toe their way through the field to the respective car park area once they had soundly gained enough momentum to get through the gate. The entrance was not a pretty site and once everyone had left at the end of the day it looked even worse. I hope there are no repercussions but we can only wait and see.

As is the norm this competition is run to the Thermal A format comprising 4 rounds and dropping the score from your worst round. We decided that the rules for those with electric aircraft would be similar to those of the gliders. Launch and when you're comfortable with your height switch the engine off and your time starts.

Brett Robinson called for a pilot's briefing at half eleven with the first round to start at 11:45. Normally Thermal A comprises one hour rounds but we figured that once everyone had flown (or just about), the following rounds could start immediately. After all, having a thermal event in winter sometimes means it's best to get these things done and dusted ASAP so everyone can head home to warmer climes.

During the event there was a steady supply of tea and coffee provided at the Winnebago Café, and not far away Aneil had a fantastic vegetable soup on offer together with sausages off the BBQ. This ensured everyone was well fed and watered.

Onto the competition itself and with a steady wind blowing in from the west it was always going to be a case of facing the pointy bit into the wind and hang in there as there weren't an awful lot of thermals on offer. This was mainly predominant with the sportsman class but I noticed a few times the F3B aircraft were able to penetrate and move around the sky a fair bit more. The open class results were always going to come down to the throw away round. Les Stockley produced a 459 score on the very last flight of the day and as a result only shed 3 points off a maximum of 1380 for a score of 1377.

Chris Kaiser was the only person to yield a maximum round score of 460 in round 2. In fact the top 5 place getters in the open class were only separated at the finish by 10 points. Very impressive flying indeed by everyone in that class.

The sportsman class yielded different results as you would expect but the winner of that competition went to Cai-Uwe Jurasik with a total of 1311 which would have placed him seventh overall on the day. Dave Ackery was a very close second to Cai.

Given that the gliders in the sportsman class do not have the same capabilities as that of the moulded gliders both Kai and Dave distinguished themselves admirably given the conditions. Jim Hall who finished mid field flew very consistently apart from his first flight of the day and I'm guessing Brian Leeves would have wished the competition to end after round 1 as his scores went backwards after that point but still finished in the pack.

To show that we weren't too serious or anal about following the rules to the absolute letter, those that landed in the adjoining field were still awarded their flight times. And on this occasion Ross McDonnell's 2 metre seemed to like the other field a lot better than the one we were in.

To next Page....

Thermal News



Thermal Thaw 2011 at Ambury on 12 June

Everyone flying electric was seen to be switching off at approximately the same height as the other gliders in sportsman and given the scores you'd be hard picked to tell who was flying what.

There were a couple of line breaks but the unluckiest person award must go to Ross Purdy whose 2 metre glider wings folded on launch with the fuselage having nowhere to go but straight down. The wings drifted off over Mangere Bridge in a shower of confetti but were soon recovered. A bit of work is required but the plane will be back in the air eventually.

A number of prizes were on offer to the winners of the open and sportsman class who had the choice of either bottles of wine or DVD's. Plus certificates to each of the top three place getters. As well as that there were a number of spot prizes to people whose final scores were the closest to those written down prior to the event and pulled out the hat. In this way everyone had a chance of winning something.

I believe everyone had a good day out. For those new to competition flying and who competed in the sportsman class, watching the guys in the open class hopefully gives you something to aspire to. We hope you come back for more. Thanks to everyone who turned up and made the day such an enjoyable one, especially everybody who made their way to Ambury from the North Shore. To Ross and Ngaire and to Aneil for the food and beverages, awesome. Brett for organizing the prizes as well as being chief photographer and Les for throwing a few extra bottles of wine into the mix as spot prizes.

Same again next year ?



(Left)
Open Winners
Les Stockley
Chris Kaiser
Dave Larsen

(Right)
Sportsman Winners
Cai Jurasik
Dave Ackery
Ernest Klein



Wanted:

Our new Prez is looking for an F3B or F3J glider to replace his long lost and much loved Genesis from years gone by.

Last seen in all its glory suspended in a tree at Soarfest in Waharoa.

So if you are no longer in love with the one you have or are looking to upgrade then now's your chance.

Send photos and provide details of what's on offer to our prez at:
david.crook@hcc.govt.nz or chloecat@xtra.co.nz.



Thermal Thaw 2011 Ambury on 12 June - Results

THERMAL A - OPEN

		ROUND												
		1			2			3			4			FNL
NAME	CLUB	FLT	LD	TTL	FLT	LD	TTL	FLT	LD	TTL	FLT	LD	TTL	TOTAL
Les Stockley	AKS	359	100	459	360	95	455	359	100	459	359	100	459	1377
Chris Kaiser	AKS	357	100	457	360	100	460	358	100	458	358	90	448	1375
Dave Larsen	AKS	359	100	459	359	95	454	359	95	454	358	100	458	1371
Aneil Patel	AKS	359	95	454	359	100	459	358	95	453	360	95	455	1368
Laurie Jackson	AKS	359	100	459	360	90	450	358	100	458	340	0	340	1367
Ted Bealing	AKS	354	85	439	359	65	424	359	90	449	356	95	451	1324

THERMAL A - SPORTSMAN

		ROUND												
		1			2			3			4			FNL
NAME	CLUB	FLT	LD	TTL	FLT	LD	TTL	FLT	LD	TTL	FLT	LD	TTL	TOTAL
Cai Jurasik	AKS	356	100	456	358	40	398	338	70	408	357	90	447	1311
Dave Ackery	AFFC	352	85	437	354	70	424	356	35	391	349	70	419	1280
Ernest Klein	NS	355	0	355	270	0	270	295	45	340	345	80	425	1120
Simon Vandy	AKS	233	75	308	345	95	440	235	60	295	235	0	235	1043
Jim Hall	HBC	242	0	242	284	55	339	263	75	338	255	75	330	1007
Bryan Leeves	HBC	358	90	448	355	0	355	187	0	187	122	0	122	990
Billy Posthumus	NS	346	45	391	245	0	245	350	0	350	0	0	0	986
Scott Purdy	HBC	331	0	331	290	85	375	0	0	0	0	0	0	706
Dave Ngahuriri	NS	174	60	234	125	40	165	120	35	155	233	60	293	692
Ross McDonnell	HBC	234	0	234	178	0	178	152	0	152	132	45	177	589
Rob Moody	AKS	77	0	77	142	60	202	84	75	159	128	60	188	549
Ross Purdy	HBC	285	0	285	0	0	0	0	0	0	0	0	0	285



Part of the Sportsman pit area

8



Simon Vandy's electric.

Thermal News



Thermal Thaw 2011 - Photo Gallery

Bryan Leeves gets his Sagitta into the air.



The Ross McDonnell launching technique.



Bryan Leeves about to launch Jim Hall's model.



Aneil Patel waits...



The pits



and winchlines



A Les Stockley approach to the spot.



Three electric fliers in action.

Thermal News



Thermal Thaw 2011 - Photo Gallery



The North Shore guys start



another round together.



Ernest Klein prepares



and then launches his electric scale ship.



The BBQ area



(after lunch)



Three wise men? - sitting down

More pics at:

http://www.aucklandsoar.org.nz/thermal_thaw_2011.html

AucklandSoar
Radio Control Soaring Club
PRESENTS
THERMAL THAW 2011
12TH JUNE 2011
AMBURY FARM

- THERMAL A (OPEN CLASS)
- SPORTSMAN CLASS

FLY WHAT YOU HAVE:

- 2 METRE GLIDERS
- ELECTRIC SOARERS
- VINTAGE MODELS

ALL WELCOME

No Entry Fee
11:00 a.m. Start
Lunchtime BBQ / Soup provided, Tea & Coffee turned on.

Thermal News



North Island F3B Series Round 2 18/19 June

The second round of the NI F3B Series was flown over last weekend in Hawke's Bay. No flying on Saturday due to rain but Sunday dawned a beauty. By 9am it was a bit cloudy but conditions were comfortable and we were all keen to get a couple of rounds flown and a completed competition. Two rounds of Duration were flown first. Joe recorded the only perfect score with Rhys, Dave L, Joes second flight and both Kevin's flights only 1 second off a max. In an effort to keep the competition moving both rounds 1 & 2 distance tasks were also flown back to back. Highest laps was done by Joe at 23 & 22 laps followed by Chris on 20 laps. Two rounds of speed finished off a good day. This saw a new NZ record set by Joe at 14.77 seconds (the previous record was 15.30 seconds). Other times were a 15.68 for Joes other flight, a 16.30 for Kevin, 16.94 for Dave L, 17.86 for Chris and a 18.19 for David.

It was great to see Sharn up from the South Island and a good turnout from the NI F3Bers. Ian was at his second F3B meeting and we hope to see him around for a while even though his Big Stings life came to an abrupt end. Thanks to the HB guys for there hospitality and the HBRF club for a bit of fun on Saturday night. Tried the tripe but sorry it's not for me!!

Results as follows:

- 1/. Joe Wurts - 6000 points
- 2/. Dave Larsen - 5724.1 points
- 3/. Chris Kaiser - 5553.5 points
- 4/. Peter Williams - 5369.5 points
- 5/. David James - 5257.2 points
- 6/. Craig Dawson - 5165.6 points
- 7/. Richard Thompson - 5079.5 points
- 8/. Kevin Botherway - 4960.6 points
- 9/. Ken Duffell - 4943.9 points
- 10/. Sharn Davies - 4882.2 points
- 11/. Rhys James - 4457.3 points
- 12/. Aneil Patel - 2956.7 points
- 13/. Ian Thompson - 2847.5 points



The next F3B meeting dates are:

Round 3 - 10 & 11 September in Matamata Round 4 - 12 & 13 November in Hawke's Bay

North Island F3k Hand launch Round 2 28/29th May

Thanks to the New Plymouth club for making the field available. It had a great launching pad nice mown grass and every now and then a little liquid sunshine on the Saturday morning. There were five visitors from around New Zealand by far the longest distance travelled was John Shaw (Timaru), with two from Hawke's Bay – Ken Duffell and Kevin Botherway and two from Auckland (the closest!) – Chris Kaiser and Aneil Patel. The weather looked doggy all week but come Saturday morning we managed to start the competition with the groups having the odd drizzle break for a few minutes. This made the competition quite hard and with not much thermal activity flight times remained quite short throughout the morning. The sun appeared for a short time just after noon along with a building breeze the conditions remained fairly hard for day and we managed to complete 7 rounds by around 4.00pm. Before the start of each task we had a quick briefing to explain how to achieve good results and understand the required format.

Rob and Lynn Whalley organized a nite out at the Lone Star for a fantastic meal and great time catching up. With everyone a little worn out we assembled on Sunday around 10:00am with the local club members also having there usual Sunday session. We spent some time having all up last down flights and then spent some time talking about various construction techniques for DLG's and suggested models, servos, batteries etc. Throughout the weekend the guys also flew there "mosquito" class which they have found great as an intro into hand launch and can also be flown on the slope as well!

Local Robert Bolton an ex serious discus / javelin competitor can really launch with the best and will be a real threat in the very near future he also has the enthusiasm to build / vacuum and now has my taboosh mould and tech details – look out!

Results:

- | | | |
|------|-----------------|------|
| 1st | Kevin Botherway | 6000 |
| 2nd | John Shaw | 5962 |
| 3rd | Chris Kaiser | 5855 |
| 4th | Ken Duffell | 5363 |
| 5th | Aneil Patel | 4895 |
| 6th | Robert Bolton | 4845 |
| 7th | Rob Whalley | 4495 |
| 8th | Alan Lawrence | 3968 |
| 9th | Rod Brown | 3841 |
| 10th | Steve Blackman | 1659 |

Next F3K competitions :

Saturday / Sunday 6,7 August Levin or Hawke's Bay



Ambury News



Seen at Ambury recently.....



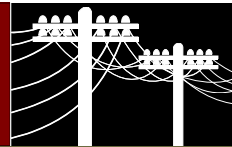
(Top four images) Colin Rothery and his electric vintage model both on the ground and in the air.

(Above left) Tony Gribble hold his new electric stick foam model.

(Above right) Les Stockley gives his daughter Merenia some stick time.

To view even more Ambury Images go to:
www.aucklandsoar.org.nz/ambury_antics.html

Electric Newz



One member's current electric project

Some details and pics of a **Sig Spacewalker**.

(This is the plane being constructed, but images from the web, although it seems identical.)

Specs are;

Wingspan 104 in (2642 mm)

Wing Area 1800 in² (116 dm²)

Weight about 23 lb

Length 72 in (1829 mm)

Radio Req. 4-Channel with 5 servos (2 aileron, 1 elevator, 1 rudder, 1 throttle)

Motor Turnigy 8080-10-160 brushless, 100 A

Battery 2x 5sp 5000mah - wired in series!

Prop 22 x 10.

Hopefully, soon to be seen at Ambury!



The (small?) electric power-plant!





2.4GHz Radio Control Explained - Part 1

If you've got, or you've been thinking of buying, a 2.4GHz spread-spectrum RC set then you'll probably be keen to understand exactly how it works, and hopefully this article will help you do so.

First, a few words about older "narrowband" RC systems...

Traditional narrow-band RC systems on anywhere from 27MHz to 72MHz are fairly easy to understand because they work just like your regular AM or FM radio - sending out a signal that is picked up by the receiver and then sent to the servos.

Unfortunately, just like regular FM broadcast radio, these RC systems require a frequency all to themselves if they're going to avoid interference with each other. What's more, it doesn't take much to disrupt a regular narrow-band signal. A noisy thermostat or electric drill can often cause massive amounts of electrical interference when listening to an AM broadcast and FM isn't always that much better.

But manufacturers of spread spectrum (SS) radio systems are claiming that you need never worry about being shot down by other fliers and that all 2.4GHz systems can get along in harmony, despite apparently using the same frequencies.

So how can that work?

Well to explain this, I'm going to use a series of illustrations that I call "the freeway analogy". Using these diagrams and explanations, I will do my best to convey the complex world of spread spectrum in a form that most people can get their brains around. Of course in doing this I've had to take a few liberties with the details but these are not important.

Which Flavour of Spread Spectrum?

YES, IT COMES IN DIFFERENT FLAVORS

Before I launch headlong into a detailed explanation, it's worth pointing out that there is more than one flavour of spread-spectrum.

The first and most common type is what we call Direct Sequence Spread Spectrum (DSSS). This involves the transmitter and receiver staying within a fixed part of the 2.4GHz spectrum.

The second type is called Frequency Hopping Spread Spectrum (FHSS) and involves having the transmitter and receiver constantly changing their operating frequency within the allowed limits of the 2.4GHz band.

At the present time, only Futaba and Airtronics use FHSS, the remainder using DSSS.

And right now I can hear you asking "which flavour is best?"... to which I have to say... neither and both.

Or, in other words, neither solution is best all the time, there are benefits and drawbacks to both, as you will see.

However, it's safe to say that in theory, the Futaba FASST system does give the best of both worlds because it is not only FHSS but also DSSS.

How do traditional RC systems work?

(Narrow band FM/PCM Radio Control)

Ever since the first radio control systems for models were built over half a century ago, the technology has been "narrowband".

Narrowband refers to the amount of space that signal takes on the spectrum of available frequencies.

Today's FM/PCM radio control systems operate on a tiny sliver of space on relatively low frequencies (27, 35, 36, 40, 41 or 72Mhz).

This tiny allocation of bandwidth for each RC channel creates a number can be likened to riding a bicycle down a narrow trail and the same problems apply:



Firstly, you can't ride very quickly simply because it's such a squeeze to get past the bushes and fences either side of your trail. In radio terms this means you can't send the control information between transmitter and receiver very quickly.

Secondly, if you run into another cyclist on that narrow track, chances are that you'll both fall off and get hurt. In radio terms it means that almost any other signal on the narrowband frequency you're using will result in interference (glitches or lock-out).

Clearly this isn't the best situation for controlling a potentially expensive and sometimes dangerous radio controlled model but, with careful channel management, it has served us well for decades.

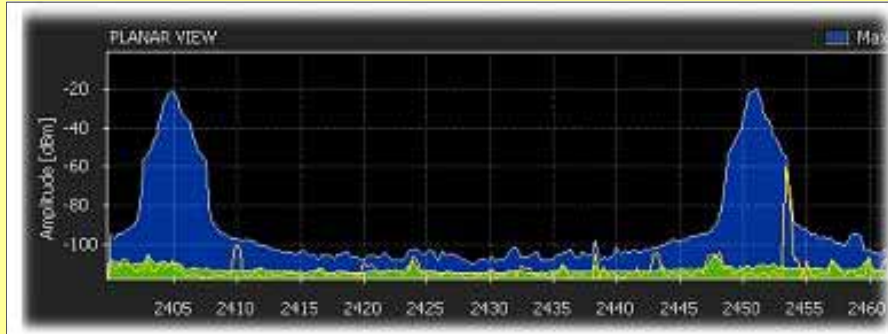
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2.4GHz Radio Control Explained - Part 2

Distributed Spread Spectrum (DSS)

SPREAD SPECTRUM EXPLAINED



Distributed Spread Spectrum radio can be likened to a multi-lane freeway where your car seems to appear at random in different lanes. In fact, it appears and disappears so quickly that it almost appears to exist in all lanes at the same time. In radio terms, the transmitter uses a wide spread of frequencies to send data to the receiver, rather than the very narrow band of frequencies used by the older narrowband RC sets we've seen up until now.

So what's the point in spreading yourself so thinly?

Well if you stop and think about it, if your "DSS" car encounters another on the freeway, it won't have very much effect. Your own vehicle won't be blocked because it will simply continue past when it suddenly appears in another lane which isn't blocked.

In radio terms, a single (or even quite a few) other transmissions won't have much effect on your RC system because they'll only block a tiny amount of the signal being sent. In fact, unless the freeway is almost completely blocked, at least some of the signal from your transmitter will get through to deliver your control inputs to the receiver.

Even better, if another DSS transmitter (or even several more) is operating on the same channel, it is also unlikely to interfere because it'll be jumping lanes in a different sequence and at a different rate.

So in a DSSS system, the last SS stands for Spread Spectrum and the first two letters stand for Direct Sequence. This relates to the order and frequency at which your vehicle moves between the lanes.

How DSSS Handles Interference

THE BATTLEFIELD ANALOGY

Another way to help you understand how a DSSS system avoids being "shot down" by interference is the battle-field analogy.

When an army goes into the modern battlefield, they're usually ordered to "spread out" -- and that's exactly what DSSS does, it spreads your transmitter's signal out over a much wider area than is the case with FM/PCM gear.

Just as on the battlefield, it's much harder to kill an enemy when they're spread over a wide front, so it is with a DSSS radio signal.

The chances of any single rifle-shot actually hitting a soldier on the battlefield is significantly reduced when they're widely spaced across the whole front. With DSSS, your radio signal is similarly spread very thinly across the radio spectrum and thus virtually immune to enemy fire, unless that fire is very intense.

By comparison, a closely grouped army of men can be decimated in moments by a single mortar shell or burst of machine-gun fire. That would be the equivalent of your old RC gear being shot down by interference or another transmitter on the same frequency being turned on while you're flying.

So what if someone turns on another DSSS system that uses the same channel you're already on?

Well because DSSS spreads your troops so thinly across the battlefield, there's plenty of room for another platoon from a totally different army to run between the ranks without the two colliding. This is why multiple DSSS systems can co-exist on the same channel without interfering.

Which radios use DSSS

Of the currently available 2.4GHz spread spectrum systems, all use some form of DSSS but others, such as the Spektrum/JR and Futaba FASST systems use other techniques to offer even greater protection from interference.

Several other systems that have gained a small following are those from XPS, Assan and iMax. These also use DSSS but appear to have no effective way of coping with the kind of crippling interference that might leave the other systems unaffected.

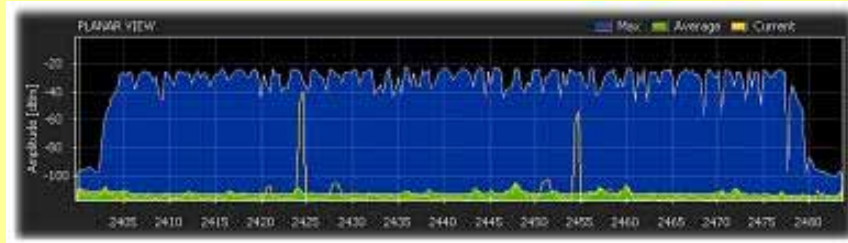
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2.4GHz Radio Control Explained - Part 3

How do FHSS RC systems work?

FREQUENCY HOPPING SPREAD SPECTRUM



Frequency Hopping Spread Spectrum radio systems work by constantly hopping between a number of frequencies.

If you've just read the description of how DSSS systems work you're probably wondering "what's the difference?" Well, whereas the DSSS system is like a car that repeatedly appears and disappears on various lanes of a freeway, at such a rate that it almost appears to be everywhere at once, a FHSS system effectively sees your car not simply jumping a small distance to a nearby lane, but all the way to a completely new freeway.

In radio terms, this means that the frequency sent by the transmitter doesn't just jump around within the chosen operating channel but actually jumps between a whole range of different channels. It can be seen that, at least in theory, the FHSS system should be even more immune to the type of congestion that would cause problems with a DSSS system. That's because although nothing may get through while it was using a very congested freeway, the hop to a less congested one would allow the normal transfer of data to resume.

Under normal circumstances a FHSS system hops between a fixed number of channels in a repeating random sequence. When multiple FHSS systems are used together, the random nature of the hopping sequence means it's very unlikely you'll find multiple sets trying to use the same channel (freeway) at the same time.

How FHSS Handles Interference

THE BATTLEFIELD ANALOGY

In a pure FHSS system, the troops are all closely grouped together as was the case with an old narrowband system but, because they're constantly jumping from battle-field to battle-field, the effect of enemy fire in any particular field is minimal.

Imagine that the whole army is teleported onto a battle-field and then, before you realise it, teleported away to another. Clearly this makes a FHSS system a hard target for interference to hit.

However, the FHSS systems we're seeing used in radio control systems right now are a blend of both DSSS and FHSS. This means that not only is the signal spread across a whole channel but it also hops continuously from one channel to another.

This means that an FHSS system is an incredibly difficult target for any interference to hit -- and when you're flying RC models, that's a very good thing.

Which radios use FHSS

Right now, only two readily available 2.4GHz spread spectrum radio control systems use FHSS. These are the FASST radios from Futaba and the Airtronics offerings.



To view them complete article, go to:
<http://www.rcmodelreviews.com/spreadspectrum01.shtml>



Airsail have moved

For those of you who aren't aware, and I don't think there would be many of you, Airsail has moved and is now located just west of Mercer.

I had the pleasure of meeting John and Sharon Danks earlier this month when I took my JR 3810 transmitter in to them for a bit of TLC.

If you haven't been there yet it's well worth the visit. And believe me they are very easy to find. Eight kilometres west of Mercer which translates to 8 minutes of driving. Not much at all.

JR have put out some beautiful transmitters recently and the DSX 11 is absolutely gorgeous. However I have my eyes on the equally stunning new XG8.

One of the benefits of shopping locally is that if there ever is a fault with the products on offer then John is able to sort it out for you.

Which isn't always the case when purchasing something similar offshore.

If you're in need of modelling supplies or stuck for something to do head on out and say hello.

Dave Crook.

WELCOME TO 'JR AIRSAIL'

New Zealand Sales Agent for Japan Remote Control JR PROPO Systems

Airsail Retail, Websales & Mail order Model Shop

www.airsailmodels.co.nz

JR AIRSAIL has moved

The new location is a short drive south from Auckland in the north Waikato region 8kms west of Mercer. We have a brand new showroom fully stocked with all the usual Airsail merchandise, JR radio control equipment, balsa, glues and dopes. We are also the new NZ agent for Airtrade fully composite ARF IMAC and scale models and large scale Modeltechnik gliders. You can view all their products on www.airtrade.pl

So what's stopping you? Come on over and view our own flying site with views out over the Hampton Downs motor race circuit as far as Mount Pirongia.



How to get there;

Turn off the Waikato Expressway at Mercer, continue over the Waikato River bridge towards Pukekawa, you are now on Mercer Ferry Rd. Take the first turn left onto Morrison Rd., approximately 5kms' from Mercer, follow the JR Airsail signs onto Native Rd where you'll find us just along on the right.

New from JR Propo are the DSX9x2 and the DSX11. Both these sets are on DSM2, are supplied with the RD921 receiver, 1500 Nimh battery and charger.

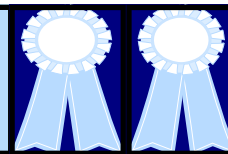
We still have some stock left of the X2610 PCM 6 channel computer radio set, this set is supplied with 4 x ES539 servos, R770 receiver, 1100mah airborne nicad battery, switch harness and charger. All this for only \$375.00

Our radio sets can be offered with different receiver or servo combinations to suit the purchaser, please ring for details and prices

JR Airsail Contact Details:

Phone: 09 233 4014, Fax: 09 233 4015, Email: westech@xtra.co.nz
Postal: Native Road, RDI, Tuakau Delivery: 299 Native Road, Pukekawa 2696, New Zealand
Contact John and Sharon Danks for all your modelling needs

CLUB POINTS UPDATE



2011/2012 THERMAL CHAMPIONSHIP

	Thermal Thaw	
NAME	12/06/2011	TOTAL
Les Stockley	9	9
Chris Kaiser	8	8
Dave Larsen	7	7
Aneil Patel	6	6
Laurie Jackson	5	5
Ted Bealing	4	4
Cai-Uwe Jurasik	3	3
Simon Vandy	2	2
Robert Moody	1	1

2011/2012 OVERALL CHAMPIONSHIP

	Thermal	Electric	Slope	TOTAL POINTS
NAME				
Les Stockley	9			9
Chris Kaiser	8			8
Dave Larsen	7			7
Aneil Patel	6			6
Laurie Jackson	5			5
Ted Bealing	4			4
Cai-Uwe Jurasik	3			3
Simon Vandy	2			2
Robert Moody	1			1