Recreational Pilot - Issue #23

September 2005

Recreational Aircraft Assn. of New Zealand (Inc.)

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Club Roundup

Microlighting Explained

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Aircraft Fabric a Brief History and Testing Methods. By Anton Lawrence

From the beginning of flight to sometime around the early 1950's the only fabrics available for covering airplanes were natural fibre in origin. Irish linen made from flax or Grade A cotton became the favourites. These fabrics were pulled tight over the aircraft, sewn and stitched to the airframe, they then had various layers of Nitrate or Butyrate dopes applied which shrunk the fabric still further to make a tight finish, finishing paints were naturally applied last. Linen and Cotton fabrics came in different weights which would be chosen dependent on the aircraft VNE wing loading and horsepower.

From the 1950's on, man made fabrics became available, these included Polyesters and Fiberglass. Polyester manufactured by DuPont is known as Dacron, this is the most popular product on the market today. The type of Polyester used on microlight aircraft can vary from the basic woven cloth, heat shrunk and doped, in the same manner as Linen or Cotton, to Dacron sail cloth which is resin stabilized and pigmented to give a finished product with out any additional work from the builder. Once again polyester comes in various weights to suit the need. Coloured Dacron sail cloth is mostly available in 3.8oz or 4.1oz.

Organic fibres have a finite life due to mildew, fungus and greater susceptibility to ultraviolet degradation, the life span of organic fabrics would normally be between 10 and 20 years. By contrast the life span of polyester fabrics properly applied, doped and painted is almost infinite. It is important to note that there are a number of approved systems for applying polyester to an aircraft. The common systems are Ceconite, Stits Fiber, Polly Fiber and Super Flight; they all have STC (Supplementary Type Certificate) approval for application to various aircraft. STC is a US FAA system of approval for modifications or additions to aircraft. Microlights are not required to follow the STC protocols but it would be unwise to follow an unapproved process. Superflight System VI is a UV stabilized two pot urethane process which can give a high gloss finish to a fabric aircraft. The key to these systems is the effort required to build a suitable UV barrier below the finish coats, this is important as UV is the only possible cause of polyester failure, assuming it's attached to the aircraft properly.

Dacron sail cloth is in a different category, it won't rot although mildew can grow on it, but as it does not have layers of UV block applied it is very susceptible to UV degradation. It is easy to see the ravages of sunlight on sail cloth as it very quickly fades and in doing so loses its strength. It was once thought that white sail cloth had the best longevity but tests in NZ have shown that the coloured cloth lasts longer, this is probably due to the pigments in coloured cloth protecting the inner fibres where as white cloth has no pigments and allows the UV to penetrate deeper and do more damage. So what is the life span of Dacron sail cloth? This depends heavily on the use the aircraft gets and how it is hangared and covered, but in New Zealand you can expect to have to replace your sails at between 10 to 20 years maybe less for a well used club aircraft.

With such a wide range of life spans it is important to have a testing regime which suits the various fabrics and systems. The FAA AC 43.13-1b states that fabric on any aircraft should be within 70% of original un-doped strength but also sets minimum tensile strengths for airspeeds and wing loadings. i.e. The fabric on an aircraft with a wing loading less than 9lb sq/ft and a VNE less than 160mph should have a tensile strength not less than 46lb per inch width, for an aircraft above these limits the tensile strength should be 56lb, for gliders with a wing loading of 8lb sq/ft and a VNE les than 135mph the tensile strength should be 35lb. The approved test method is a little more involved. A section of cloth is to be removed from the aircraft, trimmed to a 1 inch wide strip and the paint and dope removed. This is then clamped evenly at both ends and hung with a bucket of sand underneath. Sand is added until the fabric tears, the sand is then

weighed, this gives the exact value of tensile strength, if the fabric passes this test the area where the fabric was removed is then repaired in an approved manner. As this is a destructive process various methods were developed to try and analise the fabric in a less destructive way. One method was the Seyboth cone, a weighted cone which was placed point first on the fabric, if it penetrated then the full test was performed, another more popular tool was the "Maul" tester, a spring gauge which measures pressure applied to the fabric via a small point. By knowing the minimum pressure before penetration it is possible to test fabric without damage, once again if the tester penetrated the cloth then the full test should be performed. AC 43.13-1b states "Mechanical devices used to test fabric by pressing against or piercing the finished fabric are not FAA approved and are used at the discretion of the mechanic to base an opinion on the general fabric condition. Punch test accuracy will depend on the individual device calibration, total coating thickness, brittleness, and types of coatings and fabric".

Maule Tester

RAANZ Tester

None the less a variant of the Maule tester is ideal for Dacron sail cloth, it works in the same way, a 3mm point with a flat end is fitted to the end of spring gauge. (A belt tension gauge serves the purpose just right.) As Dacron sail cloth does not have coatings applied to it the results will be very consistent with the quality of the fabric being tested. RAANZ has done considerable research in this area in the past and has come up with pressure values based on the type of craft we fly. For double surface aircraft like the Bantam the pressure should be 10lb and for single surface aircraft a figure of 6lb is acceptable.

In conclusion if the fabric on a doped or urethane finished aircraft looks to be in good order and was applied in an approved manner there should be no need to subject the fabric to a punch type test. If the fabric looks old and scruffy then some form of test might be appropriate, the best course of action here might be to contact a local expert, LAME or the current Tech officer before proceeding with any destructive tests, but keep in mind the safety of the owner or pilot of the aircraft in question. For Dacron sail cloth there is no question, the fabric should be checked regularly, at least annually, with a Maule type tester. RAANZ will soon have a supply of testers in stock and they will be available via the administrator. Fiberglass cloth has not been mentioned here as its life is longer than most airframes and there is no appropriate test.

Some notes on using a Maule type tester. The tester should be held perpendicular to the surface being tested. It should be depressed slowly while listening for any cracking sounds in the fabric. All colours and surfaces should be tested. The areas under greatest tension should be tested, tap the sail to find the highest pitch.

The URL's below contain more detailed information for those who are interested in further reading.

USA FAA AC43.13-1b Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair
http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/99C827DB9BAAC81B86256B4500596C4E?OpenDocument
AWB 51-1 Issue 1, 25 December 2001 Aircraft Fabric Coverings http://www.casa.gov.au/airworth/awb/51/001.htm
Aircraft fabric testing, ultralight aircraft sail fabric testing, how to test fabric on ultralights and light sport aircraft.
http://www.ultralightnews.com/aircrafttroubleshooting/fabtest.htm
Superflite System VI http://www.superflite.com/SystemVI.asp
Ceconite and Randolph Covering System http://www.ceconite.com/index.htm
Stits Poly-Fiber Fabric Covering System http://www.polyfiber.com/stits/

Are you a RAANZ Inspection Authority and do you need a Fabric Tester ?
Contact office@raanz.org.nz to place an order. A batch of testers will be available soon.

SMS/wx station by Stuart Parker

The guys suggested I put some info in about the SMS text message based weather station I have just developed and released- it fills in a bit of space and might be of interest to you...

It's a solar powered unit you can attach to your windsock mast that monitors wind speed/direction and ambient temperature, and sends you a text message with that info when you ask it. For the cost of a couple of text messages (and that's free in the weekends on Vodafone) you get a snapshot of the important stuff so you can make a decision on whether its worth getting out of bed to go to the field, or whether to proceed/wait it out/divert when returning to base from a cross-country in dodgy weather.

The aim was to answer the questions you would ask your flying mates if they were on the field- what's the wind speed and direction, how gusty is it, does it look to be getting better or worse? There are a few more questions it may be able to answer in future developments (QNH, visibility, cloudbase, rain), but for the moment I have focused on the wind conditions as the most important.

To get the weather conditions, you send it a question mark (?) as a text message, and it replies with a weather report as shown below. Anyone can ask, from any network (Telecom, Vodafone, etc) from almost anywhere in the world. As long as you are in coverage and can text, you are wired for weather.

The reply message looks something like this. The exact layout depends on your phone display size.

SMS/wx Raglan **NW/5 2-10 = 15C** **95% S17 V107**	**SMS/wx identifier, your field name (set up by a text message)** **current wind speed/direction, average and gust over last hour, trend indicator, temperature** **battery charge level, receive signal strength, software version**

The SMS/wx station stores the wind data samples for the last hour and uses that info for calculating the average, gust and trend. Average and gust are pretty obvious. The trend shows whether the wind appears to be decreasing (>), increasing (<), or about the same (=) over the last hour. This is determined by comparing a weighted average favouring latest samples with a weighted average favouring oldest samples- if the difference is more than 20% then it flags increasing or decreasing as appropriate, otherwise it flags no change. Note that it can only report the trend as observed over the last hour- that may not necessarily indicate what is coming up.

I have also included basic aircraft or hangar security monitoring. You can connect something as simple as a wire loop around your aircraft, a magnetic reed switch on the hangar door, or a PIR movement sensor in the hangar. You configure SMS/wx station security monitoring with a text message to set the delay time and the number to call when an alarm is detected. The alarm delay is to provide time to arm and exit or enter and disarm the system.

An alarm message looks something like this

SMS/wx Raglan **ALARM!**

If you want to check it out, text ? to the SMS/wx station at my strip (021 076 3405). The wind data is real, the battery reads high because that unit is running off mains power, and the temperature reads high because the electronics is indoors, but you will get the idea of how it works. And if you want more info, download the User Guide from my website (www.sparxfly.co.nz).

The current version works on the GSM (021) network. A CDMA (027) version is coming up soon, and then I plan to add QNH, visibility and cloudbase.

Comments and questions (and orders) are welcome..

PDA's in the Cockpit - by Ian Sinclair

I would be the first to admit that I like toys. Sometimes you think that a new toy will be useful in the cockpit and find that it is sadly disappointing in the practical world of flying. I have recently started using a PDA when I fly, I like it a lot ! It has not been thrown out of the cot.

A PDA (Personal Digital Assistant) is a small computer that was originally conceived to let people take computer data and functionality with them when they are away from their desktop machines. They come in two main flavours, Palm OS based and Windows OS based. Both of these flavours have a wealth of software available for them including many applications written for aviators. http://www.palmflying.com details many of the offerings.

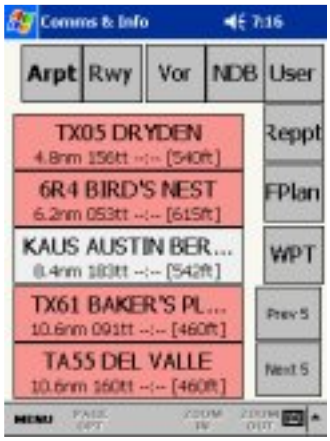
My setup uses a software package called PocketFMS (www.pocketfms.com) which initially installs from the internet onto a WindowsXP host. This PocketFMS application running on the host then connects to the internet and downloads navigation and airspace data, as well as outline maps, from the PocketFMS site. The program that runs on the WindowsXP host is a fully functional product in its own right. You can add user waypoint data and maps. All of the functions that are available on the PDA are available on the host. Currently I am just using the standard map, airspace and navigation data that downloads from the PocketFMS web site.

Once you have loaded and configured the host PC you can sync the PDA version of PocketFMS application and the down loaded data to the PDA. This is a single click menu option on the host PS version.

The PDA I am using is a iPaq 3850. It runs Pocket Windows 2002 and has sufficient memory for this application without adding extra memory cards. This is not the latest model and was purchased second hand. I have also run PocketFMS on and iPaq 2200 which runs Windows 2003 and is a bit faster.

To be useful in the cockpit you really need a fairly secure place for the PDA to live that is easily visible and easily reached. I choose to use a PDA mount with a suction cup onto my wind screen initially but I think I will dispense with the suction cup and bolt the mount in after I have settled on a permanent spot. The mount hooks into 12Vdc and has a connection for a serial GPS.

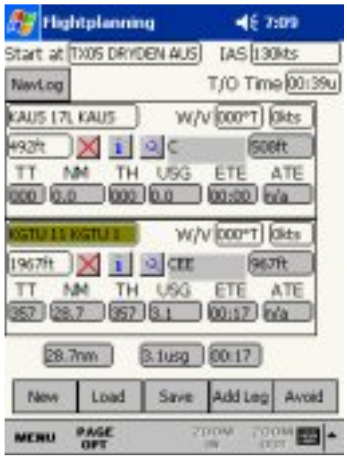
The PDA can be coupled with GPS's in various ways. I decided to use a GPS that was dedicated to the PDA and purchased a serial mouse GPS. This looks like a GPS aerial but is a complete GPS. You feed it +5vDC through its plug and it gives you NMEA GPS navigation sentences back. You need to place it somewhere where it has good sight of the sky. The model I have has a magnetic base which requires caution with choosing a location with regard to its proximity to the compass.



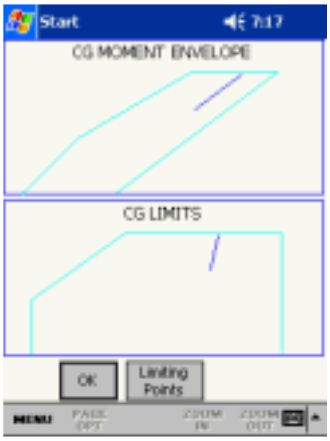
I paid $NZ150 for the iPaq3850 , $US175 for a GPS mount and interface cable and $EUR80 as a donation to the PocketFMS software project. PocketFMS is able to be use free but if you make a donation greater than about $US60 you get a more streamlined data down load from the web site. A project that delivers this much functionality deserves financial support.

Now the useful bit. Power on the PDA, start PocketFMS , enable the GPS , and you are ready to go. PocketFMS does many things available on Proprietary GPS. I usually have a goto to somewhere selected , a compass rose displayed, airfield and airspace data

showing and the outline map on. I like to have the map configured track up. I find the airspace warnings are useful and I sometimes use the airfield/airspace information screen for radio frequencies.



Like most assistants there are pros and cons. Some people will find that using a touch screen and pen is less than ideal. Back lighting is an issue especially as evening approaches and the PDA emits a good deal of white light.



I would recommend to anyone who installs this sort of setup that they spend a good deal of time learning how to use the functions they are most likely to need while flying. Blasting about the sky with your head inside the cockpit learning a new tool is not desirable. Do some time on the ground or duel while learning. Also be aware of your legal requirement to carry current maps and flight guides. They are the official documents. A graphical representation of navigation and airspace data works in a different way than physical maps and charts. It is better and worse. The trick is to get the really useful things functional and not to worry about the less useful fringe stuff. Happy flying

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http://raanz.org.nz ==> RecPilot - Information and electronic download of this magazine

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Pass : xhddf <== Used with your membership # to access http://www.metra.co.nz/metflight

From Grant Coldicott who is retiring as your RAANZ administrator

I don't know of any organisation that does not benefit from new blood from time to time. Unfortunately, it is often the case that elected officials keep getting elected and end up serving life terms in the job, as there are usually few who wish to throw their hats into the ring and take on a management position. But the time has come for me, after eight years as Administrator, to let someone else have a go.

It's been a totally enjoyable experience. I've enjoyed playing a part in the direction of RAANZ and I've met a lot of great people. When the South Canterbury group took over the executive in 1997, it was with the intention of building on the good work Laurie, Toddy and many other foundation members had done in getting microlight flying recognised by the general aviation community.

It would be fair to say that we have seen significant changes since then. We now have microlight aircraft that can cruise at 140 knots and above, new generation gyrocopters, high performance trikes and two place aerochutes. We have a steadily aging pilot group with many older pilots coming to RAANZ from aeroclubs on reduced medicals and we have a society that is more focused on legal liability and duty of care than perhaps in the past.

All this means those who administer the organisation need to be focused and enthusiastic to move RAANZ forward and keep ahead of what is required and expected by our members and what is necessary to keep faith with our regulatory masters, CAA, while preserving the benefits we enjoy. This is no mean feat in a 'voluntary' organisation.

Many thanks to all the members who have helped out over the years. Kind regards to all ... Grant

From Stuart Parker - RAANZ President

After quite a few years as the shop-front, providing the day-to-day contact with members, Grant Coldicott has tendered his resignation.This was a blow to the exec, as Grant was one of the key South Canterbury guys who took over responsibility for RAANZ management and reshaped it into a sharper organisation with particular focus on prompt turn around of member services. It is going to be a challenge to maintain and build on that level of service, but Grant leaves us with a pretty tight system to pick up and run with. With limited time to cast around for a replacement, and the preference for someone already up to speed with the systems and procedures required, I volunteered myself and my wife Ruth to pick up from Grant. So here is the plan....

With effect from Saturday 10 September, RAANZ administration will move from Grant to Stuart and Ruth Parker. Ruth will provide the shop-front service for general enquiries and handle the daily processing of applications, renewals, etc. She is your first port of call for general inquiries. Stuart will handle the non-standard stuff in the evenings after work.

Inquiries relating to operations can go direct to Evan Gardiner (Operations Officer) or we will pass them on to him.

Inquiries relating to aircraft technical can go direct to Anton Lawrence (Technical Officer) or we will pass them on to him.

Posted mail and email will be redirected, but it will help if you note the contact details on the inside cover of the magazine and use them from 10 September onwards.

See the inside front cover for the new RAANZ Office address

The new address is also on the back of the Magazine wrapper. You might like to keep this handy until our forms and documents reflect the new address.

It is our aim to keep you guys in the air, with the transition happening under your feet with the minimum of delays. But it will take some time for us all to get up to speed, so we ask for your understanding during that time. The Exec wish to acknowledge the significant contribution Grant has made to RAANZ in providing the day to day contact with members- it is a hard act to follow. Thanks Grant!

From Ian Sinclair - RAANZ CEO

I am sure that all RAANZ members will join with me in thanking Grant for the service he has given our members during his time as administrator. Grant is well organised and systematic in his approach to the administration tasks and has always been responsive to all of the queries he has dealt with. RAANZ is subject to regular CAA audits and it is invaluable to have this very high standard of organisation. The feedback that we receive from CAA reflect the level of confidence that Grant has achieved. Grant has also done an outstanding job of attending to the financial record keeping of RAANZ and attending to the requirements of running an incorporated society. In recent times he has also been the editor of this magazine.

Grant is fully involved with the change over of administration to Ruth and Stuart and I am sure that with positive support and existing well structured systems that they will provide the quality of administration that RAANZ members expect.

Thanks Grant for a job well done and welcome Ruth.

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To place an add in this magazine contact editor@raanz.org.nz. Any advertisement that is relevant to RAANZ membership will be accepted. Ads may be placed in colour or black and white.

Ads that are for the current month in the RAANZ Marketplace will appear in this magazine.

News from around the Clubs

What's hapening in the Waikato

What's happening in the Waikato? Well, something, but not much. The weather hasn't been all that great, and the highs and ridges seem always to turn up mid week rather than the weekends.

Two new members- Peter Treanor, who is really putting the hours in and is up to solo consolidation, and Steve Greer who is in the early stages of training. Welcome aboard guys, its always good to have new blood and enthusiasm in the club.

We have relocated the club plane and strip to Jon Reekers' strip on Collins Rd- handy to town, two 600m vectors, will be a real good base for club activities with an opportuity to improve our public exposure. Next step is to get a hangar and clubrooms set up so we can provide a tidy and inviting place for flying and ground based activities. This strip is attached to a VFR transit lane in Hamiton CTR, with special procedures. Pilots must be briefed before operations there.

Julian Thornton is getting the building bug again. His CH-701 is up for sale to finance a hack 2 seater for general flying while he builds a Teenie Two for real flying.

Kelvin Maisey is the proud owner of two planes- both in bits in sheds! His Hi-Max is being prepared for sale, so he can get his new acquired Challenger 2 tidied up and into the air.

Stuart Parker ZK-JAW Airborne Edge 582 www.sparxfly.co.nz

RAANZ AGM

19 November 2005 10.00am

To be hosted by the Canterbury Recreational Aircraft Club , Rangiora Airfield

Please forward any remits and nominations for executive positions to RAANZ Administration by 31 October 2005 or contact an executive member if you would like any issues raised and discussed.

Flying South to Bluff

Saturday the 11 June 2005 dawned a beautiful winter's day with just a touch of fog in the valleys. After talking to Jack de Reeper headed up to Riversdale for fuel & called into the neighbours Alec Taylor's to see who else might be interested in going for a bit of a fly around Southland. After toast & tea at Alec's we decided to fly over the Hokonuis & meet Jack at Winton, I left my trike at home & went flying with Alec in his Kit fox. Alec generously putting the Joystick in on my side to let me have some flying time in the Kit fox.

After landing at Jack's strip we decided to head south to Bluff as there was no wind & the day was just perfect. Billy Ryan is busy getting a strip set up on the Island Habour in Bluff, as he nears completion of his own aircraft.

Jack lead the way as he knew the airspace around Invercargill Airport & we followed through with the radio calls as we went through the different zones. The Tower was great.

We flew along Oreti Beach down to Green Hills & then East over to Bluff. It was unbelievable to have no wind. Alec & I

circled above Jack as he approached the strip on the Island Habour it was nice flying over the water, the 912 motor running nicely (it doesn't know it's over water). Once Jack landed the B22 we followed in. It was different coming in over the water. Don't think that many ultra lights will have landed in Bluff.

After a talk to the locals who got a big surprise to see us there it was back into the air & around the back of Bluff hill as it was so calm, back through Invercargill Airspace to Jacks for a coffee. We flew back home over Malcolm Swanson's & Alec dropped me off at home great days flying.

The next day was just as good, beautiful winter's day so Jack in the B22, Errol Hoffman in his thruster & Myself in the trike spent the day landing on top dressing strips in the Hokonuis. Very interesting with lots of steep strips to land with unusual angles!. We flew back too Mandeville for coffee at the Moth & onto Alec's for afternoon tea of cheese rolls & cake!

There was plenty of activity at Alec's the model airplane club were having a flying day there. Thanks to Jack De Reeper, Alex Taylor & Earl Hoffman. Bob Oliver

RAANZ Marketplace - Your online buy sell and advertise - Ads from August

Folding propellor # Kolecki (Sweden) 2-blade all alluminium. 50" diam, ground adjustable pitch. 2 spare blades. E-mail for photo. $50 | Altimeter # Winter (Germany) 2 1/4" (56mm) 0-5,000" with baro subscale. Excellent condition, may need calibrating. E-mail for photo. $100 | A.S.I. # Mitchell Aircraft (Germany) 2 1/4" (56mm) venturi type in as new cond. E-mail for photo.$85 | Headset with boom mike. # Telex model DBM-1000. Good cond. E-mail for photo. $75 | P.T.T. switch. # Telex model PT200. E-mail for photo. $20 | Electric Altimeter/Barometer/R of C # Picture and full specs on < www.taskemcorp.com > Model 2000 with O.A.T. option. Very little use (18 months in glider)as new condition. $400 | A.S.I. # 3 1/8" (80mm), 0-150kts in 1 1/2revs of dial. Has a printed face in kts stuck on back of original, which is in kms per hr. $60
Neville Swan 90 Luckens Road, Westharbour, Auckland (09) 416.7125 nswan@xtra.co.nz

Rans S-6ES Coyote II, tricycle undercarriage, Rotax 503DI, DC electric start, 430hrs. Roomy comfortable & good visibility, 4+hr endurance, surprising performance for 52hp engine. $37,500
Peter Kernohan 021 804 733 kernohan@actrix.co.nz

Avid Flyer # Mk 4 Avid flyer, 2.2. Jabaru with 290 hrs TT. Airframe approx 550 hrs. Radio/intercom. ASI. VSI. Tacho.water temp. EGT. I have two avids and one of them must go. See advert lower for the other. $39000
Peter Karl 100 Great South Rd Ohaupo 07 8236892 or 021 823689 peter.j.karl@xtra.co.nz

WANTED two place microlight in excellent condition ,Rotax 582 powered or similiar,approx $15K
Wayne Woodward 160 Shortland St, Christchurch. (03)3881873 wayneandjude@paradise.net.nz

RAANZ ATO Workshop 5th 6th November, Hamilton

As some time has now passed since the changes to our manual we believe it is appropriate that all our ATO's are brought together to review these changes and any other operational matters.

This workshop will provide a unique opportunity for all our ATOs to be together in the one place at the same time. It is a fact that the flight standards and safety culture that we expect from all our pilot members is to a large extent dependant on those standards permeating down from our ATO and instructor network.

We hope all of our ATO's will be able to attend this workshop ensuring it's success and effectiveness.

Revised Law Exams

CAA have recently approved our revised Law Exam Question Pool. We have expanded the question pool to 133 questions and taken the opportunity to put the question pool on the RAANZ website. Only the questions and advice about where further information about a question may be found is published on the website, it is up to students to decide the correct answer by researching the subject. A law exam that a candidate will sit is 60 questions from this pool. The idea of publishing the whole pool on the web site is that it effectively defines the syllabus. If a candidate can correctly answer all questions in the pool they will have an excellent knowledge of the subject and will pass the exam. It is a useful way that instructors and students can work through the syllabus. All of our exam subjects will be reviewed and posted to the website once complete.

To access the Law pool. go to http://raanz.org.nz ==> Exams ==> (111) - Law

Click on a bold heading like "(111101) - Airspace" and the page that is returned will list all of the questions under that topic. Click on a lesser heading like "(111101161) - Minimum conditions (Q)" and you will only get the questions that relate to that sub part of the topic. There are links at the bottom of each page to take you to the next section.

Microlighting and RAANZ - What are the requirements to fly Microlights ?

If you are not a microlight pilot or RAANZ member this might help you understand the requirements

With the influx high performance microlights and the recent upgrade of our manual it seems timely to restate what microlighting and RAANZ is and does respectively.

Microlights were borne from hang gliders and were very low performance aircraft with a limited range, the last 20 years has seen huge growth in the sport along with exponential advances in technology. This has led to the development of aircraft which can have cruise speeds in excess of 140 knots. Microlights are low momentum aircraft as defined in CAA Advisory Circular AC103-1:
A one or two seat aircraft whose stall speed, in the landing configuration, at maximum gross weight does not exceed 45 knots, and having a maximum gross weight of:

- **544 kg for landplanes**
- **579 kg for a single-place seaplane or amphibian**
- **614 kg for a two-place seaplane or amphibian**

This has given rise to aircraft like the Technam or Alpi at the top end but the popularity of slower open cockpit aircraft like the Bantam is still very high.

Microlights are divided into two categories Class 1 single place or Class 2 two place, Class 2 microlights are exempt from requiring type certification but are required to have a permit to fly the requirements for which are set out in CAA part 103. Class 1 microlights are not required to have a permit to fly but all microlights are required to undergo an annual condition inspection.
The risk to the public is mitigated by the following restrictions as per part 103.155 Flight criteria:
(a) A pilot shall only operate a microlight aircraft
(1) by day; and
(2) in VFR meteorological minima equal to or better than those prescribed in 91.301.
(b) A pilot of a microlight aircraft shall not operate
(1) over any congested area of a city, town, or settlement; or
(2) in controlled airspace or within 3 nautical miles (5.5 km) of an aerodrome certificated under Part 139 unless
(i) the pilot has gained a pass in the air law examination required by
61.153(a)(6)(i) or an equivalent examination; or
(ii) the pilot is under the direct supervision of the holder of a microlight pilot instructor certificate who meets the requirement of paragraph (b)(2)(i).

RAANZ (Recreational Aircraft Association of NZ) is certified under part 149 to administer microlighting as defined in part 103. The association holds delegation authority from CAA to issue flight certificates, authorize modifications and perform annual condition inspections.
RAANZ has recently upgraded it procedures and exam structure with particular emphasis on air law. We have four levels of proficiency starting From Novice through Intermediate to "Advanced Local" and "Advanced National". The Novice and Intermediate are training levels where as the Advanced are full certificate levels. With the increasing popularity of the higher performance aircraft it was realized that the pilots of these aircraft would be traveling greater distances and in so doing would undoubtedly encounter controlled airspace. This is why the two "Advanced" certificates came into being. The advanced local allows the pilot to fly within 50nm of their base and must stay clear of controlled airspace but otherwise has no restrictions. The Advanced National pilot on the other hand has no distance restrictions but must have FRTO and controlled airspace training. To gain "Advanced National" the pilot will have done a minimum of 45 hours. All advanced pilots are required to undergo a BFR. If a pilot has a current part 61 license then all that is required to fly a microlight is a type rating issued by an appropriately rated instructor.

Microlight instructors are divided into provisional and senior, a pilot must have a minimum of 150hrs flight time before being considered suitable as a provisional instructor, a further 50hrs of instruction time and a minimum of 200hrs are required before an upgrade will be considered. Microlight instructors are overseen by a network of ATO's (approved testing officer) who are appointed by the RAANZ exec; they must have a minimum of 500hrs flight time 100 of which must have been instructional. All instructors and ATO's are required to carry out an annual flight review. If a part 61 instructor wishes to instruct on microlights they must first gain a type rating for the aircraft being used, they are not required to undergo a RAANZ flight test as long as the part 61 license remains current. Part 61 instructors who have been issued with a RAANZ instructor rating must maintain RAANZ membership.
The medical requirements to fly a microlight are less stringent than those required for GA pilots; the examination can be preformed by your GP. The standard is similar to the Land Transport system for a bus driver. Once again the risks are mitigated by the restrictions in the flight criteria listed above.

The intention of this article is to help dispel any myths or preconceptions that may exist about microlighting, for further detail please proceed to the RAANZ website http://raanz.org.nz