

Issue 539

February 2020

Victorian Association of Radio Model Soaring



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Cover Photo

Neil Roshier's development project (called Fatso) based on the initial design concepts for the "High Flyers" training aircraft. This is a rudder, elevator and flap design (REF) and should be a good next step for the high flyers as well as being an excellent ALES competition model. See the article below for more details

Wednesday at VARMS Field – The 3 F's night (Fly, Food, Fix)

The deadline for material to be in Aspectivity is two weeks prior to the general meetings and for the next month (March) it is therefore the 28th of February 2020



Welcome to the President's Ponderings

Well here we are again, back for an exciting new year ahead. It was nice to see members enjoying events that were held over the summer break including the successful event held at Kilcunda late last year. Members are flying everywhere if facebook is anything to go by with one president (retired) constantly popping up all over the place. Home territory was also in use quite a bit with the winches in regular use and Dronetech holding a training session during Jan. The field is looking great thanks to the efforts of the maintenance crew.

Just a little on the down side, I attended the clubrooms early one morning late last year to find the lights still on, the charging bench live, the clubroom deadlock not engaged and the gate left open – more care with lockup please!!

On the positive we have had contact with council over the “permission to fly” at Rowville with a number of backwards and forwards emails indicating that they are now taking this point seriously. However we have yet to hear back on the questions we raised on the clubrooms design as well as our proposal for the area to be covered by the RRR lease (license). The council advised us earlier in the month that as part of the basketball development a couple of people would be on our field at Wantirna looking for frogs. Could be an interesting cuisine in the stadium canteen!!!!. If they were to plant a few orange trees they could also have duck alorange’ (spell check don’t work on that one)

Looking forward to our first meeting in February with Peter Cossins organising a very interesting presentation (see below) and where the supper this month will be a sumptuous feast organised by President (retired) Ross Armstrong.

Ron H (President)

Presentation of Wing design software by Andrew Allen



December General Meeting minutes

Laci Nagy

Date: 13 December 2019

Time: 8:00 pm

Venue: VARMS Clubhouse, 291 George St, Wantirna South, Victoria.

Apologies: None

Visitors: None

Opening. Meeting was opened by the Ron Hickman as Chairman at 8:00 pm with 40 members present.

Previous Minutes. The previous minutes as printed in Aspectivity were accepted.

Moved: Robert Kassel Seconded: Mike Barlow Passed

Business Arising From Previous Minutes. There was no business arising from the previous minutes.

Correspondence. The following correspondence was received and sent:

Inwards.

S. Harris – Booking Drone Training for Jan 2020

KCC - Paul Reading – Draft Masterplan

A. Mayhew – ½ A Texaco proposal

P. Van Tongeren – Warbirds over Wantirna 2020

Outwards.

KCC – Kate Innocenti – Tenancy Report

KCC - Paul Reading – Fly Over Permissions at RRR

VMAA – J. Finocchiaro: VMAA Instructor Training

Local KCC Councilers – Thanking them for their continued support of the club's relocation

Treasurer's Report. The report was presented and accepted.

Moved: Robert Kassel Seconded: Alan Mayhew Passed

General Business. The following other items of business were discussed:

Training. One member was awarded their Bronze Wings and it was noted that the Bronze Wings test has changed. The club will be contacting the VMAA to find out when it changed.

Aerotow. The last event for 2019 is on Saturday 14 Dec 19.

Competition. The following competition items were discussed:

Club ALES. The club will be changing the rules slightly for 2020 to limit models to built up and foam core wings only. There are 3 events planned for the first half of 2020.

VMAA Trophy. The club is looking for people to sign up and represent VARMS at the VMAA Trophy in two events:

Electric Timed Motor Run for 2m models, and

ALES for 100" or 2.54m models.

½ **A Texaco.** The new club guidelines were presented by Alan Mayhew.

Bruce Claperton's Birthday. Bruce extended an open invitation to all VARMS members to attend his birthday celebrations at the club and invited them to fly models from 5:00pm-6:00pm as part of the celebrations. He asked that anyone intending to attend let him know for catering purposes.

Clothing. Lew encouraged members to buy round patches for \$10 to promote this great club and said that there was one beanie currently in stock.

Membership. Rodney Savage has taken on the role of Membership Secretary.

Slope Event at Densley Road. Notice was given on planned slope events at Densley Road, Woolamai on the 29 Dec 19 and 5 Jan 20 to introduce people to the site that may not have flown there.

Aspectivity. More articles are needed urgently.

Relocation Report. The following items were discussed about the relocation to the new site: The club has signed off on the plan for the building locations with the KCC and they agreed to almost every request that we made.

The next phase is to work on getting the permission to fly over the adjacent areas. The KCC are negotiating on the club's behalf with the relevant stake holders to get this permission.

The club has written to four KCC councillors thanking them for their help on the planning process and asking for their continued help in supporting us acquiring the permission to fly.

We are working on reviewing the club's catering needs to ensure that we can at least maintain the level of catering that we currently have.

Presentation. Alan Mayhew gave a talk on his new model the Volare describing some of the design considerations and building ideas to make possible the curves and light weight without sacrificing strength. Of note was the technique for using PVA glue and a steam iron to do the top sheeting of the wings.

Next Meeting. The next general meeting will be held on Friday, 14 February 2020 at 8:00 pm.

Closure. There being no further business to discuss the meeting was closed at 9:00pm.

| Flying Event Calendar | | | |
|------------------------------------------------|------------|--------------------|------------------------------------------------|
| Name | Date/s | Location | Further Info |
| informal I/2 A Texaco | Wednesdays | VARMS Glider Field | VARMS.org.au |
| VARMS Glider Training | 02/02/20 | VARMS Glider Field | VARMS.org.au |
| VARMS Scale Aerotow | 08/02/20 | VARMS Glider Field | VARMS.org.au |
| General meeting (8:00 PM) | 14/02/20 | VARMS Glider Field | VARMS.org.au |
| MAAA Instructors Course (8:00 AM – 5:00 PM) | 15/02/20 | VARMS Glider Field | VARMS.org.au |
| VARMS Glider Training | 16/02/20 | VARMS Glider Field | VARMS.org.au |
| ALES (12:30) | 16/02/20 | VARMS Glider Field | VARMS.org.au |
| Committee Meeting (7:30) | 24/02/20 | VARMS Clubrooms | VARMS.org.au |
| Next General Meeting | 13/03/20 | VARMS Clubrooms | VARMS.org.au |

News and Articles

The High Flyer 'Fatso' Pt.1

Neil Roshier

I just want to say right at the start that Russell Pearce started all of this! Not the 'Fatso' name bit, that comes from the Roy and HG's unofficial mascot for the Sydney Olympic games – Fatso the fat arsed wombat.

No, Russ 'caused' or 'inspired' the creation of the High Flyer (HF) Fatso when he made a three-meter wingspan version of the original HF gliders.

During the initial HF glider testing, Russ, Ron and I were quite impressed at how well the HF gliders actually flew - when they were well made. There were issues with the construction, but their flying qualities were good. Russ then had the idea for an enlarged three-meter version using the original HF glider wings either side of a one-meter centre section.



Weight 1.67 kg 3.2 meter wing span.

I cut the parallel chord centre section on the CNC hot wire cutter and handed it over to Russ. What eventuated was an enlarged HF glider – longer fuselage, with balsa either side of the foam. A Depron tail cut from 6mm sheet and a wing with the 8mm carbon tube as the main spar. What eventuated was a glider that climbed slowly, was as flexible as a Bolshoi ballerina, but came down from any height slowly – really, really slowly!

When my son Joseph stated a desire to fly in the club ALES competitions, I thought that something like Russ' glider might fit the bill with a few changes. We had also discussed the next gliders for the High Flyer members and this seemed like a good 'next step' as it would use all of the same components – the same motor, ESC, servo's etc, minimising cost.

The first change was that the centre section of the wing needed to be stiffer, both in bending and torsionally. I cut a 500mm wide parallel wing section (using the same S3012 airfoil as the tips) because that was the length of carbon spar-tube I had to hand. This has a tight fit into the 3mm ply rib on either end, spreading the spar load into



the core/skins. The ply rib also reduced the potential for the carbon tube to split from the load of the 6mm piano-wire wing brace, which is inside the tube. Some 50mm wide, 80GSM uni-directional carbon fibre was added top and bottom of the core for bending stiffness and 55gsm glass was added on a 45/45 degree bias for torsional stiffness. All of the fibers overlapped the ply ribs, with the excess cut off when the resin had cured. No Kevlar was added along the bottom



surface to make a live hinge for the centre flap – I forgot and used tape later. As this was meant to be a simple, speedy, build (ha!). I just rolled on epoxy laminating resin and made no effort to scrape off the excess. The end result was a bit heavier than I expected, but was very stiff – I could not flex it very much at all.

The tail was next. I used Curtis Suter's Excel spreadsheet to work out the numbers for the glider. If you're not familiar with the spreadsheet, it uses formulae from Mark Drela and others to work out the parameters of tail moments, dihedral, tail surface areas etc and provides this in a reasonably easy to digest format (I'll add this at the end).

This gave the size for the fin and the tailplane. I cut these from 6mm depron and sanded the front edge round and the rear 50mm beveled on one side. The leading edge was covered with 20mm wide, 55gsm fibreglass. A 20mm strip of 60gsm Kevlar made for a hinge and some carbon was added both sides for stiffness. The skins were vac-bagged this time, using Mylar and a food sealer to provide the bag materials and vacuum. Food sealers are great for these small jobs, you can keep the bag sealed for as long as you like and you can also post-cure the epoxy resin in the bag.

With the wing/tail sorted the next issue was the fuselage. A molded fuselage was out of the question, but it had to be roomy enough, easy to make, tough enough to take a bad landing or twenty, capable of taking a bigger motor if it was needed; and not expensive. A pod and boom design seemed to fit the bill. The tail boom was easy

– I used some 16mm x 15mm x 1000mm 3k roll-wrapped carbon tube. This has half mm thick walls and is stiff and quite light. For the pod section I used a 30mm thick bit of Knauf brand XPS from Bunnings and cut this into a long rectangle to make the 'pod'. I let in two 30mm x 70mm x 6mm thick balsa rectangles into the rear of the 'pod', with a 70mm spacing between them.



These have two purposes: the first is that the wing-saddle mount is glued and screwed directly to these ensuring a stiff connection between the wing and the fuselage. The second function is to provide a stiff connection between the carbon

tailboom and the composite skins of the fuselage: the Knauf XPS foam is compressible and I feared the boom would gradually loosen over time if only foam supported it. Making a tight-fitting hole for the carbon boom is straight forward enough: use a small half-round file and bevel the inside of the tube at 45 degrees, effectively sharpening the edge of the tube. Then used this to cut the hole in the foam/balsa. Some effort is required and you won't get it perfectly straight – but with care you will get it close. You can straighten it with sand-paper later – the added gap (no more than a mm) will be filled by epoxy.

With the tailboom removed the wing chord was marked on the pod with the expected CoG from the data-spreadsheet. The finished fin and tailplane, plus two 9mm wide Emax servos were taped to their place on the end of the tailboom. The rest of the components were taped to their expected places on the pod-blank. This was the motor and spinner, battery, esc and receiver. A bit of 20mm dowel was used as a pivot and the position of the heavy bits up the front was adjusted to get close to the expected CoG. This gave the pod length needed, and anticipating the addition of a 40mm spinner on the front, a pleasing shape was drawn up and cut out. A big, fat pod – hence the name.

The foam/balsa pod was shaped with some 80-grit sandpaper, creating a bit of mess. The shaped involved nothing more complex than rounding off the front and streamlining the rear. A couple of balsa 'cheeks' were added either side of the motor position just to ensure enough clearance for the motor wires or a 35mm diameter motor. Then the whole pod was covered with three layers of 100gsm fibreglass and a layer of carbon at the tailboom section of the pod.

Once it was cured for a few days in the sun, it was lightly sanded and given a coat of rattle can undercoat. The tailboom was glued in place, with lots of effort to make sure it was straight. The fairing from the end of the pod to the tailboom was done with Q-cells and 5-minute epoxy glue.



The rudder and elevator servos are mounted in a small ply-sided box at the rear of the tailboom. The box design is tight to the sides of the servos to restrict the potential for movement should they come loose. The servo box also makes the tailplane mount, with the tailplane bolted down with two nylon bolts. The wiring for servos runs inside the tailboom. The wiring is one set of three wires, the positive and negative of which powers both servos and the third wire is the signal wire for one servo, with an additional signal wire for the other servo. In effect this means there are two less one-meter lengths of wire running to the servos.

The pod was hollowed out simply by cutting an access hole with a Dremel and then cutting the XPS foam into small cubes and breaking them out to create enough space for all of the components. At the very front the balsa cheeks were broken out and the foam removed for the motor. A motor mount was made from two discs of 3mm plywood, the inner one a tight fit into the inside of the pod nose and the outer one flush with the outside of the pod nose. This was epoxied in place.



The access hatch is simply some 1.2mm plywood held in place with two rubber bands at the moment. I did add a small plastic scoop to get some air in to cool the ESC – this has worked well. With everything in place the CoG was a little off and a heavier spinner was used.

The decalage angle followed my usual practice, which is to make the tailplane parallel to the flat surface of the S3021 airfoil. From memory this gives around 3 degrees of decalage. Dihedral looked to be far too much, with 270mm under each tip, but then the original plan had been for a 3m version as well and this amount would work better on that plane. The ply tips were added to add to the visibility of the plane at certain angles – I very much doubt if there is any aerodynamic advantage at the Reynolds numbers Fatso flies at. Alan Mayhew has suggested one way to find out is to cut one off and see what happens – I’ll hold off on this sagely bit of advice!

How does it fly?

Well it’s only been flying for four days, so these comments are initial impressions and more will come with more tuning. In all respects it is very easy to fly; it is exceptionally stable, but responds well to the rudder and turns very well. Fatso with turn very flatly, with minimal elevator input required, but will also turn very tightly when banked over with elevator input. Speaking of which it is remarkably insensitive to elevator input, which is probably telling me something, but I’m not sure what yet!

The outer panel washout of 1.5 degree has led to Fatso being very soft when near the stall and will wallow around. Fatso does not drop a tip when the stall occurs and little height is lost. The climb with a new battery is brisk, with around a 45 degree angle held from launch to height – lots of down elevator is required to control the angle of climb. The flap aids landing and more rapid descents from height, but is by no means the anchor that F5J planes have as it is only 20% of the available span. I have not bothered to find out what a small amount of flap will do, but full down flap cuts the speed effectively and makes landings easier.

Fatso seems to signal lift with a side to side waggle of the wings, perhaps due to the amount of dihedral. Both High Flyers Praneel and Jeremy have managed 10 minute flights on one climb, with both wanting to build one of their own. Since we seem to have left-over outer panels the plan is to make a few more. If you’re at the field when I’m flying you are most welcome to have a go.

| Name | Cruciform Tail | Suggested Sizes | What it does? | What affects the results |
|---------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Coefficient of lift | 0.6 | 0.7 big glider 0.6 DLG size | This is an assumed value of CL during slow thermalling flight. | |
| Dihedral Sizing Criteria - Spiral Stability (B=) | 10.78 | >5 Stable =5 Neutral <5 Unstable 4.0 - 6.0 for Polyhedral Glider Mark Drele Recommends: 5.0 - 5.5 for Polyhedral Glider >3.0 for Aileron TD Glider | The dihedral angle of the wing provides some degree of natural spiral stability. A spirally-unstable aircraft tends to constantly increase its bank angle at some rate, and therefore requires constant attention by the pilot. Conversely, a spirally-stable aircraft will tend to roll upright with no control input from the pilot, and thus make the aircraft easier to fly. | Affected by <i>CL Therm</i> and <i>EDA</i> on this tab, <i>Vertical Tail Area</i> on <i>Vertical Stab</i> tab and <i>Vertical Stabilizer moment</i> and <i>Main wing span</i> on wing tab. |

| | | | | |
|------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Horizontal Tail Sizing Criteria (Volume) - Pitch Stability (Vh=) | 0.43 | 0.3 - 0.6 Recommended Mark Drela Recommends: 0.4 - 0.45 Polyhedral Glider 0.3 - 0.6 Aileron TD Glider | This is a measure of the effectiveness of the horizontal tail. The Neutral Point location is primarily controlled by the size of the horizontal tail and its moment arm from the CG. | Affected by <i>Horizontal tail area</i> on horizontal stab tab, <i>main wing area</i> , <i>Horizontal tail arm</i> and <i>main wing chord</i> on wing tab. |
| Vertical Tail Sizing Criteria (Volume) - Yaw Damping and Rudder Power (Vv=) | 0.039 | 0.02 - 0.04 for Polyhedral Glider 0.015 - 0.025 for Aileron Thermal Duration Glider Mark Drela Recommends: >0.03 Polyhedral Glider >0.025 Aileron TD Glider 0.05 - 0.06 Discus Launch Glider | The primary role of the vertical tail is to provide yaw damping, which is the tendency of yaw oscillations of the aircraft to subside. The vertical tail also provides yaw stability, although this will be almost certainly ensured if the yaw damping is sufficient. | Affected by <i>Vertical tail area</i> on vertical stab tab, <i>main wing area</i> , <i>vertical tail arm</i> and <i>main wing span</i> on wing tab. |
| Dihedral Sizing - Roll Control (VvB=) | 0.42 | 0.10 = Marginal Roll Control 0.20 = Very Effective Roll Control | On rudder/elevator aircraft, the rudder acts to generate a sideslip angle, which then combines with dihedral to generate a roll moment and thus provide roll control. | Affected by <i>Spiral Stability (B)</i> and <i>Equivalent Dihedral Angle (EDA)</i> on this tab. |
| Equivalent Dihedral Angle (EDA=) | 17.13 | 12 for a Polyhedral Glider 6 for an Aileron Thermal Duration Glider | EDA is a major factor in roll response, roll rate and spiral stability. For a rudder and elevator model at a given airspeed and yaw angle, the steady-state roll rate will be proportional to EDA. | Affected by <i>Main wing dihedral</i> and <i>main wing span</i> on main wing tab. |

For Sale

| | | | | | | | | | |
|-------------------------------------------------------------------------------------|----------------------|------------------------------------------|----|----|----|----|-----|-----|-------|
|  | Colour | XS | S | M | L | XL | 2XL | 3XL | Total |
| | | 48 | 62 | 65 | 68 | 71 | 74 | 77 | |
| | Royal \$72.50 | | | | | | | | |
| JK01 Stadium Jacket | | Embroidered VARMS logo left chest | | | | | | | |

| | | | | | | | | | | | |
|-------------------------------------------------------------------------------------|---------------------|------------------------------------------|----|------|----|------|-----|------|-----|-----|-------|
|  | Colour | S | M | L | XL | 2XL | 3XL | 4XL | 5XL | 7XL | Total |
| | | 62.5 | 65 | 67.5 | 70 | 72.5 | 75 | 77.5 | 80 | 85 | |
| | Navy \$72.50 | | | | | | | | | | |
| JB Flying Jacket | | Embroidered VARMS logo left chest | | | | | | | | | |

| | | | | | | | | | | |
|-------------------------------------------------------------------------------------|----------------------|------------------------------------------|----|------|----|------|-----|------|-----|-------|
|  | Colour | S | M | L | XL | 2XL | 3XL | 4XL | 5XL | Total |
| | | 57.5 | 60 | 62.5 | 65 | 67.5 | 70 | 72.5 | 75 | |
| | Royal \$39.05 | | | | | | | | | |
| JB 1/2 zip Polar Fleece | | Embroidered VARMS logo left chest | | | | | | | | |

| | | | | | | | | | | |
|-----------------------------------------------------------------------------------|-------------------------------|------------------------------------------|------|----|------|-----|------|-----|------|-------|
|  | Colour | S | M | L | XL | 2XL | 3XL | 4XL | 5XL | Total |
| | | 55 | 57.5 | 60 | 62.5 | 65 | 67.5 | 70 | 72.5 | |
| | Navy \$40.15 | | | | | | | | | |
| JB Crew Fleecy | | Embroidered VARMS logo left chest | | | | | | | | |

| | | | | | | | | | | | |
|-----------------------------------------------------------------------------------|--------------------------------|------------------------------------------|----|------|----|------|------|-----|------|------|-------|
|  | Colour | S | M | L | XL | 2XL | 3XL | 4XL | 5XL | 7XL | Total |
| | | 53.5 | 56 | 58.5 | 61 | 63.5 | 66.5 | 70 | 73.5 | 80.5 | |
| | Royal \$24.20 | | | | | | | | | | |
| JB Polo | | Embroidered VARMS logo left chest | | | | | | | | | |

| | | | | | | | | | | | |
|-----------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------|----|------|----|------|------|-----|------|------|-------|
|  | Colour | S | M | L | XL | 2XL | 3XL | 4XL | 5XL | 7XL | Total |
| | | 53.5 | 56 | 58.5 | 61 | 63.5 | 66.5 | 70 | 73.5 | 80.5 | |
| | Navy \$26.40 | | | | | | | | | | |
| JB Polo with Pocket | | Embroidered VARMS logo left chest above pocket | | | | | | | | | |

Note: All measurements are cm for Half Chest

| | |
|------------------|--|
| Name: | |
| Contact details: | |

VARMS caps & beanies are also available at \$15 each

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Enya is back in Australia

Contact Bill Webb (Balsa Bill) of Alans Gippsland Hobbies for the extensive Enya range
 Phone or fax 03 5626 4205

In addition Bill continues his sale with reductions on his already low prices.

10% reduction on Balsa sheet and carbon strips, tubes, etc.

15% off on – Square section Balsa; leading and trailing edge stock, plus triangular gusset section balsa.

Administration

Standard Operating Times for VARMS Glider Field:

| | | | | | | |
|--------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------|
| Mon | Tue | Wed | Thur | Fri | Sat | Sun |
| Power Glider | Power Glider | Power Glider | Power Glider | Power Glider | Power Glider | Glider |
| 8am-1pm (power) | | | | | | |
| Dawn-1pm (glider) | | | | | | |

| | | | | | | |
|--------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Mon | Tue | Wed | Thur | Fri | Sat | Sun |
| Glider Power | Glider Power | Glider Power | Glider Power | Glider Power | Glider Power | Glider Power |
| 1pm-5pm (AEDST) (power) | | | | | | |
| 1pm-Dusk (glider) | | | | | | |

Times except for Aerotow Saturdays

***Aerotow: Second Saturday each month, 12.00 Noon till 5.00 pm**

Clubrooms: All days 7.00 am till 11.00 pm

"Glider" is any Glider, or electric glider, flown as a glider, i.e. climb and glide

For queries or problems regarding this timetable, please contact the club's president or secretary

Mowing Roster



| | |
|-------|-------------------------------------------------------------------------------------------|
| Field | Alan Gray Mike Barlow Martin Hopper Robert Kassell Tim Stewart Geoff Moore |
|-------|-------------------------------------------------------------------------------------------|

| | | |
|----------------|-------------------|----------|
| Runway & Pits: | Zdenek Busek | 1st week |
| | Ken Madill | 2nd week |
| | Paul Van Tongeren | 3rd week |
| | Alan Taylor | 4th week |

| | |
|-----------|-------------|
| Heliport: | Geoff Moore |
|-----------|-------------|

Any Problems with the mowing roster, ring
Henry Wohlmuth
9764 1921

The Keyboard

Members and visitors with Transmitters using frequencies other than 2.4GHZ, must insert a standard 50mm key, clearly named, into the appropriate section of the Keyboard located on field fence close to southern end of Clubroom veranda.

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| | | | |
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VARMS Web Site: <http://www.varms.org.au> – for up to date info on VARMS

Current Members: If you change your address, please notify the Registrar and VMAA, so that we can maintain the correct addressing of this Newsletter.

Potential Members: If you are interested in joining VARMS, or learning more about our activities, please contact the Secretary, or other Committee member.

Victorian Association of Radio Model Soaring Inc.
Organisation No. A0001504U
Affiliated with the Federation Aeronautique Internationale (FAI)
The World Air Sports Federation



VARMS (Inc.) was formed in 1968 to get together aero-modellers who were interested in building and flying radio controlled gliders. Members fly at many places, but have a home field, within the Knox Regional Sports Park (South Wantirna) some 60 metres west of the rear of the State Basketball Centre- Entrance off George Street, where Training Classes with dual controlled gliders are held every second Sunday 10-1.00pm. A calendar for training is attached to the flying field gate.

VARMS organizes regular competitions in both Slope and Thermal Soaring, from fun-fly, scale, open competition and self-launching (electric) gliders.

General Meetings are held on the SECOND FRIDAY of each month (except January) – at the VARMS Clubroom near State Basketball Centre (as above) and, during daylight saving time there may be limited flying allowed before Meeting starts at 8.00pm. Visitors are welcome. Formalities are usually followed by lively discussions on matters of interest to all **modellers** followed by a cup of your favourite brew.



If undelivered return to:
VARMS Inc.
P.O. Box 4096
KNOX City Centre VIC 3152

