Holdfast Model Aero Club Inc.

Volume 5, Issue 9
September 2014

# HOLDFAST BUZZ

Inside this issue:



**Spring Working Bee**
**Sat Oct 11, 9:00 am**
Please make a note in your diary to help the Club with its general field maintenance.

Details on page 2

## Cute Russian Lady

### Ross Lloyd's Antonov An-2


This month's cover features Ross Lloyd's semi-scale Antonov An-2, affectionately nicknamed "Annushka" by the Russians. Read about his experience with the build and initial flight on page 4

The HMAC newsletter is your vehicle for sharing information, experiences, building projects, etc with your fellow members. If you have photos of your latest model, a construction in progress or handy tip you'd like to share, please send it to Geoff at buzz@itapps.com.au for inclusion in a future edition of BUZZ.

# From the President

Kingsley Neumann

*"...The Annual Auction is approaching slowly but surely. Please read the notice carefully and let your friends know. ..."*

It is great to feel that sunshine on our backs as we emerge from what seems like a very long winter. This is nonsense of course because we can usually manage to squeeze in at least one flying session each week, unlike our northern hemisphere modellers who are confined to inside activities only for many months.

The wind can be troublesome at this time of the year and we have had to abandon Flying Training a couple of times to be on the safe side. Sometimes model crashes are terminal but it is surprising how often they can actually be repaired.

Scratch building is a dying art but there are ample opportunities to learn the methods. Our own Scale Society here in SA is currently promoting a mass build of a fairly simple model. Details are in the MASA Newsletter.

While on the subject of that newsletter, HMAC members will soon notice that some of the excellent articles that John Jefferson has produced for our Buzz will be repeated in the State Newsletter. John's articles are very well written and will be of great interest to others.

I have just started to enjoy flying my Sebart 50e pattern model. It flies extremely well and accurately. If only my rusty thumbs could guide it with a bit more skill, I would be very pleased. Like anything, practice makes perfect. We can't all be champions but we can try.

As I write this, Matt Jamieson and about 15 students from ASMS will be making their way to Shepparton to see their giant scale models fly in the annual event. Steve Nelson and Ross Lloyd will be flying over to Victoria in Steve's Light aircraft to act as support. We wish them all a safe and enjoyable journey and good luck in the flying event.

I am pleased to see a steady number of enquiries from newcomers to our hobby. Some people come with pre-conceived ideas about what to fly and how to fly – Mode 1 or Mode 2. The Club always recommends that potential flyers should come and discuss the possibilities before they commit to a purchase. The Internet and YouTube have a big influence on them and quite often unsuitable models are obtained.

It is important not to deride these people for their choice but rather to gently encourage a rethink on their purchase. There are excellent products available locally and the price is not all that unreasonable.

The Annual Auction is approaching slowly but surely. Please read the notice carefully and let your friends know. Assistance will be sought from HMAC Members on the night with setting up and cleaning up afterwards.

Also please check this newsletter for an announcement about our Annual Spring Working Bee. "Many hands make light work" as Confucius says.

The committee is continuing to work on cost-effective developments for our field, particularly the flight line and tractor storage. The overall principle is to do it once and do it right. Of course there will always be financial constraints but we are working on all angles.

I will be away for about five weeks on a European holiday and I have handed over the reins to Graham Paterson for that period. Thanks Graham.

*Kingsley Neumann*

## Spring Working Bee

The date for our next Working Bee is Saturday October 11, starting at 9:00 am. Your help is requested to perform the following tasks:

1. **Installation of rabbit-proofing**
   - We will fit steel mesh around the perimeter of the main clubhouse
2. **General area clean-up**
   - Gutters, weeding, crack-filling

Even if you can spend only an hour at the field it will help share the workload. Useful tools to bring are:
- mattocks, shovels, rakes, hammers, portable drills, whipper-snippers.

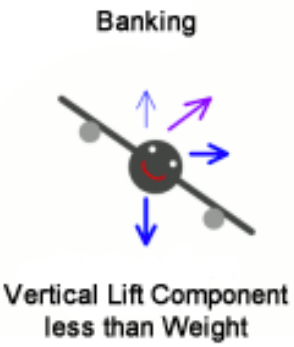
We hope to see you there.

# Ground School - part 2 — by John Jefferson

In the previous instalment we looked at some principles of flight relating to the primary function of controls. This time we'll look at some secondary or further effects of controls, in particular the ailerons.

As we know, the ailerons control the angle of bank and rate of roll. Let's say we are flying straight and level and wish to turn to the left. The normal procedure would be to bank to the left and apply enough up elevator to stop the nose from dropping, then level the wings and elevator once the turn is completed. So why does the nose drop when in a bank and no up elevator applied? It's because the equilibrium of the aircraft has been upset. In straight and level flight the aircraft is in equilibrium – the lifting force of the wings is equal to the weight of the aircraft and the thrust of the propulsion unit is equal to the drag generated by the aircraft. Bank to the left and as a result:


- the lifting force is tilted out of the vertical and is not able to balance the weight;
- the aircraft will commence a sideslip towards the lower wing;
- the up-rushing air will tend to yaw the aircraft in the direction of the slip, i.e. nose down.




Oops, the aircraft is going down fast. Need some corrective action – level the wings and pull up, but not too aggressively as you could over-stress it.

To summarise, the primary function of the ailerons is to control the angle of bank and rate of roll, while the secondary or further effect of using the ailerons is yaw.

Now you know why it's imperative that a turn is balanced with enough up elevator to keep the nose from dropping.

Aileron drag is another aspect that may have an adverse effect on the aircraft. It generally occurs on certain aerofoil sections when aileron is applied. When banking the aircraft (let's do it to the left), the left aileron goes up and the right aileron goes down, and the aircraft rolls to the left, so far so good. Now the interesting bit; since the whole wing is at a positive angle of attack, the up-going (left) aileron reduces both lift and drag by reducing the effective angle of attack and camber. At the other end of the wing the down-going (right) aileron increases lift and consequently generates greater drag. The differences in lift created by the ailerons bank the aircraft, but the unequal drag causes a yawing movement in the opposite direction (in our case, to the right). Not a smooth way of flying.

How do you overcome this? Use rudder when turning – as mentioned in Ground School Part I, modern transmitters can be programmed so that the rudder can be automatically operated in the correct direction whenever the ailerons are used. But beware, this may not be useful in situations such as aerobatic manoeuvres or when coming in to land. If you are thinking of setting up this function on your transmitter, it would be worthwhile to make it switchable, i.e. turn it on or off as needed.

Another way is to incorporate some differential between the ailerons; specifically, arrange for the upward moving aileron to travel further than the downward moving aileron. Again, modern transmitters can be programmed to do this, but you need a separate servo on a separate channel for each aileron. Alternatively you can set this up mechanically on a single (central) servo or two separate servos. The trick is to set the servo arm forward from centre so the resultant movement of the aileron is more upwards than downwards.

It may be a model but the principles that apply to its flying ability are the same as apply to full size aircraft. Knowing these principles and being aware of what you can do to better control your model will make it a pleasure to commit to aviation and make you a better pilot. Got to be happy with that.


**Advertise What you Want to Buy or Sell on our Web Site**
Send details & photos to Geoff Haynes — buzz@holdfastmac.com.au

# Cute Russian Lady - by Ross Lloyd

An ARF model that recently caught my eye was the Antonov An-2. It was originally designed to meet a 1947 Soviet Ministry of Forestry requirement for a replacement for the Polikarpov Po-2, which was used in large numbers in both agricultural and utility roles. However, the basic airframe is highly adaptable and numerous variants have been developed. These include hopper-equipped versions for crop-dusting, scientific versions for atmospheric sampling, water-bombers for fighting forest-fires, flying ambulances, float-equipped seaplane versions, and lightly armed combat versions for dropping paratroops. The most common version is the An-2T 12-seater passenger aircraft.

*"...On the maiden flight using up elevator to hold the tail down and into a light breeze, the model leapt into the air in less than 2 metres ..."*

The model is marketed by Maxford in the USA. It is clearly made in China and I bought it from an ad I found on the RC Trader web site. I chose it because it's a bit out of the ordinary and I thought it would be a good fun-fly type model.

Generally the kit is very good and most parts fit together very well. I was disappointed with the centre hinges on the flaps which I plan to change to 'top hinges' to give me greater movement. I changed the aileron push rods to a heavier gauge wire to reduce the slop in the ones supplied. One unique feature of the model is that the fully rigged top and bottom wings can be removed in pairs. The kit is supplied with two removable inboard inter-plane struts that are held onto the wings with rubber bands and hold the wings for transport.

The instructions recommend a 400-600 watt electric motor or a .40 size two stroke which is a bit confusing because a .40 size electric equivalent would be closer to 1000 watts in my experience. I decided to steal an OS OMA-3825-750W electric motor from another model to use and with a 12 X 7 wooden prop. On five cells this generated about 800 watts and that felt like more than enough power.

On the maiden flight using up elevator to hold the tail down and into a light breeze the model leapt into the air in less than 2 metres as soon as I applied full power and began an almost vertical climb ..... but at least it was straight up. I managed to straighten it out before it went over onto its back and with reduced power I was able to apply enough down trim to get it fly relatively flat.

I have now added a bit of down thrust to the motor and fitted a 3 blade 14 X 8 prop which generates only about 700 watts flat out. The three blade prop is for cosmetic purposes only. Once in the air the model is quite responsive and fairly easy to fly. Scale like take offs will need practice and it will flip onto it's back on landing if you don't get everything about right. It needs to be flown in under a little power until the wheels are ready to touch and then careful use of elevator and throttle are needed to keep the tail down until it stops.

Until I am happy that I know what the full speed range looks like I have not bothered with the flaps and apart from one loop have not attempted any aerobatics. The motor still needs more down thrust so trimming and more take - off and landing practice are the order of the day for the moment.

I like the model not only for its looks but also its scale-like performance and hope to keep it in one piece for quite a while

*Ross Lloyd*

# Holdfast Model Aero Club

# ANNUAL AUCTION

**Friday Nov 7th 2014**
**Cosgrove Hall, 50 York Avenue, Clovelly Park**

**ADMISSION**
**$5.00**
**Juniors: Free**

Doors open at 7:00 pm for set up only.

Trading tables operate from 7:30 pm.

Auction of larger items starts at 8:00 pm

Cool drinks, tea, coffee and biscuits on sale

---

Strathalbyn Model Aircraft Club Inc.
Est. 1977

IN ASSOCIATION WITH THE ... SCALE AIRCRAFT SOCIETY OF SOUTH AUSTRALIA

# John Watters Memorial Scale Fun Fly

## 9th NOV 2014

OPEN TO ANY MODEL THAT HAS A FULL-SIZE COUNTERPART

Gates open at 9.00
Flying starts at 10.00 - finishes at 3.00
continuous flying throughout the day

Entry -$20.....with the legendary SMAC BBQ Lunch included

- 97DB NOISE LIMIT


- PRIZES AND RAFFLE

INTRODUCING FOR THE FIRST TIME

*"GROUP FLYING"*

- Make up a team and have a go
- Any combination of aircraft
- Teams of up to 6 members
- 6 minutes flight time
- let us know if you are entering

Contact : Darren Garratt - smacflyers@gmail.com 0405984956

---

## Support Your Local Hobby Store

modelflight www.modelflight.com.au
EVERYTHING RC - SINCE 1975 -

Tel +61(0)8 8271 1816
Fax +61(0)8 8357 3586
Email sales@modelflight.com.au

130 Goodwood Road
Goodwood SA 5034
Australia

South Australia's Biggest Range of Models, Kits & Accessories.

MODEL MANIA
'FAIR TO MODELLING'

SHOPS 3&4, 201 MAIN SOUTH ROAD
MORPHETT VALE S.A. 5162
PH/FAX (08) 83824957
EMAIL - INFO@MODELMANIASA.COM.AU

---

## Remember to SafeTag your Electric model. It's Mandatory at HMAC!

More information at www.holdfastmac.asn.au/technical-articles/safetag-system/

**HOLDFAST MODEL AERO CLUB**

P.O. Box 94
O'Halloran Hill
S.A. 5158

Club Phone: 08 8377 2708
Web: www.holdfastmac.com.au

Newsletter Editor
buzz@itapps.com.au

Newcomers to R/C modelling are catered for by setting aside every Sunday morning from 10 am when qualified instructors will teach all aspects required for the safe operation of the model. During the training period no other models are allowed to fly, ensuring the least possible distractions to the student.

**SCHEDULE OF EVENTS**

- Wed Oct 1 - MASA Meeting
- Fri Oct 3 - Social Meeting
- Sun Oct 5 - Pylon & Combat
- Wed Oct 15 - Committee Meeting
- Fri Nov 7 - HMAC Auction
- Sun Nov 9 - Scale Fun Fly (Strath)

## Pylon & Combat Competition Results - September 7, 2014

Due to high winds, the Pylon and Combat events were cancelled on this day

## Flying Achievements

| | | |
|---|---|---|
| Solo | **Joseph Faulkner** | Instructors - Graham Paterson, Bob Tait |
| Solo | **Ray Vincent** | Instructors - Graham Paterson, Les Mepham |


Ray Vincent being presented with his Solo Certificate by President Kingsley Neumann

## Instructor Roster (October - November)

| Date | Instructor | Instructor | Assistant |
|---|---|---|---|
| SEP 28 | John Jefferson | Peter Robertson | Max Thomas |
| OCT 5 | Matt Jamieson | Graham Paterson | Ted Carter |
| OCT 12 | Ross Lloyd | (Open) | Trevor Baudinette |
| OCT 19 | Kingsley Neumann | John Jefferson | Max Thomas |
| OCT 26 | Peter Robertson | Matt Jamieson | Ted Carter |
| NOV 2 | Graham Paterson | Ross Lloyd | Trevor Baudinette |
| NOV 9 | Kingsley Neumann | (Open) | Max Thomas |
| NOV 16 | John Jefferson | Matt Jamieson | Ted Carter |

Our thanks go to those keen instructors who offer their assistance to train new pilots. Some even turn up even when they are not rostered on. Advanced Flying Training is available on request, so if you want to brush up your flying for a Wings test, please arrange a session with one of the Instructors. There are still a number of “Solo Only” flyers out there who could easily qualify for the Bronze Wings.