



The newsletter of the Sport Aircraft Association (Auckland Chapter) Inc

# Sport Aviator

July 2011



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- Aviation Pioneer – Trajan Vuia
- Member Profile – Kevin Paulsen

[www.saaauckland.org.nz](http://www.saaauckland.org.nz)

# Committee 2012

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## **Front Page**

The Shearwater Amphibian.

Reviewed in this month's newsletter.

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## Next Meeting

**WHEN:** Thursday 28<sup>th</sup> July 2011 - 7:15pm

**WHERE:** Auckland Society of Model  
Engineers Club Rooms  
Peterson Road, Panmure Basin  
Mt Wellington

**SPEAKER:** Mike Tunnicliffe

**SUBJECT:** Mike's Steam Powered Pietenpol

Mike Tunnicliffe will talk on the unusual power plant he is building for his Pietenpol aircraft, a 3-cylinder radial steam engine with a monotube steam generator. Mike's talk will cover the history of steam powered aircraft, modern steam technology, some of the pitfalls, how he came up with the design, etc. The partly built engine will be on display.





### President Cyril is off to Oshkosh

Chapter President, Cyril Wright, sent out an email during the month to say that he has decided to extend

his stay overseas and take in the sights and sounds of Oshkosh 2011. (Lucky Bugger). He wrote:

“Hi All

I have decided to stay on in the USA and go to Oshkosh and I was wondering if anybody else is going.

I will be in Baltimore on the weekend before and then I will make my way to Oshkosh.

You can contact me on my USA Ph 657 203 1371 by text or ph or text me on my NZ ph +64274975213 or by [return] email.

Look forward to seeing some of you there.

Have fun.

Cyril”

I am looking forward to seeing the photos and hearing a full report at the August Chapter meeting. Ed

## From The Editor



Well, winter has definitely arrived this past month with the temperatures dropping and a whole lot of rain falling on our fair city.

I don't know about the rest of you guys but I certainly find it very difficult to get motivated to go out to the shed and work on the KR on these cold winter evenings.

With an unlined shed it is not very conducive to doing anything but staying in the house and trying to keep warm. I do try to remind myself whenever I start to feel this way that provided I do a little work on the KR as often as I can, then eventually I will get it completed however this is not always enough to convince me to wrap up warm and go out to the shed of an evening.

I have been keeping busy however working on the Chapter newsletter. We had a good response from members this month and this has allowed me to put together an interesting array of articles and news for you to peruse before our meeting on Thursday.

I have included a summary of the Shearwater Amphibian presentation which Martin Ferrand and Alan Coubray gave at the June Chapter meeting. Martin and Alan gave an very interesting presentation on the process they went through to design and build the Shearwater plus the events subsequent to its completion. If you missed last months meeting this will give a summary of what was covered.

There is also an interesting article sent in by Chapter member Liviu Fillimon about a little known pioneer in the world of aviation by the name of Trajan Vuia. I had never heard of this gentleman or his story until I read Liviu's article. It is definitely worth a look.

The member profiled this month is our Chapter metal skin mentor, Kevin Paulsen. Kevin very kindly allowed me to interview him about his involvement in the SAA and aviation in general and also showed me round his immaculate RV-6 ZK-PRV.

Peter Armstrong has sent through some great pictures of his now fully assembled DynAero MCR-4S. I think you will agree that this is one gorgeous aeroplane when you see the pictures.

Looking forward to next month's newsletter, I would again encourage those of you who have not filed an update for a while to do so for the next newsletter. As Gordon noted in last months newsletter, you don't need to create William Shakespeare like prose, just a couple of paragraphs in an email to me with maybe a photo or two attached is all that is required and I can take it from there.

Also remember any titbits of information regarding the sport aviation community or articles you see on the internet will be interesting to others and help provide interesting fill for the newsletter.

Well enough from me. I hope you enjoy this month's newsletter and I look forward to catching up at the meeting on Thursday.

Cheers  
Gavin

### Cyril Wright Away In London

With Cyril Wright in the UK, Evan Wheeler, the Chapters newly elected Vice President, welcomed everyone to the meeting and gave a brief introduction regarding himself and his aircraft.

### Missed Appointment

Gordon Sanders noted that at the Chapter AGM we had omitted to appoint a person to review the Chapter accounts for the year ending March 2012. Gordon had spoken with Dave Cogan, who performed this task last year, and he was willing to do so again. To formalise the appointment, Gordon Sanders moved:

**'That Dave Cogan be appointed to review the Chapter's financial accounts for the year ending 31st March 2012 and to report to the AGM on that review.'**

This motion was seconded and accepted by the members.

### Chapter Data Projector

At the April meeting the Chapter voted to purchase a data (video) projector for use at Chapter meetings and other SAA events. The purchasing was delegated to Peter Armstrong who had the trade connections and the knowledge. Peter selected a reasonably high performance unit, so as to future proof it as far as possible, and also purchased a small amplified speaker system to complement it. He was able to obtain a good price, approx \$200 below normal trade. Wonder whose arm got twisted? The projector and speaker system were brought to the June meeting where they were used for the first time.

It was necessary to decide whether the new equipment should be kept in the lock-up 'library' cabinet in the club rooms or be held by a member or group of members. To facilitate this discussion and decision Gordon Sanders tabled the following motion:

**'That a kit comprising the data projector, sound system and appropriate cables and connectors be assembled in a protective case and held in safe keeping by a member or group of members. This member or group to ensure that the kit is at each Chapter meeting 10 minutes before the scheduled start of the meeting and that it is transported to and returned from other SAA or related events where it may be used for the benefit of SAA members. The member or group holding the projector to be appointed from time to time by the committee.'**

Speaking to the motion Gordon raised the following points in favour of the kit being held privately:

- Provides safer keeping than leaving it an unoccupied building, even when in a locked cabinet.
- Allows easy access to the kit when required for outside events, e.g. Black Sands fly-in and SportAvex.
- The holder(s) would have the opportunity to familiarise himself or themselves with the operation of the kit.

He also emphasised the liability that would be placed on the private holder or group, including:

- The holder(s) must be in a position to guarantee that the kit will be at every meeting irrespective of whether or not a particular individual attends.
- It must be at the venue 10 minutes before the start of the meeting to allow time for it to be set up and operating with whatever computer etc was being used. This was especially important as a courtesy to guest speakers and even to our own members.
- The Chapter does not insure its assets for the very good reason that it would be uneconomic to do so. If loss of, or damage to, the kit occurs the Chapter can expect to carry the cost unless it can be proven that the loss or damage was directly attributable to the illegal action or gross negligence of the member(s) holding the kit.

Following discussion the motion was passed. It was then up to the committee to decide which individual or group would initially hold the equipment and assemble it into a suitable transit case.

Explaining that de-facto regional groups tended to form within the Chapter from time to time, then dissipate for a variety of reasons, Gordon used a previous Greenhithe group as an example. He felt that such a group, which always had members at meetings or functions, would be well equipped to provide the service required. He offered the services of the Howick-based group who currently maintained the comms van, if selected. Peter Armstrong also offered his services, with the equipment to be brought to meetings by David Wilkinson (who lives near Peter) if Peter was unable to attend. Peter was selected as the first holder of the kit. It is anticipated that its first use outside of Chapter meetings will probably be to Black Sands in Nov, followed by SportAvex in February. The Auckland Chapter further supporting outside events.

### Historic Film Conversion

Don Wilkinson reported that he has had two of the old films donated by Robin Hickman converted to DVD's. Depending on the quality of these conversions he will have the others converted in the next couple of weeks. The cost will be about \$150 per reel of film.

# 5 Last Meeting Summary Continued

## Mercer Airfield Update

Evan Wheeler reported that Mercer Airfield has been purchased by Niel Young of Pukekohe and his partner Dee Bond. They intend to have the Catalina, currently based at Ardmore, operated from and hangared at the field.

A new sealed strip suitable for the Catalina is to be built in place of the current grass strip with the existing sealed strip being used as a taxiway.

Additional hangarage is to be constructed similar to those at Te Kowhai while the old packing shed will have doors fitted to make it more weather proof for aircraft storage.

Neil would like to see the airfield used by all facets of the aviation industry and is looking at opening a Cafe, Hostel and RV Park as well. The parachute school will probably continue under some sort of lease agreement.

Evan said that Neil is looking for independent operators to come on board and set up operations at the airfield.

## Aircraft Maintenance Period Extensions

Alistair McLachlan spoke about rules governing flying experimental aircraft beyond current maintenance periods.

Alistair informed the meeting that it is permissible for the Airworthiness Certificate of an experimental aircraft to be extended by up to 10% beyond the current due date but pointed out that any extension of time comes off the next maintenance period. Le cribbing of time from one maintenance period to the next is not permitted. ARA's and BRA's can also be extended by up to 35days.

Alistair noted extensions need to be recorded in the Tech Log but do not need to be approved by a LAME.

CAA Rules 91.605, 91.607, 91.611 and 91.615 apply.

## Visitors & Prospective Members

Visitors at July's meeting were Chris Rarere, Rod Wooller, Graham Turner, ex member Ian Davis and Tom Goddard.

Tom Goddard has indicated he will likely become a member with an interest in building a Rand KR-2S.

## Guest Speakers

Martin Farrand and Alan Coubrey were introduced by Alistair McLachlan as the guest speakers for the meeting.

Alan is a current chapter member and has built and flown a Sonex and a Safari helicopter. His current project is an RV12. Martin was a chapter member and owned and flew the Gerry Astley built Coot amphibian for some

years. Both were involved with Bill Townsend in the design and construction of the 4 seat Shearwater composite amphibian.

Martin and Alan spoke about the development of the Shearwater, its initial testing, the purchase of the prototype by a group which intended to manufacture the design commercially and its subsequent repurchase by them to use as a 2 seat experimental category one off aircraft. (A more extensive report is included later.)

Martin is also part owner of the classic six metre yacht Scout about which he also spoke. The yacht is currently in Helsinki for this year's world championship.

Scout was designed to the 6 square metre rule and built by the Ewen brothers in Whangarei in 1909. For the majority of her life though Scout has cruised and raced from Auckland. Originally rigged as a gaff cutter, the current Bermudan rig was installed by Ted Hayes in the late 1940s. Scout's cabin top was returned to the original design in 1989 having been modernised in the 1950s. Apart from recent fibreglassing of the decks, the single skin kauri hull is original and sound.



An early image of Scout.



A more recent image of the Scout in action.

## From Don Wilkinson. Update on ZK-TNT & Wanganui Spitfire

"Starlet TNT built (beautifully) by Alfred Hirzel and now owned by David Wilkinson is coming home for a "birthday" with a lower canopy, changed cowling and paint to resemble TOY.



I spoke to Ron Simmons who is a professional A/C painter and his recommendation for the DIYer is Dulux X10 house paint. Probably similar to the Solaguard I used on TOY (which by the way, is getting better with time). [It is] more durable and fuel resistant.

Photo below shows David with a definite "are you sure we should be doing this?" look on his face at North Shore.



Also attached are photos of a Spitfire I stumbled into at Wanganui a couple of weeks back. I think it is about 75% scale and is powered with a Chevy V8.



The guy in the hangar said when asked ... "she honks"



That's got to be one step up from a Starlet.  
Don Wilkinson"

## A novel method of storing aircraft

Peter Armstrong spotted this rather novel method of aircraft storage and sent through the photo below. It might be a useful idea for those of us suffering from hangar overcrowding. The Zenair CH601UL Zodiac carries a Netherlands Microlight registration.



### Paul McGruer's Pitt's Special ZK-MPM

After last months newsletter Stuart Mackereth sent me an update to say Paul McGruer's Pitts Special has been completed and I should email Paul for an update. Paul subsequently responded as follows:

"[The Pitts has] been a back burner project for many years. I spent some time out of the country working after retiring from Air NZ and have only got back to it recently.

Richard Hood is doing the test hours which are subject to the whims of the weather and Air NZ rosters.

Attached are a couple of pics.

Regards Paul McGruer"



### Alan Coubray's RV-12

Alan wrote...

"I would like to update you on my status.

I have sold Safari helicopter ZK IQP and am currently building a Vans RV12 to be registered as ZK YRV. The RV12 is almost complete, just the paper work to do and final inspection. Then test flying.

I am going to Finland with Martin Farrand for 6 weeks sailing, the project is currently on hold awaiting my return.

Cheers Alan Coubray"

### Warren Sly's T51 Mustang

Warren sent through the following update on his T51 Mustang project:

"The T51 is slowly emerging from the chrysalis.

Skinning of the fuselage is now almost complete. It has been a big job due to the change to butt jointing. I hope it's worth the effort.

Wiring, Engine and Avionics are now all installed."



## Update from Peter Armstrong on his Dyn Aero MCR-4S – ZK-PSA

“Please find attached today’s photos. This is the first time ZK-PSA has been fully dressed fully painted.

Norm Bartlett took it for his first familiarisation taxi today. The aircraft tracked straight and true, with only a couple of minor things found which will be tidied up.

I have now sorted out my electronic Vertical Power VP-X unit and solved the last of my challenges with a software update.

The aircraft also received its Certificate of Airworthiness from Tony Schisca of the CAA last Wednesday.

I have swapped hangars with David Rose so I have all-weather access. The Starlet Lane taxiway is just too bogged at present for me to use safely. We are meeting with Ardmore management on Thursday to have this matter resolved.

Cheers Peter”





### Anonymous Update

"Heard on the Grapevine that some six or so of our older chapter members are looking at projects other than building another aircraft and their interest has turned to HOVERCRAFT.

One member even has a set of plans and has constructed a small model to assist him in building the real thing.

The advantage of this form of transportation is that there are virtually NO RULES. No worrying about medicals either. The designs they seem to favour are the ones from SEVTEC, they can be obtained as plans only.

The advantage of a group building at the same time is the possibility of cost saving through bulk purchase of items such as engines.

One of our problems in attracting new members is the high cost of building and maintaining an aircraft. Maybe this is the way to pass on the "disease" of aviation. Hovercraft are of course supported by a cushion of air and use a propellor for forward movement so it's close to flying. There are some which have stub wings which perform even more like the real thing.

Anon"

### Pikes Point To Mercer By Jon Farmer

At the last meeting, we had an update on the situation at Mercer airfield which seems to indicate it will soon become operational again. Some of our members may not be aware of our connection with the Mercer airfield and our forced departure from Pikes point airfield in 2005, so here is a brief resume:



SAA Clubrooms at Pikes Point.

Both SAA and the Auckland Regional Microlight Aircraft Club (ARMAC) had clubrooms at Pikes Point on the shores of the Manukau Harbour at Onehunga. These two buildings were joined by a deck so that we held meetings in one and supper in the other. In addition there were some 20 assorted hangers of various sizes and when we were evicted, all these buildings had to be disposed of.

At the time, Mercer airfield was thriving and the owner, Jim Lyver, was keen to purchase the two clubrooms and the largest hanger which had the door width and height to hold two Cessna 172 size aircraft. These buildings were duly trucked to Mercer and the ARMAC clubroom became a bar/restaurant and the SAA building was used for parachute packing. The whereabouts of the dismantled hanger is a bit of a mystery as it was never re-assembled at Mercer.



Pikes Point farewell fly-in

ARMAC dismantled their hanger and transported it to Mercer but it was never reassembled. Instead, the club came to an arrangement with Jim Lyver to lay a concrete floor in the large packing shed, already on the airfield, in exchange for a year's free hangarage. The year has extended to almost five and there are still two or three microlights sitting in the back of the packing shed/hanger. It is a great arrangement except when you need your microlight out and the Porter jump plane is parked in the front half of the hanger.



ARMAC preparing to concrete the floor of the packing shed.

Mercer airfield is about a 50 minute drive down the motorway from Greenlane. It consists of a 1050m, 09/27, runway with parallel grass and sealed strips, although the 'seal' is breaking up and the grass is a bit rough. A drainage ditch, crossed by a wooden bridge, separates the strip from the buildings, which includes the old Mercer pub (used as accommodation for 'meat bombs'), an office building, a storage shed, the large hanger with parachute packing room attached and the two clubrooms. Separate and not for general use is the original farm house complex.

## Chapter Projects

Make/Model	Rego	Member	Status
Auster J5F	BDY	Les Wilson	Restoring
Bede BD5	ZIP	David Rose	Building
Cessna 150L		Craig Thomas	Repairing
DeHavilland DH-83C	AQB	John Eaton	Restoring
Dyn Aero MCR-4S	PSA	Peter Armstrong	Building
Europa XS Tri-gear	ROB	Rob Waters	Building
Fisher R80 Tiger Moth	CCC	Jon Farmer	Rebuild
Jack Thompson 1		Kevin Moir	Building
Lancair 235		Rod Sullivan	Building
Menstrel HN-700		Stephen Chilcott	Building
Osprey 2 Amphibian	XRT	Richard Thompson	Restoring
Pietenpol Aircamper		Mike Tunnicliffe	Building
Pitts S1-SS	MPH	Stuart Mackereth	Building
Rand KR-2	CCK	Walter Reinauer	Repairing
Rand KR2S		Gavin Magill	Building
Rearwin Sportster(37)	ALX	Tony Payne	Rebuild
Rutan Long Ez		Wayne Cunningham	Building
Sonex Tri Gear	PDB	Paul Blackmore	Building
Taylor Monoplane		Kevin Moir	Building
Titan T51 Mustang		Gary Mitchell	Building
Titan T51 Mustang	FDL	Warren Sly	Building
Van's RV-4		David Grove-Hills	Building
Van's RV-6		Ian Chapman	Building
Van's RV-12	YRV	Alan Coubray	Building
Waix		Bruce Turner & Chris Wade	Building

## Chapter Projects Other

Make/Model	Rego	Member	Status
Nexus Mustang	NEX	Stuart Wards	Plans
Rand KR2S		Karl Pudney	Plans
Pazmany PL2		Frank Ciochetto	Stored
Helicycle		Allan Cameron	Unknown
Murphy Rebel		Eric Breetvelt	Unknown
Safari Helicopter		Dick Ussher	Unknown
Witman W-10	RET	Cliff Bellingham	Active
ATEC Zephyr 2000S	ZFR	Kevin Hartley	Arrived

## Chapter Aircraft

Make/Model	Rego	Member
Aerosport Kahu Gyroplane	RCP	Chris Wade
Aircam	SUN	Cyril Wright
Airtrainer CT4 (Syndicate)	DGY	Norm Bartlett
Avid	PCM	Graham Smith
Bolkow Junior BO 208	CJF	Keith Trillo
Brantley B2B	INK	Nick Koreneff
Cessna 172	DKH	David Horton
Cessna 172D	CCI	Graeme Weck
Cessna C182	WKK	Brian Wigley
CFM Shadow C2	FSG	John Granger
Corby Starlet	TOY	David & Don Wilkinson
Corby Starlet CJI	TNT	Alfred Hirzel
CRICRI Cricket MC15	LBW	Neville Hay
Druine Turbulent D31	CFY	Kevin Paulsen
Europa XS	EPA	Gavin Lee
Falco F8L	TBD	Giovani Nustrini
Falco F8L	SMR	George Richards
Falcomposite Furio LN27RG	LLG	Giovani Nustrini
Fisher Dakota Hawk		Gary Mitchell
Grumman AA-IC Lynx	EFV	Brian Wigley
Grumman Cheetah AA-5A	ERJ	Chris Watkins
Isaacs Fury II	JHR	Rex Carswell
Jabiru J200	CHW	Chris Watkins
Jodel D18	OWL	Mike Tunnicliffe
Jodel D18	SCJ	Stephen Chilcott
Lancair 360	MHS	Norm Bartlett
Micro Aviation Bantam B20	XIE	Bob Syron
Mike Whitaker MW6S	MWS	Grant Sandiford
Morgan Aero Works Cheetah	CCB	Jon Farmer
Murphy Rebel	DKZ	David Horton
Murphy Rebel	WEM	Evan Wheeler
Murphy Rebel	WEC	Graeme Weck
Petrel Amphibian	JAQ	John Eaton
Piel Super Emeraude	FMM	Peter Nicholson
Piper Cherokee Archer I	DQX	Leo Johns
Piper PA38 112 Tomahawk	VBM	John Eaton
Piper Pacer PA-22/20	PAT	David Wilkinson
Pitts 12	PTS	John Eaton
Pitts		Paul McGruer
Progressive Aer Searey	REY	Gordon Swan
Ragwing Special	MIK	Bob Syron
Rans S6ES Coyote II	TNA	John Struthers
Rans Sacota S10	CLT	Craig Thomas
Safari Helicopter	IJE	John Eaton
Sequoia Falco F8L	TBD	Giovani Nustrini
Socata Tobago TB10	JIE	Stuart Wards
Sonex (Syndicate)	JQP	Paul B, Sandy W, Bruce T, Chris W, Gavin M
Taylor Coot A	JST	Alistair McLachlan
Taylor Monoplane	CRS	David Grove-Hills
Thorp S-18T	MBY	Mike Boyles
Titan T51 Mustang	WSV	Peter Walton
TL2000 Carbonsting	PLR	Phil Richards
Ultravia Super Pelican	JDI	Jon Farmer
Vans RV-7A	MIS	Dave Cogan
Van's RV-6	PRV	Kevin Paulsen
Zenair CH 601 B	ZXZ	David Rose
Zenair CH601	JFN	Peter Herrick
Zenair CH-601	JFN	Colin Herrick

If Chapter members are aware of any changes to or aircraft missing from the lists on this page please forward an update email to the editor at [gavin.magill@gmail.com](mailto:gavin.magill@gmail.com)

Martin Ferrand and Alan Coubray gave a joint presentation at the June Chapter meeting on the Shearwater Amphibian, an aircraft in which they have both had a significant hand in developing. The following is an overview of their presentation.



The Shearwater in flight.

### Background

Martin began the presentation with a little background as to how both he and Alan became interested in amphibious aircraft. He recounted how both he and Alan owned Coot Amphibians during the late 1980's. Alan had purchased his Coot off Jerry Astley while Martin had bought his from Lindsay Wheeler. Alan remarked that Martin used to fly his Coot as often as he could and would often fly it to work up the East Tamaki estuary, sometimes in less than optimal VFR conditions. :)

### Shearwater Origins

Martin then went on to recount how the development of the Shearwater really started with his trip to Oshkosh in 1993 where he saw the Seawind Amphibian aircraft that was displayed that year. He returned to Oshkosh in 1995, this time taking with him Bill Townsend. Bill was quite taken with the Seawind as well and on returning from Oshkosh he began to design and build models of amphibious aircraft layouts (canards, biplanes etc) with a view to

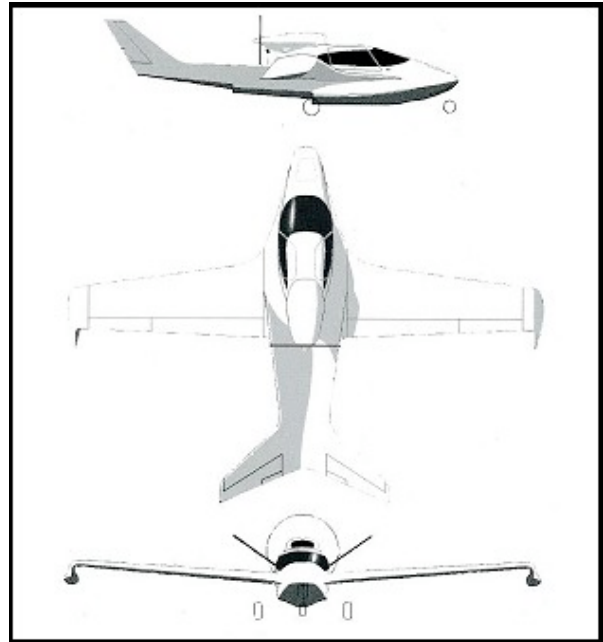


The Seawind Amphibian

creating his own amphibious design. This was the start of what would eventually become the Shearwater.

The models Bill built were used as design prototypes to prove the flight worthiness of the various configurations. Experienced aero-model pilot, Lionel Dickson, would fly the models for Bill out at Lionel's farm. Martin recalls that when they started testing out at the farm, models would often be flying along just fine when suddenly they would just fall out of the sky completely out of control. After much puzzlement and scratching of heads, Lionel eventually tracked the cause down

to interference to the radio control servo's coming from an automatic water pump on the farm which would switch on from time to time while the models were in flight.



Three Axis Views of the Shearwater.

Eventually, after some eleven models had been built and tested, Bill, Martin and Alan settled on a final design and they formed a syndicate to start building the aircraft. Construction was started on the project around 1998 and it eventually took around three years to complete.

### Design Features and Challenges

As for the design itself, Martin remarked that one of the more interesting features Bill included in the Shearwater is that the cockpit dimensions are modelled on the Honda Accord car. This has made for a very spacious cabin which is some 50 inches wide at the pilot's position.



The spacious Shearwater cabin

# 12 The Shearwater Amphibian Continued

Martin also commented that the engine selected for the prototype, a 6 cylinder Franklin engine producing some 275hp, was a little underpowered for the design and that an engine producing 300-350hp would have been better.



He also described how the engine placement on the aircraft has changed somewhat as the design has matured. Initially the engine was set further forward of where it is now located and used a driveshaft to connect to the propeller. This design caused a number of problems with leaking seals on the driveshaft so the engine was eventually moved rearward and the prop brought forward so the driveshaft could be eliminated.

## Commercial Venture

In 2001 construction of the aircraft was completed and the Shearwater made its maiden flight that same year. A 100 hour test flying program was then started with flights being made out of Kawau Bay.

Martin then recounted how at about this time a couple of gentlemen from Christchurch became involved in the project wanting to build the plane commercially. After a period of negotiations, they eventually purchased the Shearwater off the syndicate with Martin and Alan taking shares in the new company as part payment. The new owners subsequently took the Shearwater to Oshkosh in 2005 where they managed to acquire many admirers and orders for two aircraft. Unfortunately, despite this encouraging start, the commercial venture never really got established and the company eventually folded so Martin and Alan subsequently retook possession of the Shearwater.

## Flying Characteristics

On the flying characteristics of the aircraft, Martin described the Shearwater as having very placid flying qualities with a very low thrust line.

As already mentioned the aircraft suffers a little from being somewhat underpowered and the engine has to work quite hard to get the aircraft up on the plane for takeoff. The



original IVOR prop was replaced with an EMT prop during testing in an effort to improve performance however this change has not made any appreciable difference.

The aircraft will liftoff at around 60 knots and cruise at about 110 knots. Martin feels the aircraft would be better served with a 300 to 350hp powerplant and these numbers would improve as a result.

The MAUW of the aircraft is 1400kg (3086lbs) however Martin says the aircraft is somewhat overweight. He said this is often a problem with prototype aircraft and if the aircraft had gone into production it would have been lightened considerably.

Martin recalled that after its first flight they also had a few bugs in the canopy latches to sort out but these problems were eventually resolved. Also during the initial flights, he recalls that when the engine revs were reduced below 2500rpm, the engine would die. This problem was eventually traced to a valve stem jamming in its guide. It turned out the valve guides were too tight and needed to be enlarged to correct the problem. Martin found it ironic that the only certified part on the aircraft, the engine, caused them the most grief.



## The Future

Since the winding up of the commercial venture, the Shearwater has been returned to an airworthy state and Mickey Neil has joined the syndicate. Andrew Buttle and Martin are now working though the 100 hour test flying program and the aircraft has completed some 20 hours on the airframe to date.

Martin says the Shearwater is a good concept but might have been better if it had been developed as a two seater rather than a four seater which then may have improved its marketability at Oshkosh.

He is, however, more than happy with the configuration of the aircraft as it currently stands. He did say however that both he and Alan have no intention of building any more Shearwaters but they do intend to continue flying the existing prototype through its test phase and continue to use it once it clears this hurdle.

The following article was submitted by Chapter member Liviu Filimon. It is the little known story of Romanian inventor Trajan Vuia who was one of the pioneering aviators in Europe at the turn of the last century. I would like to thank Liviu for researching and writing the article for us to publish.

## Trajan Vuia - The Romanian Inventor who first flew a powered airplane in 1906

By Liviu Filimon, Auckland



During the year 1906 Trajan Vuia made three major contributions to the world of aviation. Firstly he flew for the first time a heavier than air vehicle using only his on board installations; secondly his airplane was the first to fly with just a single propeller and thirdly his airplane was the first powered mono-plane aircraft to fly.

Trajan Vuia was born on August 17 1872 in the village of Surducul Mic in the Timis county of Romania. He dreamed from

childhood of being able to fly a machine made by him. He studied only the technical problems which particularly interested him, the most important one to him being the problem of flight.

After graduating high school in Lugoj (Timis county) he was unable to attend a school of mechanics due to financial constraints so had to attend and graduate from a faculty of law which in those times could provide him with financial support.

Vuia still continued his studies about human flight and designed his first flying machine which he called "the airplane-car". He tried to build this machine in Lugoj but, because he could get no material help, he decided to move to Paris. On the first of July 1902 he arrived in Paris. Vuia was hoping that in Paris (considered at that time the centre of the aeronautical world) he would find somebody interested in his project.

Vuia asked Professor Tatin to support his project but Tatin, known as a very good theoretician and experimenter, argued with Vuia that the flying machine he was proposing did not have a suitable engine (which was accepted by all constructors of flying machines at the time). Also it had only one propeller, while all aero-models which had flown thus far had had two parallel propellers rotating in opposite directions (for stability reasons).

Vuia continued to pursue his project however and submitted it to the Science Academy of Paris on February 16, 1903 with the title 'Project of an airplane-car'.

The special Commission of Aeronautics of the Science Academy of Paris considered Vuia's project a utopia. They rejected it with the comments: 'The problem of flight with a machine which weighs more than air cannot be solved and it is only a dream.'

Vuia did not give up and applied for a licence for his machine from the Office of Industrial Property in France and on August 17, 1903 he received this licence with the registration no. 332-106. It was officially published on October 16, 1903.

This flying machine was called by its constructor the 'Trajan Vuia 1' and was a high-wing, mono-plane aircraft.

The second difficult problem solved by Vuia around this time was the construction of an engine which could develop enough propulsive force to assure autonomous take-off.

During the autumn of 1904, he began to build an engine based on carbonic acid as fuel, another invention of his own and during the same year (1904) Vuia got a license for his invention from Great Britain.

It is now recognised that the first airplane engine, which appeared in 1903, was built by the Wright brothers. The second one, built by Charles Manly, was used by Prof. Langley for his airplane and with which he tried to fly, twice, in 1903 but failed. (This engine can now be seen in Washington at the 'National Air & Space Museum'). The third engine was Vuia's. It was the second engine in the world which worked on a flying machine (Vuia's engine is displayed in Paris, at 'Air Museum'; a copy of it is in Bucharest, at the 'Central Military Museum').

The propeller of Vuia's flying machine was built by Tatin who, seeing that Vuia's airplane was becoming a reality, decided to help him. The propeller was the only part of the airplane built by Tatin.

While he was building his airplane Vuia received a number of visitors including George Besancon and Santos-Dumont both well known personalities in aviation at the time. Most of them were shocked by the fact that Vuia had adopted a mono-plane solution for his airplane. All airplanes which had flown till then were built after Lilienthal-Chanute's double-plane idea. Vuia's argument was that he was inspired by nature (he used to say 'I have never seen a bird with more than two wings'). They were also worried because Vuia's machine had only one propeller so airplane's stability would be difficult to maintain.

The 'Vuia 1' airplane was completed in December 1905. Now Vuia had to choose a suitable place to test his machine; he found a plain near Paris called Montesson, where he would not be disturbed by spectators.

His first experiments began in December 1905 and in this period he used his machine only as a car; the wings were not yet fitted.

After he became a proficient pilot of his 'car', Vuia changed it into what he called an 'airplane-car' by adding the wings. In this configuration the machine was still used as a car only, until it could safely attain a speed of 40 km/hour (21kts) without using the engine at its maximum capacity.

By now no one, except one of the men who had helped him build the machine, was paying much attention of Vuia's experiments. However in February, after they started to hear of Vuia's successes, more people, including George Besancon and others, joined Vuia to watch his attempts. And then during February, many papers in France began to devote large coverage to Vuia's machine.

Finally on March 18, 1906 Vuia considered the weather to now be warm enough, and decided to make his first attempt at flying. He decided to make his attempt in the afternoon and so at 3p.m. he started his engine. Within moments the machine began to move and after accelerating for about 50 meters the 'Vuia 1' left the ground and flew at a height of about 1 meter. After just 12 meters of flight however some problems occurred with the engine and the propeller stopped and the 'Vuia 1' landed.



Vuia 1 Specifications

Span:	8.70m (28.7ft)
Length:	5.65m (18.6ft)
Height:	2.90m (9.5ft)
Lifting surface:	20sqm (217sqft)
Engine:	20hp at 450rpm (using carbonic acid fuel)
Thrust:	45kgf (99.2lbf)
Empty Weight:	195kg (430lb)
Pilot Weight:	56kg (124lb)
Total Weight:	251kg (554lb)

A second flight experiment was then attempted on the 6<sup>th</sup> of May 1906. Vuia was experimenting with various angles of incidence in this flight when the left wing bent almost vertical.



Further flight experiments also took place on the 24<sup>th</sup> of June, and the 1<sup>st</sup> of July. All these experiments and a summary of the results were communicated to "L' Aerophile" (Commission for Aeronautics) of the Science Academy of Paris in a letter dated 8<sup>th</sup> of July 1906.

Vuia made further

improvements to his airplane after further flights on the 12<sup>th</sup> and 19<sup>th</sup> of August 1906. These included a new engine installed

using the same principle but with an increase in thrust and rpm. Also added at this time was a rear horizontal stabilizer.

On the 19<sup>th</sup> of August Vuia flew at the height of about 2.5 metres for about 24 metres after which the machine hit the ground damaging the propeller, a wheel and a shock absorber. This damage would delay any further attempts for improving his design.

Once again, the test flight results were communicated by Vuia to the French Academy of Science in a letter dated 25<sup>th</sup> of August 1906.

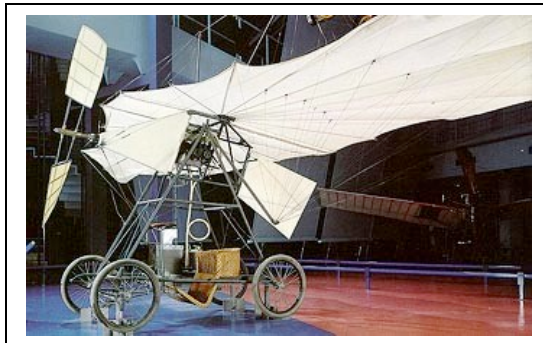
Six months after Vuia's first flight another pioneer of aviation, Santos-Dumont, succeeded in a similar attempt. Dumont is sometimes quoted as the first who flew using only his on board installations, because his flight was officially controlled, but Vuia had flown many times previous to Dumont.

In 1907 Vuia flew many more times. A notable event took place on March 27 when Vuia, Santos-Dumont and Bleriot all attended an aviation meeting at Bagatelle (near Paris). At this event it was Vuia alone who succeeded in his attempt to fly due to his technical improvements. Santos-Dumont and Bleriot were not able even to take off.

Santos Dumont made only three flights during 1906 in the first biplane he built (named No 14 bis, as it followed his previous attempt with a balloon named No.14). His first flight was on September 13, 1906 and was officially controlled. He then flew again on October 23 and November 12 1906. The following year Santos-Dumont gave-up his first airplane and built a new one, completely different.

In 1907 the number of autonomous flying machines increased rapidly; Charles Voisin flew on March 16 and 30, Louis Bleriot on July 11, 25, Henri Farman on September 30 and Esnault-Pelterie in October. The first aerial trip was made by Henri Farman on October 30, 1908, from Bouy to Reims (about 30 Km). And the first aerial raid (Tourney-Artenay-Tourney, around 100 Km) was made by Bleriot on October 31, 1908. During 1908 Wilbur Wright, came to France and established a lot of records with his machine. It should be noted that all these pioneers flew double-plane airplanes.

Only Bleriot, after some unsuccessful attempts, adopted the same idea as Vuia (of using a mono-plane) in 1907. After 'Vuia 1', Trajan Vuia built the 'Vuia 1 bis' which was equipped with the same engine but was enhanced by his constructor, and the 'Vuia 2' which was equipped with a new engine built by the French engineer Leon Levavasseur. Vuia also built two helicopters in 1918 and 1922.



Trajan Vuia's monoplane today

## P51 Mustang Crash At Duxford

Most members would be aware of, or heard about, the crash of the P51 Mustang 'Big Beautiful Doll' at Duxford a couple of weeks ago.

Rob Davies was flying the aircraft when he was struck from below by a Sky Raider from the same formation. Don Wilkinson provided this bit of commentary which brings home just how small our aviation world really is.

“Our Mate Doug Pauling who spoke to us a month or two ago always goes flying in this P51 when in England.

Well sadly no more. But Doug still has his mate

Lucky

Cheers Don”



High definition versions of the images above can be seen at the following link.

<http://forum.scramble.nl/viewtopic.php?f=41&t=75882>

Video's of the crash can also be found at these links.

<http://www.youtube.com/watch?v=xctYWSuwoYA>

<http://www.dailymail.co.uk/news/article-2013219/Pilot-Rob-Davies-escapes-WW2-fighter-mid-air-collision-airshow.html?ito=feeds-newsxml>

## Electronic Flight Bags

For those who have attended meetings where Peter Armstrong has demonstrated applications running on his iPad, it would come as no surprise that the CAA is now calling for submissions on rule changes to permit these devices to be used in airline cockpits to replace the multiple kilograms of paper based manuals. There have been a couple of articles in the press about this recently.

<http://www.stuff.co.nz/technology/5261741/NZ-pilots-to-trade-air-charts-for-iPads>

<http://hothardware.com/News/Alaska-Airlines-Goes-Digital-With-iPad-Flight-Manuals/>

## Find Me Spot

Kevin Paulsen introduced me to an excellent alternative to the SpiderTracks hardware this past month.

The product is called FindMeSpot and is readily available in NZ. I had not heard of it before so thought I would bring it to the attention of members in case they are interested. <http://au.findmespot.com/en/>



## Other Interesting Links

For those interested in NZ Aviation films then this site is definitely worth a look.

<http://www.aviationfilm.com/>

John Struthers provided this excellent link to a YouTube video about Armadillo AeroSpace. Armadillo is a privately funded, US company developing rocket vehicles. This is a great video on the guys doing the engineering.

<http://www.youtube.com/watch?v=kOXAEBRR0dI>

This month we are profiling the chapter's Metal Skin mentor, Kevin Paulsen.



Kevin Paulsen

Kevin is the proud owner of Ran's RV-6 ZK-PRV and for anyone who has seen this aircraft in the flesh, most would agree that Kevin can very rightly be proud of his pride and joy. ZK-PRV is quite frankly, immaculate.

Kevin's background in aviation dates back to his childhood living on his parent's dairy farm in Muriwai. Like many a budding aviator, his interest in all things aeronautical started with the local Western Districts Model Aero Club where he regularly took part in club activities. His first real flying experience occurred during his third form year at high school when he had the opportunity to go for an introductory flight during the school activities week. His taste for flying wetted, Kevin then began learning to fly in earnest when he was 15. He tried very hard to go solo on his 16th birthday but was prevented from doing so by the then Ministry Of Transport not issuing him his medical until after he had actually turned 16. However he did go solo not long after and after three and half years of part time lessons, he earned his PPL in 1985.

About this time Kevin bought his first aircraft, becoming the proud owner of a Quick Silver microlight. Kevin says that flying a microlight like the Quick Silver is still for him, one of the most simple and enjoyable ways to experience the freedom of flying that he knows.

In 1988 Kevin purchased Murray Kirkus' Druine D31 Turbulent ZK-CFY and subsequently joined the AACAA/SAA the following year. Kevin recalls that as a 20 year old, the Turbulent gave him a huge amount of cheap flying freedom. This is reflected in the fact that he has accumulated more than 650 hours on CFY in the years he has owned the aircraft.



Druine D31 Turbulent - ZK CFY

For all that freedom though, the Turbulent was still a somewhat slow machine to get round in with a top speed of only 85kts. This limited Kevin's ability to get round the country as he would have liked and getting weathered in on a trip to Fairlie in the South Island in the late 90's and having to leave CFY in Fairlie for the better part of six months before he could retrieve it convinced Kevin that he needed a faster and more powerful aircraft.

Kevin's search for a suitable aircraft saw him settle on the Rans RV-6 as the best aircraft to meet his needs and he subsequently ordered the tail kit towards the end of 1999. Construction of the RV-6 took eight years to complete with ZK-PRV making her first flight in 2008.

Since that flight though Kevin has logged more than 500 hours in

PRV and visited some 117 aerodromes, airfields and strips around New Zealand.



ZK-PRV

Kevin says of his RV-6 that it is not often you find an aircraft which is genuinely good in all areas of the flight envelope. Usually an aircraft will compromise performance in some area to meet a design requirement but the RV-6 seems to lack any such limits and, in Kevin's considered opinion, can rightly be called a true all-rounder.

The aircraft itself is fast and powerful but at the same time light on the controls and very responsive. In the cruise it can achieve fuel usage as low as 24-27 litres per hour from its 160hp IO-320 depending on the cruise altitude. Kevin tells of a trip he recently made from Ardmore to Motueka during which he used only 55 litres of fuel in a flight lasting just 1 hour 50 minutes.



The RV-6 Office with its dual Dynon displays.

About the only fault, if you can call it that, is the RV's sensitivity to uneven surfaces when landing on sealed runways. The aircraft will readily bounce if the surface is rough but Kevin says this can generally be countered by landing on two wheels rather than three.



For Kevin however, the RV's biggest plus is its long legs and how it makes the whole of New Zealand so accessible. To highlight this he tells of a trip he recently made to Karamea on the West Coast of the South Island. Kevin flew down to buy fresh whitebait for lunch but was disappointed to find none on sale when he got there so ended up buying fish n chips instead. He then turned round and flew back to Ardmore in the afternoon. With the RV's power and range this kind of trip is readily achievable.

For his day job, Kevin is LAME qualified aircraft engineer currently employed by Aero Technologies at Ardmore airfield. Kevin has been with Aero Tech since the company took over Aeromotive in the late 80's. Kevin reckons he came as a package deal with the tools. : ). He completed his LAME

qualification while at Aero Tech and this is where he remains working to date.

When asked what he would recommend to any would be builder he says his best piece of advice would be to make sure you purchase a pre-drilled kit if you choose a metal kitset. He says that if he had waited 18 months for the pre-drilled version of his RV-6 kit he would probably still have completed the build quicker than the un-drilled kit he purchased.



Kevin at home in his favourite office.

I asked Kevin to relate his best

flying experience to date and after puzzling over this for a bit he said the night flight he made on New Years Eve 2011 followed by an early morning flight on New Year Day 2011 is probably his most memorable flight to date. The evening flight on 31 December 2010 saw him take off and fly into the Auckland city MBZ where he circled round watching the fireworks being launched from the Sky Tower. He then followed this with a pre-dawn flight the next morning that had him over Whitianga at 6000 feet watching the sun come up on the New Years morning. In his words "a pretty magical experience".

Kevin very kindly took me for a flight in PRV after our interview and I would like to pass on my sincere thanks to him for an absolutely awesome flight. The mix of the RV's smooth, quiet power and a crystal clear morning over Ardmore made for a magical flight.



**For Sale****Engineer's Work Bench For Sale**

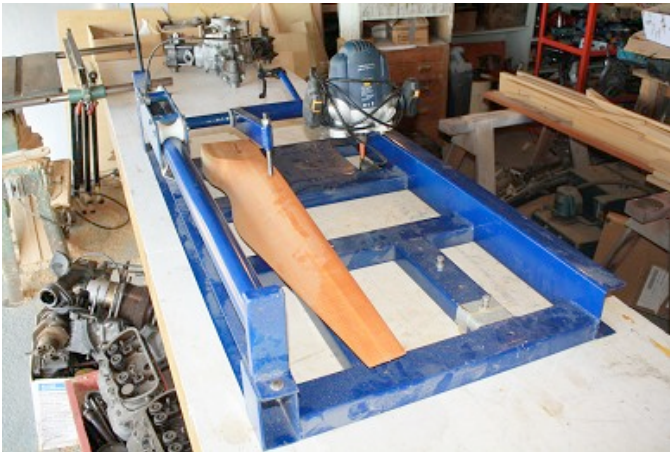
Dimensions: 2.9m x 900mm x 880mm high.  
Bench Top: 45mm thick wood with 1.5m x 900mm  
steel plate on one end.  
Frame: 75mm angle iron with six legs.  
What offers?  
Contact: Jon Farmer  
Phone: 09 5200641  
Email [jk.farmer@xtra.co.nz](mailto:jk.farmer@xtra.co.nz)

**For Hire, Rent or Lease****Hangar Space Available**

Ardmore airfield  
No planes to move, easy doors.  
Price negotiable  
Call David Rose on 09 5341124, 0274 348 081  
or email [roseco@paradise.net.nz](mailto:roseco@paradise.net.nz)

**Available For Use****Propellor Replicator**

Mike Tunnicliffe has a propeller replicator available for members if they wish to fabricate their own props. The replicator comes with a printed instruction manual and Mike will be available to offer guidance in its use as well.

**Items Wanted**

If members have anything they would like to advertise in the Classifieds section, please send an email with details to [gavin\\_magill@gmail.com](mailto:gavin_magill@gmail.com).

## Chapter Events

2011

**Jul 28 Chapter Monthly Meeting**

Mike Tunnicliffe will talk on the unusual power plant he is building for his Pietenpol aircraft, a 3-cylinder radial steam engine with a monotube steam generator. Mike's talk will cover the history of steam powered aircraft, modern steam technology, some of the pitfalls, how he came up with the design, etc. The partly built engine will be on display.

**Aug 25 Chapter Monthly Meeting**

Guest speaker is Peter Armstrong who will talk on his DynAero MCR 4S from France which will, by this date, hopefully be well into its flight testing phase.



If Chapter members are aware of any other events that could be of interest to others please pass the details on to Gordon Sanders at his email address - [gordon@sanders.gen.nz](mailto:gordon@sanders.gen.nz)

## Aviation Calendar

2011

**Every Sat Dargaville Aero Club**

Manfred reports that the place is buzzing every Sat, wet or fine, windy or calm, and that the \$10 lunch at 12.30 is good value. Club is on the web at [www.goflying.co.nz](http://www.goflying.co.nz). If a group is going please have the courtesy to ring in advance so the cook expects you. Contact Murray on 027-478 4308 or the club house on 09-439 8024.

**Jul 22-31 EAA 2011 AirVenture Oshkosh**

Oshkosh, Wisconsin, USA  
Marketed as "The World's Greatest Aviation Celebration", Oshkosh has it all when it comes to anything aviation.

**Aug 7 Foxpine Dawn Raid**

Foxpine, Foxton

Free cooked breakfast and no landing fees for dawn raiders. Prizes for first to arrive, furthest distance travelled, spot landing, etc.

For more info contact Jennifer 021-429931, Stan 021-0453801; Peter 021-804733

**Sep 18 Warbirds Open Day**

Ardmore Airfield, Auckland

Norm Bartlett will be available for CT4 flights.

**Nov 11 Walshe Centennial Dinner**

MOTAT, Auckland.

Details to follow when arrangements are firmed up.

**Nov 11 13<sup>th</sup> Black Sands Fly-In**

Raglan Airfield, Raglan

More details nearer the date. Contact is Bruce Cooke on 021-112 2364.

2012

**Jan 26-30 SportAvex 2012 &**

**Tauranga City Airshow**

Tauranga Airport, Tauranga

**Tentative Schedule:**

Thu 26<sup>th</sup> Arrivals

Fri 27<sup>th</sup> Seminars & Flying

Sat 28<sup>th</sup> Seminars & Flying

Sun 29<sup>th</sup> Airshow

Mon 30<sup>th</sup> Fly Home

More info nearer the date.