

# On-the-Step

Newsletter of the Seaplane Pilots Association of Australia



## PRESIDENT'S REPORT

### MEMBERSHIP AND WEBSITE

The new SPAA website is now up and running. The domain will eventually revert to seaplanes.org.au but in the interim we are redirecting to the Wild Apricot domain. Many of you have already logged-on to the new website and updated your password and personal details. Thank you for that interaction. SPAA has received a pleasing stream of membership renewals since the launch. Once this process is complete we will better understand the depth of our membership. For those of you who have already paid your renewal fee, we thank you and commit to use it to improve the benefit you gain in being a member.

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### WATERWAYS ACCESS

Imagine a young family enjoying a weekend picnic beside a quiet lake, or fishing peacefully from a small tinny. It's a lovely day, and a faint noise in the distance attracts their attention. A Seaplane draws closer, then skims past at low level, then alights not far from where they are sitting. Very few people would complain about such an event; indeed most would find that it added some interest to their day out. Now picture the same scene with a Seaplane buzzing around at low level near, or on the water for an hour or more. It is understandable that anyone in close proximity would find that situation uncomfortable. Please be neighbourly, and respect the rights of other waterway users. If just one of us behaves like a "Hoon" in close proximity to others, it can impact on our access rights as a group. Conversely: if we as a group are perceived as responsible companions, then our negotiations with authorities will certainly be more fruitful.

### ROSS VINING MEMORIAL SPLASH-IN

The 2016 Anzac Day weekend splash-in at Lake Boga was a great success. Thanks to all those SPAA members who flew or drove-in to this remote venue to help with the commemoration. In my mind, the highlight was a perfectly timed 11am tandem Buccaneer fly-past at the start of the Anzac Day Service. Looking forward to next year: 17-19 March 2017 will mark the 75th Anniversary of Lake Boga's inauguration. Check the SPAA Calendar for more information, and be sure to be there if you can!

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### WINGS OVER ILLAWARRA AIRSHOW

The Wings Over Illawarra Airshow was held under a changeable sky in early May. Stalwarts Donna Handley and Philip Dartnell manned the SPAA tent all weekend. Hundreds of airshow goers saw our display, exchanged details and asked questions. The proceeds of SPAA's merchandise sales at WOI will be used to buy folding tables and equipment for similar functions in the future. Our tent was strategically placed next to Matt Hall Racing's, and there is proof to support the rumour that Matt is a big fan of Donna's. Donna also developed a very close relationship with the Event Coordinator; hence plans are afoot to set up a three-ship Seaplane display at 'Wings' next year. Sincere thanks to Philip and Donna for volunteering their valuable time at WOI for the benefit of SPAA!

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### SHARING EXPERIENCE

After enjoying a few days on floats with Adam Holt in April, I can report that he has a nice pair of hands and lots

of patience. It's great for an amateur like me to fly with an experienced aquatic aviator; thanks Adam! Our association should engage more closely with all of the professional operators around Australia. We can learn a great deal from those who know the business well.

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### UPDATED SPAA CODE OF OPERATION

Duncan Miller has been carefully examining our organisational goals and operational code, and has recommended an update. This work has since been ratified by the SPAA committee, and is now on our new website for all to see. The new Code of Operation is a well-defined document.

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### A SUGGESTION:

Please continue to use all available means to determine your gear position prior to each landing. Mirrors and lights are nice, but a glimpse out over the gunwale might reveal a surprise that can't otherwise be perceived?

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*Safe flying!*

MALCOLM BURNS

RATHMINES NSW

0448 744 763

# A WORD OF WARNING

*Kevin Bowe  
Safety Officer, Vice President*

There is talk on the Intranet about possible tours overseas and while it sounds like a very exciting idea there is a very significant possibility of disaster. I am sure that on reflection Mike Smith would realise there were many sectors that, if he had a failure of some system or his engine and had to alight in unsuitable waters, he would not have survived.

The Tasman Sea is one such stretch of water where many small and not so small boats have come to grief!

Another factor is that Aircraft Insurance does not cover such flights. I also believe that Australian Regulations do not permit an Australian registered aircraft to depart Australian airspace without special clearance which would not be available for single engine VFR flights without a compelling reason.



The 2016 Rathmines Catalina Festival will be held on Sunday 30 October. SPAA will be encouraging members and guests to attend at Rathmines from Friday 28 October with BBQs evening movie screenings under the stars and lots of other attractions prior to the main event on Sunday.

<p><b>Friday Night 27/10/16</b>                      Premier of the Return of the Catalina Movie                      Sit down two course dinner                      \$50 per person</p>	<p><b>Saturday Night 28/10/16</b>                      Michael Smith Around the world in a Sea Ray                      Sit down two course dinner                      \$50 per person</p>
<p><b>Saturday lunch 28/10/16</b>                      BBQ by the lake                      \$15 per person</p>	<p><b>Sunday 29/10/16 Catalina Festival</b>                      BBQ by the lake                      \$15 per person</p>

# Ross Vining Memorial Fly-In



Thanks to the super efforts of Donna Handley and the wonderful hospitality of the Lake Boga residents, the Ross Vining Memorial Fly-in was an overwhelming success. With five Buccaneers, one Super Petrel, two Seareys, and one Bird Dog on floats, oh ... and one radio controlled float plane, attending, the seaplane community was well represented.

The weekend started a little windy, making for some challenging water taxiing for the Petrel which arrived in the worst of it. As with previous seaplane events at Lake Boga, the locals willingly offered the lakeside public street for aircraft parking, provided security, cars, accommodation, sausage sizzle, and even longer term accommodation on a front yard for one Buccaneer that decided to stay on after the event.

Socially it was a great success with pilots, partners and guests gathering in Lake Boga for a splendid dinner catered for by the ladies of the Golf Club, and in Swan Hill, organized by Donna, on Sunday evening.

By a fortunate coincidence around-the-world Searey aviator, Michael Smith, came to Lake Boga for the Anzac day ceremony on Monday, doubling the number of Seareys

attending. This gave us the opportunity for Michael to provide an impromptu talk about his incredible exploits.

We were very honored to have Ross Vining's sons, Ben, fly in for the weekend to help us honor Ross. Ben had asked to spread some of Ross's ashes over the lake that his father so enjoyed, which we did in a fly-past on Sunday morning under conditions that Ross could only have loved.



The Monday was Anzac day and a number of the SPAA members stayed for the service. Bob Priddle and Harvey Prior made a fly-past in their Lake Buccaneers to begin the memorial service, which was greatly appreciated by the organisers on what was their first Anzac service at the Catalina Museum.



A very big thank you to the Ladies from the Golf Club who catered for the Saturday night dinner; the Lions Club for morning and afternoon teas, and the Sunday sausage sizzle; Dave Marks (retired local police officer) and Ross Pfeiffer (Museum Managers) who supplied security and transport (Ross also provided a home for the Handley's plane when it decided to stay on); Daryl Alan (Museum Manager) who organised morning

and afternoon tea and the tour of the museum; Les Bond (work horse) who fussed over us to make sure everyone was happy. We are indebted to all of these wonderfully hospitable people who made our Lake Boga experience so enjoyable. But first and last a great expression of thanks to Donna for making it all happen.



*The Anzac Service at the Catalina Museum*



*Talk about the wind beneath your wings*



*The locals offered their homes*



*They also offered their streets*



*The casting of Ross's ashes on Lake Boga*

# Checklist - again!

I know we have had many articles on checks and that is because failure to fully carry out checks is likely to be a key element in most seaplane incidents.

As much as I have promoted the memorizing of pre-flight, post-takeoff, pre-landing and various other checks, I have found that for me it isn't enough. I am sure I am not alone in finding myself halfway through a pre-flight check when some interested passerby walks up and starts asking questions. Always wanting to promote a positive seaplane image I politely answer then after a few minutes distraction finish off my checks.

Twice I have been caught out as a result of this and it has convinced me that I need to have a physical check list as a backup to my memorized lists.

It is worth repeating the words of Jack Peters from a previous issue;

*"The Checklist  
 Could be defined as "HOW TO GET THINGS RIGHT"  
 This is what we need to do every time we fly an aeroplane.  
 Military pilots and Airline pilots with over thirty thousand hours flying time use a checklist whenever they strap on a flying machine.  
 Flying an amphibian means more than ever "we need something" to compensate for our human failure to get it right every time, therefore we need to use a checklist.*

*If the professions use a checklist then we must also.  
 How many times has the checklist got us out of trouble, how many times have we said, thank God I said water landing gear up!  
 Unless you are flying a complicated aircraft like an airliner or air force jet, your checklist can be a simple list of vital actions, something you can find and use.*

There are many forms a checklist can take from Rolodex to tablet, simple and complex systems. A simple, flexible and very inexpensive approach that I have adopted utilises a cut down spiral back binding which cost less than \$2 from OfficeWorks, with checklists printed on coloured paper and laminated to form a small flip chart. I used colours to quickly identify the category of checks, i.e. green for land takeoff and alightings, blue for water operations, red for emergencies, yellow for ground checks. The flip checklists are fixed to the top of the instrument panel with a small strip of Velcro attached to the spiral binding. The list are easily revised and replaced.

When I am using it, it hangs over the GPS of the instrument panel, making it hard to miss, but when the checks are finished it flips up to lie flat on top of the panel out of the way.

All up cost is less than \$5 and I have found it very easy and convenient to use.



# FLYING BOATS or FLYING DREAMS

Could futuristic seaplanes revolutionise air travel?

Friday 6 May 2016 8:31AM  
Antony Funnell  
Radio National



Engineers at Imperial College London have come up with the design and engineering specifications for a giant futuristic flying boat—one that could carry up to 2,000 passengers. Could this be the beginning of a seaplane renaissance? Radio National's Antony Funnell investigated.

It might seem incongruous to many residents of modern-day Sydney, but their beautiful harbour was once a busy airport. In the 1930s and '40s, flying boats were a regular sight on the city's famed waterway, a vital link between the nation and the outside world.

"If you are ever fortunate enough to see one flying, particularly some of the big ones, they were some of the most magnificent craft you've ever seen." Bryan Ribbons, aviation enthusiast and Sewings editor

'The Empire class flying boats out of Rose Bay, flying up to Queensland on their way to Singapore, actually took more international passengers out of Sydney than Kingsford Smith Airport,' says aviation analyst Ben Sandilands.

But that heyday of ocean-going aviation has now largely faded from our collective memory.

Sandilands, the author of aviation blog *Plane Talking*, has personal experience of the flying boat era. As a young lad growing up on the edge of the harbour he watched as the graceful seaplanes gradually gave way to their larger and technically superior land-based cousins—aircraft like the Lockheed Constellation and the Boeing Strato Clipper.

'It was basically economics, as well as changes in travel patterns,' he says, explaining their rapid disappearance.

'Flying boats were no good for serving inland cities like Frankfurt or Chicago or places like that. They were very, very slow. You had to build a very heavy structure, and of course the new piston-engined aircraft, the first to be pressurised in fact, were much lighter and more efficient for their time. So on every count, flying boats were in trouble.'

Today, seaplanes largely exist to service the tourism industry. In the Pacific, for instance, small seaplanes with ski-like floats are still used for island hopping or scenic flights, while the only large flying boats you're ever likely to see in a country like Australia are certain to belong to an aviation collector. If you're lucky enough, as I was recently, you can occasionally spot a restored Grumman Mallard G-73 flying over the Gold Coast from its home at Evans Head in northern New South Wales.

It's a similar story in the UK where aviation enthusiast Bryan Ribbons is based. Ribbons works for an aeronautics company and

also manages SEAWINGS, which he proudly boasts is the world's largest website for flying boat enthusiasts.

'If you are ever fortunate enough to see one flying, particularly some of the big ones, they were some of the most magnificent craft you've ever seen. I stood with my father... and watched the last Sunderland circle over Felixstowe and disappear into the history books. They were magnificent craft,' Ribbons says.

Like zeppelins, flying boats captured the public imagination and brought with them a sense of romance and adventure. But, just like airships, their time in the aviation sun was brief. And their popularity, according to Ribbons, was largely confined to the British Empire and the United States.

'The first true flying boat flew in 1913. By 1959, 46 years later, they were virtually obsolete,' he says.

'The only operational use of any flying boat in Europe was during the Berlin airlift. I think that was 1946/47. So they had a very short span.

'The Americans went wild on them with the Boeing Clipper, the M130 crossing the Pacific, and so on and so forth. We had our own Shorts aircraft here, culminating in the superb Shorts Empire that opened up luxury flying for the first time ever—virtually around the world. But that was all done in 46 years.'

## The seaplanes of the futures

As Ribbons points out, several modern seaplanes have been developed over recent decades for use as specialised fire-fighting or sea-rescue machines. But those planes have tended to be few in number and designed for a specific purpose, not for passenger aviation.

So while he spends his spare time obsessing over seaplanes, Bryan Ribbons sees no real operational future for his beloved craft.

Errikos Levis, an engineer and teaching fellow based at Imperial College London, is more optimistic.

Levis and his colleague Varnavas Serghides have designed the engineering specifications for a revolutionary new type of seaplane, one they estimate could carry up to 2,000 passengers—more than twice as many as a modern Airbus A380.

The new model breaks with the look and shape of a traditional flying boat. Their design sketches show a craft more reminiscent of a stealth bomber, with the body formed around a large, dart-like single wing: a shape known in the aeronautics industry as a 'blended' wing.

Levis estimates that by combining his new blended-wing with a conventional boat-like hull, the 'wetted' area of the craft can

be significantly decreased, thereby reducing drag on take-off. However, the design is not without its challenges.

‘The problem we had when we were dealing with the seaplane was that in addition to aerodynamics we had to think about seaworthiness for this craft as well,’ Levis says.

‘It became a problem of how to mix a boat hull with a plane so that it can operate best on both water and air. The aircraft as it looks now is basically a big wing, but its centre section has been shaped in such a way that it looks more like a high-speed craft.’

One disadvantage that any type of seaplane has over its land-based alternative is weight, because designing for seaworthiness, says Dr Levis, requires additional reinforcement to be added to the overall structure.

‘The penalty is typically of the order of about 10 per cent to the overall weight,’ he says. ‘However, because of the blended wing body concept and this approach that we took, we were able to better balance the aerodynamic loads and the weight of the aircraft and the hydrodynamic loads, and therefore we expect that there would be a substantial reduction in weight.’

‘We will never get to land-plane levels of structural efficiency, but when you are dealing with aircraft design, every little bit adds to the overall efficiency of the aircraft.’

But any additional costs from operating giant seaplanes could be offset, Levis anticipates, by future savings in airport infrastructure.

‘We are not talking about a zero cost, but building a runway does cost billions — it’s a very expensive capital investment. If you want to design a seaport, you would have to make some capital investment. However, the idea here is that this is expandable. All you need to expand is the onshore infrastructure. You will never need to increase land use further offshore,’ he says.



*A 1926 drawing of a Savoia-Marchetti S55 seaplane from Italy. (Getty Images/De Agostini Picture Library)*

‘And you don’t need to be restricted by so many take-offs per hour because if you have the water area available to you, you can definitely have two, three, four aircraft take off at the same time.’

#### Designing seaplanes for environmental preservation

At the heart of Levis’s plan is an environmental imperative. Larger planes, he reasons, would mean fewer flights and therefore less fuel consumption. And less need for costly on-land infrastructure could reduce the resources needed to sustain international and domestic travel and transport. In that vein, the Imperial College plan sees future seaports as the natural alternative—or supplement—to land-based facilities, particularly given that

many of the world’s major air hubs are located on the coast.

‘With the ability to take off and land from water you are not constrained by the strength characteristics of the runway. Basically the number of landing gears that you need is defined by the strength characteristics of the runway, and therefore you have to distribute the load of your aircraft so as not to break the



*A 1926 drawing of a Savoia-Marchetti S55 seaplane from Italy. (Getty Images/De Agostini Picture Library)*

tarmac,’ Dr Levis says.

‘With water there is no such issue, so you can scale it up as much as you want. The sky is the limit. And in fact if we are going for very large aircraft, I expect that take-off and landing from water is the only way to really go.’

But here’s the catch. Neither Errikos Levis nor his colleague expect to see their futuristic flying boat in the air, or on the sea, anytime soon. Levis accepts that the whole idea is far too speculative for current aircraft manufacturers, but he says the project is designed to get manufacturers and governments thinking about future alternatives to today’s fuel-inefficient aircraft.

‘What we were mostly doing there was showing off the scalability of our code. But we were also showing that with the ability to go that large you can actually have pretty substantial fuel saving and improvements in efficiency,’ he says.

For aviation analyst Ben Sandilands, any talk of the revival of the flying boat era is welcome. But Sandilands believes the ICL plan has two significant limiting factors—connectivity and congestion.

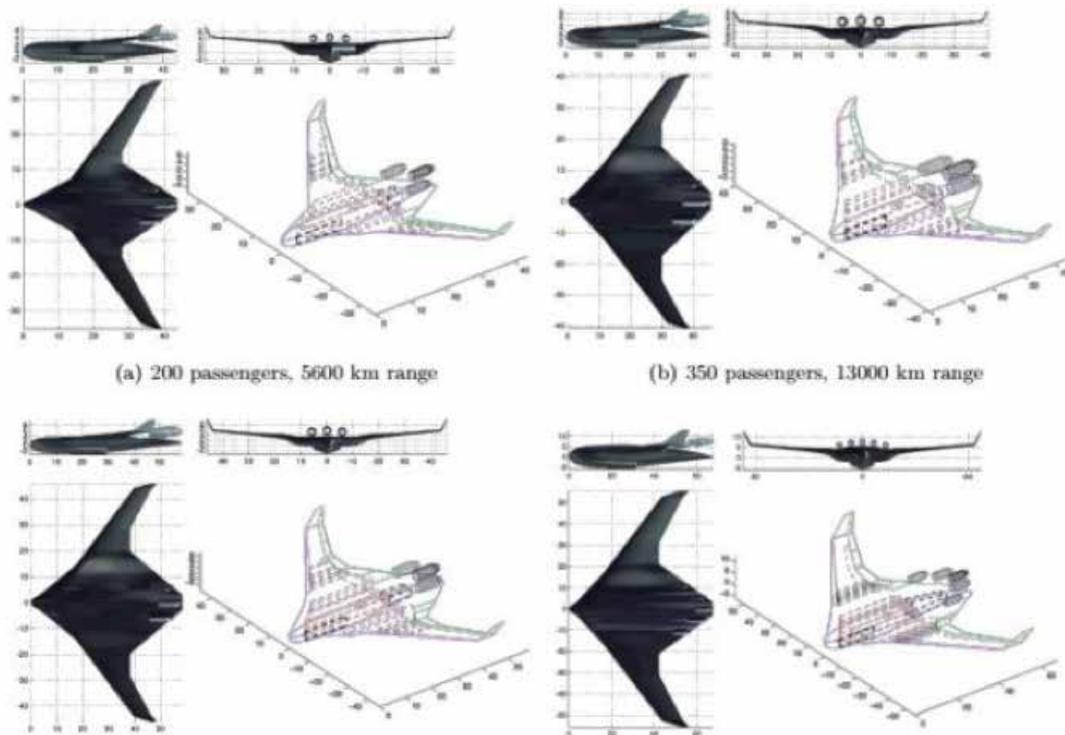
‘A large number of passengers are actually connecting to other aircraft. You can’t have an effective air transport system where people have to land at a landlocked airport ... and then travel to a flying boat base an hour away,’ Sandilands says.

‘And the other problem is, those larger areas of open ocean such as Sydney Harbour are just too busy these days. There are covered passenger ferries and lots of other things that would get in the way of flying boats, which do take longer to take off than land-based aircraft. That sadly will be enough to stop flying boats as large intercontinental aircraft ever coming back.’

Sandilands also suggests that the effects of climate change over future decades will see cities and their airports forced to move further inland and away from the coastline, thus reducing the desirability of a sea-based facility and once again making any suggestion of a return to the flying boat age unlikely.

A great idea in theory, but ‘absolutely frightening’ in practice

For SEAWINGS editor, Bryan Ribbans, there’s also a psychological



Sample designs of Dr Errikos Levis's modern seaplanes - it has a shape known as a 'blended' wing. (Supplied/Errikos Levis)

aspect to take into account.

'I physically flew in a Grumman Mallard some years ago, and do you know, it's frightening. Absolutely frightening,' Ribbans remembers.

'It's one of the weirdest things to fly in a flying boat. When you go to take off you are covered in spray on the outside, you can't see until you are on the step and moving at some speed, and coming into land is something else. So it's a very interesting prospect. And they don't ride storms very well.'

But that's not to suggest that there's absolutely no interest in building a modern seaplane. In fact, the Chinese aeronautics agency AVIC is just completing the final construction work on a new type of advanced flying boat, christened the AG-600.

Billed as a state-of-the-art amphibious aircraft, it was unveiled to the international media just a few months ago at a factory in the southern Chinese city of Zhuzai. And the Chinese government is determined it will go into operation sometime this year. AVIC says there's already domestic and international interest in their new aircraft. That may be true, but there's also suspicion.

Ben Sandilands says the 50-seat flying boat is widely speculated to have been developed with a strategic military purpose in mind, rather than as a passenger craft.

'This is a project that makes a lot of sense if you are building a chain of artificial islands in the China Sea and you want to be able to move troops and equipment in and out of them, even in the event that the airfields are bombed and become unusable,' Sandilands says.

'So most people are very ... how shall I put it? ... focussed on the military applications of this aircraft, and indeed if you look at the demography of China, the PRC as it is, its big pressing need is for internal air connections and definitely not for maritime connections.'

So never say never, as they say, but if you're a seaplane enthusiast, your chances of ever seeing a giant 2,000-seat flying boat are not particularly high. But if you live anywhere near the coastline of the South China Sea, well, you might want to keep a watch overhead.



# Seaplane Pilots Association at



Philip Dartnell

The SPAA had a great presence at the Wings Over Illawarra airshow at the Illawarra Regional Airport south of Sydney on Saturday 30th April and Sunday 1st May in the form of our great looking merchandise stall, set-up and run by our inimitable Social Membership Co-ordinator and Merchandiser Donna Handley. We had a great many people come to talk to us and we were able to spread the word about the SPAA's activities and the fun of seaplane flying in general. The Saturday opened with cloudy skies and the constant threat we were going to be subjected to a bucketing however, although it did sprinkle a bit, the rain mostly held off and then the sun came out for a wonderful two days.



*Philip Dartnell and Donna Handley at the SPAA tent*

it is to learn to fly a seaplane, how much they are to buy, where do we keep them, etc. And many want to talk about the old Empire flying boats, the Catalinas and the history of seaplanes. Fortunately your correspondent has had quite a bit to do with learning all of this history too, so I was able to impart some of my knowledge and enthusiasm.

Many other SPAA members either helped at the stall or were giving moral support including our President Malcolm Burns, National Commercial Co-ordinator Adam Holt, St Georges Basin/Nowra Local Co-ordinator John Daley, Ben Vining and Phill Lee. There's a great feeling of community at events like these and there's a definite interest in seaplanes by both the general public and other aviators who've perhaps never even thought of flying a seaplane. We had many pilots asking us detailed questions about training and operations. So there's definite value in attendance at events like these in terms of profile and enhancing public awareness.

The aerial program was really tremendous with the Historical Aircraft Restoration Society (HARS) flying their Connie (Lockheed Constellation) in formation with the RAAF Roulettes and their mighty de Havilland Caribou's Pratt & Whitney's making a suitably extreme radial sound as it lumbered into the air. There were also tremendous aerobatic displays courtesy of Paul Bennet and Matt Hall and a whole host of warbird single engine fighters and training planes performing barrel rolls and high speed passes. By the afternoon the skies had completely cleared and the crowd was fed their testosterone requirements with an RAAF F/A-18 performing a series of manoeuvres that involved serious levels of noise and speed.

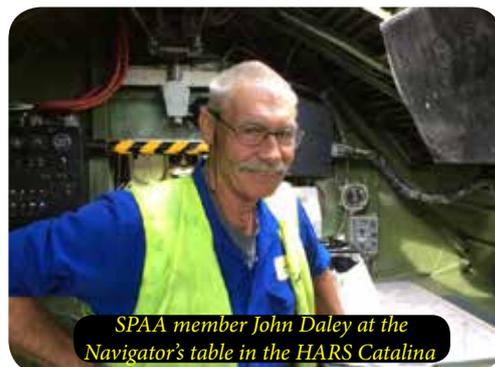


*A Black Cat with a shiny nose*



*Donna with Matt Hall*

Big sellers from our merchandise range were the ever popular "Pilot In Command" and SPAA T-Shirts and our blue and white caps. One customer bought a sports bag and numerous shirts and caps for a total sale of around \$75, and he wasn't an existing seaplane pilot! So there are people out there that think we're pretty special and like our stuff! They're often members of the public that just love seaplanes and they ask lots of questions about where we can land, how much



*SPAA member John Daley at the Navigator's table in the HARS Catalina*



*Lockheed Super Constellation*

# Choose Your Words Carefully

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**RVAG Members**

My apologies for non-attendance at yesterday's RVAG meeting. I had planned to be there, however something important and far less interesting came up at the last moment and I was unable to make it.

I had planned to tell members of the interesting experience my seaplane was involved in last weekend.

As you may know my Cessna floatplane VH-BNJ is used on a voluntary basis with the Volunteer Marine Rescue organisation.

On this occasion I was called by the organisation in Canberra to determine if my aircraft was involved in an incident at Palm Beach.

The aircraft was being flown by my co-pilot friend and had sent a message saying that it was involved in a *Catastrophe* and would be alighting at Palm Beach right away.

I was able to contact the pilot on his mobile phone and he explained the situation.

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He had previously alighted in Pittwater to pick up a couple of friends who were sailing on a large catamaran – the name of which was “*CATastrophe*”.

My aircraft is fitted with two separate radios, one for aviation and the other for marine (both GME of cause!) The pilot was less familiar with the marine radio procedures and called on Channel 16 as he was returning to the vessel to offload his passengers. “*CATastrophe* *CATastrophe*” he called, “Landing at Palm Beach immediately.” He then taxied up to “*CATastrophe*” and offloaded his two mates!

Well you can imagine what a “shermozzle” this caused with the maritime traffic – all listening on Channel 16.

It finally took a phone call from Canberra to me – but even then, I was unaware of the incident and why there was a boat called “*CATastrophe*” involved.

Philip W Dulhunty  
11.5.2016

## Flash Back!



I came across some copies of the Seaplane Pilots Association of Australia's news sheet from back in 1978. It was titled the "SEAPLANER". On glancing through them I was struck by a number of things. Firstly I hadn't realised that the SPAA was so strong back then. It was also an impressive glossy colour news sheet and I realised that it was produced before a sizable fraction of our membership was born. Interestingly, the content was not all that different to that of our On-the-Step issues over the past few years. Round Australia flights still feature.

I thought readers might be interested to see some of the content of these old issues so will include excerpts in upcoming issues. The next two pages have reproductions of a few pages from Volume 1 Issue 5 which was published some time in 1978.

If any of you have copies of these early news sheets and would be willing to send me scans of any old items you think would interest readers, they would be happily received.

The Executive is listed in the news sheet. Not surprisingly Philip Dulhunty was President, with Kevin Weldon, Victor Walton, Harvey Prior, David Hooker, Ian Long, William Lane, John Brown, Richard Andrewartha. How many are familiar to you?

## PELICANS PROGRESS

*Continuing the story of Pelicans Progress, a unique seven week expedition around the coastline of Australia, in three seaplanes*

Volume 1  
Issue 5  
1978

### THE TALE OF PELICAN'S PROGRESS

This continues the story of Pelican's Progress, a 25,000 kilometre seaplane expedition around the rugged coastline of Australia. It is soon to be a series of television specials on the Channel Seven Network.

The next leg of the expedition involved filming the northern region of the Great Barrier Reef, the picturesque islands off the coast of Cairns and areas inland. These islands included: Hinchbrook Island, Whitsunday Island and Green Island, reputed as the most popular tourist resorts on the Great Barrier Reef.

The dramatic change in the landscape of these islands in comparison to those in the south, provided a varied contrast for the film crew. The southern islands such as Heron, Capricorn and Bunker Groups are flat and treeless and are virtually islands of coral formations. In comparison Hinchbrook and Whitsunday are mountainous and covered with cool green rainforest and open slopes of eucalypt woodland.

Hinchbrook is the largest island off the Queensland coast, separated from the mainland by the Hinchbrook Channel. Until 1975 Hinchbrook was visited only by bushwalkers, naturalists and yachtsmen because there was simply no facilities to accommodate these people. Now a small resort exists to cater for the needs of those who visit this tranquil island off the coast. In fact, it is the only large area off the eastern coastline that remains environmentally intact, and hasn't changed since white settlement.

Hinchbrook provided a great opportunity for the film crew and photographer to capture unusual patterns in the twisted roots of the mangroves. These mangroves fringe the Hinchbrook Channel and would have to be the last extensive area of this remarkable plant community along our eastern coastline. The rich silty shallows at the base of the mangrove trees form a valuable breeding ground for many fish

and crustaceans. Strolling through this strange watery 'forest' proved to be a fascinating experience for the film crew. People viewing the television specials next year, will be sure to appreciate this unusual part of our Australian landscape.

Missionary Bay, located on the mainland side of the island, has provided an opportunity for marine scientists from Townsville to study the mangrove swamps. This area would have to be the finest example of these swamps in Australia. Recently they obtained help from the army to establish walkways through the impenetrable mangroves. These walkways provided excellent filming platforms for the crew, rather than wading uncomfortably through waist deep water.

The island is a picturesque wilderness that remains virtually unexplored. This enabled the film crew to capture a true impression of Hinchbrook environment in its most natural state. The island rises steeply from the foreshores to forest clad peaks, the highest

is one of the largest tourist islands on the Great Barrier Reef. It is separated from the mainland by the exceptionally beautiful, Whitsunday Passage, which is used as a shipping channel. It owes its name to the Church festday 'Whit Sunday', being celebrated on the day that Captain James Cook first navigated the Passage in 1770. It is only a mile or so in width, hemmed in on either side, by islands which are heavily wooded with pine and other beautiful timbers. This spectacular stretch of sparkling tropic sea, is unmatched in beauty and would have to be one of the most beautiful waterways in Australia.

Observing this area from the altitude attained by seaplanes, makes it possible to appreciate the fantastic formations of coral. From the waterlevel, the observer would remain completely unaware that these formations exist in the surrounding water. Yet, a few miles away, to the east, the sea is virtually strewn with a maze of reefs, varying in size, form and depth. The



point being Mount Bowen. Permanent streams plunge down the slopes in cascades, thundering through the tropical rainforest. Superb beaches extend for kilometres on the ocean side, deserted except for a few patrolling sea eagles.

Whitsunday Island near Bowen, part of the Cumberland Group of islands,

exposed reefs which are usually visited by tourists in the Whitsunday region are those such as Hook and Hardy reefs.

The Whitsunday islands are undoubtedly one of the most perfect places for the seaplaner. This has been illustrated by Kevin Bowe and his Air



Whitsunday operation on Long Island, just south of Whitsunday Island. Kevin runs a flying boat charter service, around all the reefs and other islands, providing scenic flights and ideal opportunities for the coral fossickers.

Moving west, from the coastal islands to the mainland, the expedition sighted Lake Eucham and Lake Barine. These are two fascinating crater lakes of crystal clear water, which are the subject of many aboriginal legends. They are surrounded by dense tropical forest and are well developed for water

sports. This area abounds in wildlife and is carefully managed, to retain the natural balance of the ecology. The expedition contributed greatly, as the seaplanes are non-polluting, and only leave behind a ripple on the water's surface.

The expedition from its conception, was concerned that they would not contribute in any way, to polluting our natural waterways. To ensure this, seaplanes proved to be the perfect solution, making this expedition quite unique.

was the worst aircraft accident on record. You may recall the extract on the fly leaf, from Rudyard Kipling's 'The Secret of the Machines', the last line of which reads . . . 'If you make a slip in handling us, you die' . . . very sombre words.

The point being made, however, is that with aircraft, nothing should ever be taken for granted. An example of this was a recent accident involving a seaplane, where one of the contributing factors could have been a fault in an item of equipment we as seaplaners are all familiar with, that is, the float pump.

In this instance, though the floats were thoroughly pumped before the flight, it is possible that some compartments did have quite a bit of water in them as subsequent experiments showed that unless this particular pump was primed with water prior to pumping the floats, the suction washer in the pump would not seal and would merely allow air to pass. Therefore, bear in mind the following points: Firstly, it is normal for there to be a little water in the float compartments, perhaps up to five or six pumps. Secondly, remember that the pump fitting should form a good seal with the compartment pump orifice, giving a definite sucking sound when the pump is removed. If either of these points is missing, suspect that pump. Prime it with water before pumping the floats again. If there is still no action, dismantle the pump and check the suction washer.

Bear in mind also that the pipes leading from the pump orifice to the compartment's lowest point, may become detached. If you are unsure, remove the compartment inspection hatch and have a look. And, above all, if in any doubt, seek an expert's advice.

As a side-line, a suggestion has been made that rather than use the established 'eyeball' method of telling if a float is dry, we should investigate the application of some form of seaplane 'plimsoll line'.

With a little imagination we could decorate our floats with a tremendous variety of lines and circles. Perhaps in relation to maritime lines of Tropical Fresh Water, Tropical Salt Water and Winter North Atlantic, we would add Hawkesbury River after rain, or Lake Jindabyne Spring Thaw . . . a line to suit any situation.

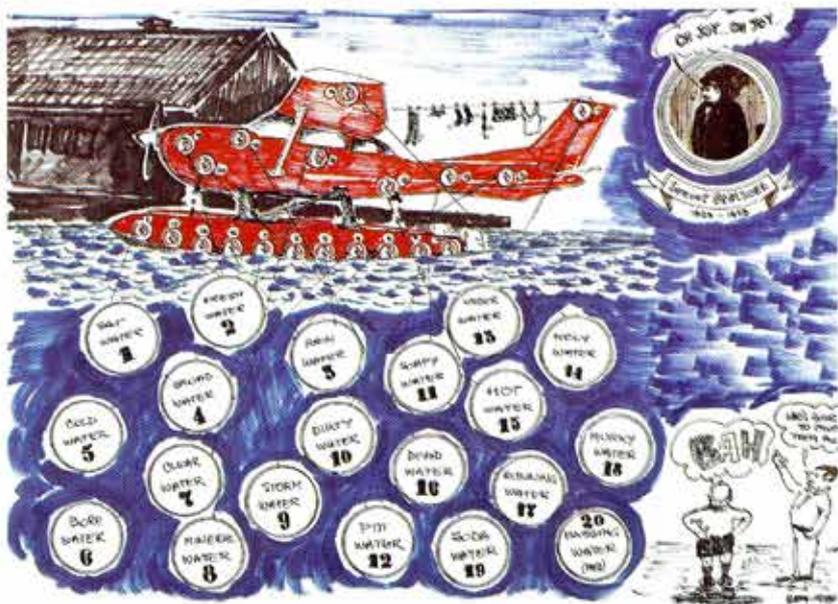
However, if anyone has any really good ideas, perhaps you could write in and let us know.

## TECHNICAL CORNER

By IAN LONG

### FLOAT PUMPS

Some of us may have read the book 'Destination Disaster', an analytical account of the D.C. 10 accident on the outskirts of Paris which at the time



# THE WEIRDEST AIRCRAFT

If you think Star Wars had some weird looking air/space craft then look at what the Russians were doing in the 70's. Is it possible the Spielberg got his inspiration from these strange Russian craft.

Throughout the Cold War the Soviet Union and the United States were constantly trying to check each other's military power. This drive for each country to outdo the other led to some truly bizarre pieces of military hardware. The Bartini Beriev VVA-14 Vertikal'no-Vzletayuschaya Amphibia (vertical take-off amphibious aircraft) was developed in the Soviet Union during the 1970s.

Designed to be able to take-off from the water and fly at high speed over long distances, it was to make true flights at high altitude, but also have the capability of 'flying' efficiently just above the sea surface, using ground effect. After extensive research, including the development of the small prototype Be-1 wing in ground effect aircraft, the first Bartini Beriev VVA-14 prototype was completed in 1972. Its first flight was from a conventional runway on 4 September 1972. In 1974 the inflatable pontoons were installed, though their operation caused many problems. Flotation and water taxi tests followed, culminating in the start of flight testing of the amphibious aircraft on 11 June 1975. The VVA-14 was designed by Robert Bartini in answer to a perceived requirement by the Russians to destroy United States Navy Polaris missile submarines. The aircraft needs just THREE persons crew, which is very little for the gigantic aircraft!

- Crew: 3
- Length: 25.97 m (85 ft 2 in)
- Wingspan: 30 m (98 ft 5 in)
- Height: 6.79 m (22 ft 3 in)
- Wing area: 217.79 m<sup>2</sup> (2344 ft<sup>2</sup>)
- Armament: ordnance 2000 kg / 2 aerial torpedoes / 8 m IGMD-500
- Empty weight: 23,236 kg (51,119 lb)
- Gross weight: 52,000 kg (114,400 lb)
- Powerplant: (Cruise) 2 × D-30M turbofans, 67 kN

(15062 lbf) thrust each

- Maximum speed: 760 km/h (472 mph)
- Cruising speed: 640 km/h (398 mph)
- Range: 2,450 km (1,522 miles)
- Service ceiling: 8,000-10,000 m (26,247-32,808 ft)

Bartini, in joint collaboration with the Beriev Design Bureau intended to develop the prototype VVA-14 in three phases. The VVA-14M1 was to be an aerodynamics and technology test-bed, initially with rigid and robust pontoons on the ends of the central wing section, and later with these replaced by inflatable pontoons. In 1974 the inflatable pontoons were installed, though their operation caused many problems. Flotation and water taxi tests followed, culminating in the start of flight testing of the amphibious aircraft on 11 June 1975.



The VVA-14M2 was to be more advanced, with two starting engines to blast into the cavity under the wing to give lift and later with a battery of lift engines to give VTOL capability, and with fly-by-wire flight controls.



The VVA-14M3 would see the VTOL vehicle fully equipped with armament and with the Burevestnik computerised ASW (anti-submarine warfare) system, Bor-1 MAD (magnetic anomaly detector) and other operational equipment.

In 1974 the inflatable pontoons were installed, though their operation caused many problems. Flotation and water taxi tests followed, culminating in the start of flight testing of the amphibious aircraft on 11 June 1975.

After Bartini's death in 1974, the project began to slow down gradually and eventually drew to a complete stop, after years of getting faded out, the aircraft having conducted 107 flights, with a total flight time of 103 hours. The only remaining VVA-14, No. 19172, was retired to the Russian Federation Central Air Force Museum, Monino in 1987. The aircraft still resides at the museum in a dismantled state, where it carries the number '10687' and 'Aeroflot'.



The VVA-14 first flight was held on September 4, 1972. It was tested by pilot Yu. Kupriyanov and navigator L. Kusnetsov. In 1975 the test program was completed, the plane performed 107 flights with a total flight time 103 hours.

The plane's all round metal airframe comprises a fuselage, middle portions of central wing, two side sections with floats, torsion-box central wing, two removable wing portions, tail, cruising engines' nacelles over fuselage.

The side sections are intended to fix horizontal and vertical tail, floats and main units of tricycle wheeled landing gear. The removable wing portions have slats, slotted flaps, and ailerons. The tail is provided with elevators and rudders.

Above the evolution speed, the plane is controlled with aerodynamic control surfaces. During vertical takeoff and landing as well as during transient process, the plane is controlled with jet vanes. The plane control system includes the SAU-M automatic control system.

Design, test and production of a LG pneumatic retractable floats was a complicated problem. It was solved only two years after the first plane's flight.

The powerplant comprises two cruising D-30M bypass turbojet engines designed by P. Solovyov and 12 lift RD-36-35PR turbofan engines designed by P.Kolesov as well as TA-6A turbo generator – an auxiliary airborne unit. There are fuel (15,500 kg of fuel capacity), deicing, and fire extinguishing systems.

The "Burevestnik" search- especially developed to track,

and-aim system was let the crew detect, and destroy hostile submarines with high accuracy. The "Bor-1" airborne search magnetometer, radio sonobuoys and weapons automatic release mechanism, flight-and-navigation system operate



jointly with this search-and-aim system. Crew members (a pilot, navigator and operator) are accommodated in ejection cockpit capsule that provide the possibility to save the crew in all flight attitudes and to stay for long time in it after landing to the ground or water. The third copy of the plane is supposed to use for the ejection cockpit capsule testing.

And if the VVA-14 was not weird enough then how about a ten engine monster like the Ekranoplan A-90, or MD-160, or the 400 ton Lun class ekranoplan.

# WHAT'S ON THE NEAR HORIZON

## THE ICON A5

*I must admit to being one of those who had some doubts as to whether the Icon A5 was ever going to become a commercially available seaplane. The concept and marketing has been impressive and it had caught the imagination of many seaplane pilots, non-seaplane pilots and aspirational pilots. Kevin Bowe, arguably the most experienced and respected flying boat pilot in Australia has had a very close interest in the Icon and has recently had the chance to do a test flight. His report, below, should be good news to those on the waiting list.*

When I first saw the design of the Icon A5 back in June 2008 I thought "Gee, this is the configuration that I had always thought would be the best for a flying boat". Consequently, I paid the US\$5,000 deposit at that time and was notified that my production position was number 198.

Later I learned that the first 100 positions were being reserved for company use (demo and training centre aircraft) and for people willing to pay a US\$100k nonrefundable deposit.

Early this year I was advised that my aircraft was scheduled for completion in January 2017 and a few months later a Purchase Agreement was received for me to sign. This document was completely unacceptable.

Also announced was a large increase in the final price as all options were now being included as standard and as the upgraded Rotax 912iS engine was included. This led to my decision at the time not to proceed with a purchase. However, after speaking with other deposit holders and Icon, I decided to wait until after the test flight I had booked before informing my decision.

I decided to go ahead with the visit and test flight reasoning that after waiting for almost 8 years I at least should get to fly it once!

Shortly before my visit I was informed that there was to be a further delay in deliveries as it would be some time



before the production line target could be reached due to logistic problems with component and parts supply.

During my recent visit I was told that a revised Purchase Agreement was being worked out which would be more acceptable.

Now, almost exactly 8 years later, I have finally had an opportunity to fly the Icon A5 when I visited Icon's base at Vacaville, California on the 9th June.

Adam Bronge gave me a very comprehensive tour of the factory where I saw a well laid out production facility and was impressed with the attention to detail and workmanship that goes into the A5. It is now obvious to me why there had been years of delay in getting the design to production.

After the tour of the facility there followed a briefing with Craig Bowers where we covered in detail the handling of the aircraft and engine before an inspection of one of the training A5s.

Then it was taxi to takeoff with Craig allowing me to take the left hand seat and fly the aircraft! During the climb and in cruise I found the controls well balanced, light and responsive, without being sharp or sluggish.

Craig then suggested I do a couple of stalls so, following a couple of clearing turns, he asked that I leave the power on and just keep pulling back on the stick, which, by the way, feels very comfortable in the hand. He warned that there would be some buffeting and the warning horn would sound as we approached the stall. But hey! That was all that happened. In fact we were climbing at around 60 feet per minute! What's more we still had Aileron



control.

After leveling out it was time to do a stall without power, the only difference being that we had a descent rate of only 900 feet per minute. At this stage I was beginning to realise that I have never experienced flying like this before.

It was then onto water operations where we had ideal conditions with some areas of the lake having a 10" chop and other areas being glassy. For the approach Craig suggested 3,000 RPM and keep the Angle Of Attack (AOA) indicator in the white range. This gave a good attitude and speed until the flare as we approached the water. As I reduced power the aircraft slid cleanly onto the water.

This is when I really felt at home as the A5 is beautifully mannered on the water. We did a lot of step taxiing with 180 and figure eight turns and a total of 10 full stop water landings with a number of touch and goes thrown in.

As we were about to depart the lake Craig said "I will show you another feature of the A5 that may keep you safe if you find yourself in a situation where you need to do a 180 to stay out of trouble." As we approached a small island he threw the aircraft over to a 50-60 degree turn and in about a diameter of 450 feet we circled the island. The AOA was in the yellow range but the turn felt very comfortable. Impressive!

Unlike most other single engine flying boats there is no change in the pitch attitude when power is increased or decreased as the Thrust and Drag forces operate in a balanced line making the A5 far easier to fly.

Like all aircraft designs there are some downsides. The A5 is not fast and the payload could be better.

Why have an expensive parachute which reduces the available payload and has a rate of descent of 1,200' per minute when in a power off stall, still with aileron and rudder control, the rate of descent is 900' per minute? I think the parachute should be an option as I would never use it!

Kirk Hawkins and his team have created a great aircraft. This is truly a fantastic flying boat. Flying it was one of the highlights of my flying experiences. It is a delight to fly.

# *Seaplane Pilots Association Australia*

## *Mission Statement*

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### **Organisational Goals**

The Seaplane Pilots Association of Australia (SPAA) is a not for profit organisation whose goals are;

- *Promote the safe and responsible operation of Seaplanes.*
- *Advocate for equal rights and access to waterways for Seaplanes.*
- *Engage with the Civil Aviation Safety Authority (CASA), Air Services Australia (ASA), and other industry stakeholders and interested parties, on Seaplane related matters and legislation.*
- *Foster high standards of Seaplane training and airmanship.*
- *Provide support and information to its members.*

### **Code of Operations**

Members of SPAA, in the interests of promoting safety and the respectful use of airspace and waterways, agree to adhere to the following Code of Operations as a guideline and general policy for the operation of Seaplanes in Australia.

SPAA members will;

- *Adhere to Australian Civil Aviation Legislation.*
- *Observe State, Federal and International laws relating to the safe operation of marine craft whilst operating a Seaplane on the water.*
- *Be considerate of others, and use fly neighborly and noise abatement procedures when appropriate.*
- *Adhere to see & avoid principles, in the air and on the water.*
- *Operate within personal and aircraft limits.*
- *Always strive for the highest standards of pilotage and airmanship.*
- *Provide assistance to persons or vessels in distress, so long as it is safe to do so.*

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