



NEWSLETTER FEBRUARY 2011

SHOALHAVEN MODEL FLYING CLUB Inc.

Email: iwa@internode.on.net

Webpage: <http://www.shoalhaven.net.au/~shoalhavenmfc/>

CLUB OFFICERS

President:	Gary Matheson	4423 4050	Groundsman & Equipment:	Ray O'Mullane	4443 5501
Vice President:	Greg Clark	4447 8384	Grounds Assistants:	Tom Prosser	4422 1249
Secretary:	Geoff Lowerson	4464 1587	Publicity Officer:	Ray O'Mullane	4443 5501
Treasurer:	Maurie Hartnup	4422 5414	Catering Officer:	Gary Matheson	4423 4050
Newsletter:	Ian Avery	4232 1093	Navy Liaison:	Greg Clark	4447 8384
Committee Members: Paul Mitchell, Bill Hammond, Eric Bielby, Wayne Voss.					
Public Officer: Maurie Hartnup 4422 5414					

FLYING ACTIVITIES

Nowra Racecourse - Sunday, Tuesday and Friday Mornings, from 9am.

Fletchers Lane Field - Anytime during daylight hours from 9am.

No flying at Racecourse on upcoming racedays: Friday 18 March, 2011.

NEXT CLUB POINTSCORE EVENTS

Powered Glider 27th February, 2011, Fletchers Lane Field. CD Brian Wilson 4446-0037

NEXT CLUB MEETINGS

The next Monthly Meeting and Annual General Meeting for the Shoalhaven Model Flying Club Inc. is Tuesday, 1st March, 2011, at 7.30pm - At the Bomaderry Bowling Club, 154 Meroo Road, Bomaderry. (Excellent meals available at the Club)

MEMBERSHIP FEES 2009-2010

Senior \$210 - Pensioner \$200 - Junior \$90 - Assoc. Member \$75 - Non-Flying Member \$10
(Lower Fees if MASNSW Newsletter by email - for further information contact the Treasurer - Phone 4422-5414.)



F111 - Last Flight 10 December, 2010.



SHOALHAVEN MODEL FLYING CLUB Inc.
MINUTES OF MEETING 1st February 2011
 HELD AT THE BOMADERRY BOWLING CLUB.

Meeting Opened: 1933HRS **Chairman:** Gary Matheson **Apologies:** Barry Payne. **Visitors:** Nil.

In attendance: Gary Matheson, Greg Clark, Geoff Lowerson, Maurie Hartnup, Ian Avery, Ray O'Mullane, Bill Hammond, Eric Beilby, Doug Tebbit, Brian Wilson, Leiland Friend.

Minutes from Previous Meeting: Moved Eric Beilby Seconded Doug Tebbit... that the minutes from the monthly meeting held on the 7th December, 2010, circulated in the December 2010 Newsletter, be accepted. Carried.

Business Arising from Previous Minutes: See General Business.

Correspondence Received:

1. Email from Pat Cassidy regarding email change of address. Email dated 30 December 2010.
2. Email received from Dino Riebolge regarding display for Wings over Illawarra 2011. Email dated 7 January 2011.
3. Email received from Barry Payne regarding Wings over Illawarra 2011 display. Email dated 10 January 2011.
4. Email received from Doug Tebbit regarding NSW Pattern Flying event January 2011. Email dated 12 January 2011.
5. Email from Ian Avery regarding defect with JR 2.4 GHz DSX9 Transmitter. Email dated 17 January 2011.
6. Email from Vicki Hale Shoalhaven Council regarding "Welcome to the City" exhibition 25 February 2011. Email dated 20 January 2011.

Correspondence Out:

1. Email sent to committee members providing details of proposed calendar of events. Email dated 8 December 2010.
2. Email sent to Ian Le Bronne NSW Pylon Racing Association confirming dates for 2011. Email sent 11 December 2010.
3. Email sent to members requesting participation in the "Wings Over Illawarra 2011" static display. Email dated 10 January 2011.
4. Email sent to members informing them of the first pattern event for 2011. Email dated 15 January 2011.
5. Email sent to Michael Hough and Dean Riebolge regarding participation in "Wings Over Illawarra 2011". Email dated 29 January 2011.

Moved Bill Hammond Seconded Ray O'Mullane....that correspondence in be received and correspondence out adopted - carried.

Business Arising from Correspondence: See General Business.

Treasurers Report 1st February, 2011 Maurie Hartnup.

Income:

Club Fees - Poulton	\$	100.00		
Club Fees - Stuckey	\$	100.00		
Total Income			\$	200.00

Expenditure:

Austbroke - Mower & Generator Insurance	\$	460.00		
Barry Foreman - Field Spraying	\$	93.50		
Auto Pro - Mower wrench and oil - Tom Prosser	\$	8.35		
Auto Pro - Mower grease - Tom Prosser	\$	8.95		
Lawn Power - Mower oil filter - Tom Prosser	\$	21.50		
Caltex Service Station - Mower fuel - Tom Prosser	\$	50.00		
Club Christmas BBQ - Foodstuff etc.	\$	89.13		
MASNSW Chq # 856 - Fees Poulton	\$	64.00		
MASNSW Chq # 858 - Fees Stuckey	\$	64.00		
Total Expenditure			\$	859.43
Excess Expenditure over Income carried forward to Everyday Account			\$	-659.43

Everyday Passbook Account:

Balance Brought forward from 7 December, 2010	\$	3,736.26		
Transfer to Reward Saver Account 15 November, 2010	\$	-100.00		
Excess Expenditure over Income	\$	-659.43		
Balance and Available funds from this Account as at 31 January, 2011			\$	2,976.83

Reward Saver Account:

Balance brought forward from 7 December, 2010	\$	9,853.50		
Interest 31 December, 2010	\$	44.07		
Transferred from Everyday Passbook A/c 15 December, 2010	\$	50.00		

Transferred from Everyday Passbook A/c 15 January, 2011

\$ 50.00

Available Funds from this Account as at 31 January, 2011

\$ 9,997.57

Fixed Term Investment Account:

Balance of Term Investment Account as at 31 January, 2011

\$ 11,529.22

Total of all available Funds as at 31 January, 2011:

\$ 24,503.62

Moved Maurie Hartnup, Sec. Ray O'Mullane... that the treasurer's financial report be received and adopted. Carried.

Field Reports: Archer Field - Ray O'Mullane

Ray reports the field has been mown recently. A working bee may have to be organised as the runway Centre Line requires painting and the edges require trimming.

Fletchers Lane - Ray O'Mullane

Fletchers Lane has been mown recently and is in good shape.

Contest Reports: Gremlin Trophy - 12th December 2010 - Archer Field - Ray O'Mullane for Merv Thomas.

The trophy was won this year by Eric Beilby, 2nd Jim Saunders, 3rd Ray O'Mullane, 4th Maurie Hartnup, John Robertson DNF.

Other Reports: Nil.

Awards: Nil.

Club Website: Eric Beilby- Updates to website are ongoing.

General Business:

1. Proposed shade area - discussion on the type of shade area and the pros and cons of a cement base or to leave it as grass. Gary Matheson to obtain an updated quote.
2. Wings Over Illawarra 2011 - Due to a club competition on the same day and lack of response to participate it was decided that the SMFC would not participate this year. A motion "that the SMFC would not participate in a static display at Wings Over Illawarra 2011" was proposed by Eric Beilby and seconded by Bill Hammond. The vote was moved in favour. Greg Clark to reply to Michael Hough stating the clubs position.
3. Shoalhaven "Welcome to the City" exhibition - It was decided that the SMFC would participate in this event on Friday 25th February commencing at 4.00pm at the Shoalhaven Turf Club. Gary Matheson to respond.
4. Discussion on the Powered Glider Comp. on the 27th February. Brian Wilson is the CD and will supply rules to be applied to the comp.
5. Noted at the meeting - that the AGM is scheduled for Tuesday 1st March 2011. The following positions need to be filled.

President, Vice President, Secretary, Treasurer, Newsletter Editor, Committee Members, Groundsman & Equipment, Grounds Assistants, Publicity Officer, Catering Officer, Navy Liaison, Public Officer.

Next Competition: Powered Glider - 27th February, 2011 - Fletchers Lane Field - Brian Wilson is the CD.

Next Club Monthly Meeting: The next club monthly meeting will be held on the 1st march 2011. at the Bomaderry Bowling Club, Meroo Road, Bomaderry, commencing 1930 Hrs.

Meeting Closed: 2015Hrs.

Copper Wire. After having dug to a depth of 10 feet last year, British scientists found traces of copper wire dating back 200 years and came to the conclusion that their ancestors already had a telephone network more than 150 years ago.

Not to be outdone by the Brit's, in the weeks that followed, an American archaeologist dug to a depth of 20 feet, and shortly after, a story published in the New York Times: "American archaeologists, finding traces of 250-year-old copper wire, have concluded that their ancestors already had an advanced high-tech communications network 50 years earlier than the British".

One week later, the state's Dept of Minerals and Energy in Western Australia, reported the following:

"After digging as deep as 30 feet in Western Australia's Pilbara region, Jack Lucknow, a self-taught archaeologist, reported that he found absolutely nothing at all.

Jack has therefore concluded that 250 years ago, Australia had already gone wireless." Just makes you bloody proud to be Australian.

Lecture. An elderly man is stopped by the police around 1.00 a.m. and is asked where he is going at that time of night. The man replies, I am going to a three hour lecture about alcohol abuse and the effects it has on the human body and family life. The officer then asks: "Really? Who is giving that kind of lecture at this time of night?" The man replies: "My wife".

Shoalhaven MFC - 2011 Club Calendar

EVENT	DATE	CONTEST DIRECTOR	VENUE	CLUB POINT SCORE	LARRY DAVISON MEMORIAL
Powered Glider	27 February 2011	Brian Wilson	Fletchers Lane Field	YES	YES
Wings over Illawarra Air Show	27 February 2011		Albion Park Airport		
Annual General Meeting	1 March 2011		Bomaderry Bowling Club		
NSW Pylon Racing	12/13 March 2011	Gary Matheson	Archer Field		
Club Texaco	27 March 2011	Ian Avery	Fletchers Lane Field	YES	YES
Committee Meeting	5 April 2011		Bomaderry Bowling Club		
Electric Scramble	10 April 2011	Brian Wilson	Fletchers Lane Field		YES
Water Fun Fly	1 May 2011	John Carlson	Archer Field	YES	
Committee Meeting	3 May 2011		Bomaderry Bowling Club		
Splash and Crash	8 May 2011		Archer Field		
Climb and Glide	22 May 2011	Barry Payne	Fletchers Lane Field	YES	YES
Committee Meeting	7 June 2011		Bomaderry Bowling Club		
Splash and Crash	12 June 2011		Archer Field		
Electric Scramble	26 June 2011	Brian Wilson	Fletchers Lane Field	YES	** (YES) **
NSW Pylon Racing	2/3 July 2011	Gary Matheson	Archer Field		
Committee Meeting	5 July 2011		Bomaderry Bowling Club		
Splash and Crash	10 July 2011		Archer Field		
Winter Fun Fly	24 July 2011	Maurie Hart-	Archer Field	YES	
Committee Meeting	2 August 2011		Bomaderry Bowling Club		
Splash and Crash	7 August 2011		Archer Field		
Splash and Go	21 August 2011	Mike Beverley	Archer Field	YES	
Committee Meeting	6 September 2011		Bomaderry Bowling Club		
Splash and Crash	11 September 2011		Archer Field		
Club Scale	25 September 2011	Bob Bentley	Archer Field	YES	YES
Committee Meeting	4 October 2011		Bomaderry Bowling Club		
Splash and Crash	9 October 2011		Archer Field		
Towline Thermal Glider	23 October 2011	Brian Wilson	Fletchers Lane Field	YES	
Committee Meeting	1 November 2011		Bomaderry Bowling Club		
Millennium Cup & Shoalhaven Shield	13 November 2011	Ian Avery	Fletchers Lane Field	YES	
Splash and Crash	13 November 2011		Archer Field		
Electric Glider	27 November 2011	Ray O'Mullane	Fletchers Lane Field	YES	YES
Committee Meeting	6 December 2011		Bomaderry Bowling Club		
Gremlin Trophy & Christmas BBQ	11 December 2011	Winner 2010	Archer Field	YES	

NOTE: ** (YES) ** - The Electric Scramble event 26 June 2011 will only count towards the Larry Davison Memorial point score if the Electric Scramble event scheduled for 10 April 2011 is cancelled.

Nowra Race Club Program - 2011

Description	Day	Date
Race Meet	Friday	18 March 2011
Greenwell Point Cup 2011	Sunday	10 April 2011
Girls Day Out 2011	Sunday	29 May 2011

SMFC Library

These books and DVD's are now available from our library.

Please

contact:

Bob Bentley

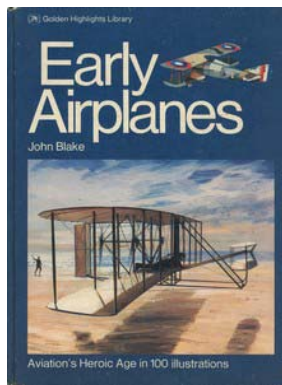
44226335/0428613706

Maurie Hartnup

44233440 /0411828110

BOOKS:

Covering RC Airplanes	Donated by Bob Bentley	001
Scratch Building RC Airplanes	Donated by Bob Bentley	002
Bipes	Donated by Bob Bentley	003
How To's - Volume 2	Donated by Bob Bentley	004
Civil Marine Aircraft	Donated by Bob Bentley	005
Basic Aeronautical Knowledge	Donated by Bob Bentley	006
Aircraft (David Mondey)	Donated by Bob Bentley	007
How To's	Donated by Paul Bowman	008
Customizing R/C Airplanes	SMFC	009
Aerobatics for Everyone	SMFC	010
Fast Electric Boats	SMFC	011
400 Great R/C Modeling Tips Volume I	SMFC	012
400 Great R/C Modeling Tips Volume II	SMFC	013
Basic Radio Control Flying	Donated by Andrew Kyriacou	014
Operating Radio Control Engines	Donated by Andrew Kyriacou	015
The Development of Jet and Turbine Aero Engines by Bill Gunston	Donated by Brian Phelan	016
Strategic Air Command		017
Early Airplanes	Donated by Barry Matthews	018



DVD's:

Weapons of War - Fighters	Donated by Bob Bentley	DVD-1
The Lockheed P-38 Story *	Donated by Brian Phelan	DVD-2
Focke - Wolf 190 *	Donated by Brian Phelan	DVD-3
Battle of Britain - The Truth	Donated by Bob Bentley	DVD-4
Monocote - Secrets of great covering	SMFC	DVD-5
Model Airplane - Build & Fly RC Planes	SMFC	DVD-6
Shoalhaven Model flying Club by Rex Bray	SMFC	DVD-7
Republic P47 Thunderbolt	Donated by Brian Phelan	DVD-8
World War II The Battle of Britain	Donated by Barry Matthews	DVD-9
The Silent War & Wings Over the sea *	Donated by Paul Bowman	DVD-10
Victory At sea (4 DVD set)	Donated by Paul Bowman	DVD-11
Mosquito Squadron	Donated by Ian Avery	DVD-12
Air Show 2007 (Australian International)	Donated by Ian Avery	DVD-13
Battle of Britain (not the movie)	Donated by Ian Avery	DVD-14
DIY Radio Control Hobbies *	Donated by Barry Payne	
	DVD by Bob Bentley	DVD-15
SMFC Fly In / Farnborough / Splat 3 *	Donated by Barry Payne	
	DVD by Bob Bentley	DVD-16
LeMans/Goodwood	Donated by Bob Bentley	DVD-17
Consolidated PBY Catalina	Donated by Ian Avery	DVD-18
2009 Air Venture (Oshkosh)	Donated by Ian Avery	DVD-19
Extreme Machines - Superplanes	Donated by Ian Avery	DVD-20
Rise and Fall of Concorde	Donated by Bob Bentley	DVD-21



* Video tape as well as DVD

Note: Any member wishing to donate Magazines, Books, DVD's or Video Tapes to the club library please contact Bob Bentley at the telephone numbers above or at the field. All donations gratefully received and acknowledged.

LIPO FIRE.

From Maurie Hartnup.

I took these pictures of the remains of the LiPo battery after Bill Cruze's electric pc9 crashed and caught fire at the field last Friday, 7th January, 2011.

I told him I was going to email them to you and you may use them in the club newsletter as a warning as to what can happen when a LiPo burns. He didn't object.

These pictures were taken about an hour after the plane crashed and it was cool enough to pick up.

The plane was a 40 size PC9 ARF and the lipo battery would have been 3000mah - 4000mah, 3S or maybe 4S.

Bill believes that the reason the plane crashed and caught fire was because he didn't disconnect the red wire from the ESC to the receiver, as he had a separate flight battery, but I don't believe that this caused the fire.

More likely the motor draw pulled the receiver battery voltage down and caused the crash.

I set up a model with a receiver pack and the red wire in place and the motor tried to run without the lipo's.

I believe the crash had damaged the lipo battery and it shorted out and caught fire.

I saw the controller to receiver wire and it was not burnt and the red wire was in place. I got there just after it happened.



Looking for ideas on carrying rubber bands - I carry mine in zip lock baggies.

From Roy Bourke. roybourke@yahoo.com

Most ziplock baggies are OK for rubber storage, but apparently some aren't. It depends on what the bag is made of.

A plastics expert in our Indoor Free Flight club once did a study on which bags were suitable for rubber storage. He offered a couple of simple tests to determine if a brand of baggy is suitable.

1. Completely fill a bag with water, and put it into a basin of water. If it sinks, it contains PVC and is bad for rubber storage. It will rot the rubber in time. If it floats, it is safe for rubber storage.
2. Take a clean unused plastic bag and burn it. If it burns with a clear-edged blue flame, it is OK. If it burns with a smoky yellow flame it contains PVC and shouldn't be used for rubber storage.

"Krinkly" brand oven bags are usually Mylar and are OK.

Personally, for storage of rubber motors for my Indoor ships, I use the glassine envelopes sold for the storage of postage stamps, and have never had a problem of rubber rotting after long-term storage.

Wind Gauge with Compass

Hi, my name is Brian Koluder and I am a software developer. I have created an iPhone application that I think will be very helpful to your RC aircraft club members. It is a wind gauge that uses the phones GPS to show actual wind direction and speed from NOAA. Regardless of where you are or which way you are facing, the gauge will show you which direction the wind is coming from and at what strength. The application is only .99 cents and I think it would be well worth it to know the current wind conditions when flying those expensive aircraft.

Here is a link with screen shots and more info on the application. <http://itunes.apple.com/app/codestork/id407770307?mt=8>

Thank you, Brian Koluder

FUNNY/STUPID DORNIER STORY

Richard Sutherland

A few years ago I decided to build a multi-motor electric seaplane and eventually settled on the Dornier 24 as the subject. I already had an old, well used, ASTRO 05 cobalt so I ordered another two of them. I wired the motors in series but the older ASTRO behaved differently to the new ones (less RPM, different accel/deccel, noisier etc. due to smaller magnets/pos different winding and being generally clapped out) so I put this motor in the center position. The model flew really well - short takeoffs - plenty of power - trainer like handling and I was really pleased with it.

A long holiday and other projects meant that the Dornier sat in the shed for a while until an upcoming seaplane day provided the incentive to bring it out of storage. Finances now allowed the purchase of a new ASTRO 05 to replace the clapped out one, I checked this on seven cells and it performed identical to the other two so I swapped the motor, installed the radio gear, charged the batteries and headed out to a secluded dam with my girlfriend for a test flight the day prior to the seaplane day.

I placed the Dornier in the water and attempted takeoff - acceleration was poor, but the batteries were charged a couple of days before so I assumed they had probably lost some of their charge. Peaked batteries and tried again - acceleration still poor - maybe the water is too flat to allow the Dornier to get on the step - should be OK if I can get it airborne - eventually manage to horse it off - flying really bad - elevator is hypersensitive (like the CG is on the trailing edge). About a 100 feet high now - low airspeed - too much up - stall - caught it - stall - mush -shut the throttle and down it comes - pretty heavily - SPLASH!! It's still floating but will only taxi in tight circles about a 100 meters from shore. So I strip off to my jocks and swim out - friggin hell that water is cold!! Talk about "fffreezing the bbballs off a bbb Brass monkey!!" I get to the Dornier and begin to tow it back (and start wondering if I might cramp up and drown!), I finally reach land and after about an hour have thawed out.

Damage is minimal - servo rails loose (hence rudder locked over), a couple of prop strikes on the canopy/hatch (strange, must have happened on impact) and BATTERY HOLDER BROKEN - Aha must have broken loose on takeoff allowing the battery to move back and result in a rearward CG. That night repairs are completed and the battery is firmly secured (so it cannot move back). I also added a couple of cells to the back (23 up from 21) because the battery is fairly old and it did seem down a bit on power.

Too late now for a test flight so it's out to the lake on the seaplane day. Assemble model, charge battery, a quick blip of power to check the throttle and my flying buddy Mark Furgusen calmly states, "Your middle motor is running backwards". Bullshit I thought, another blip of power - he's right, THE MIDDLE MOTOR IS RUNNING BACKWARDS!! I cannot believe that the model was able to fly at all in this condition much less take off from water. I guess it's like flying an 8lb model on one 05 motor; those ASTRO 05's sure have some power!

My girlfriend videoed the flight. (She was suitably warned about videoing me on the retrieval swim). On watching the video it is pretty obvious something is seriously wrong. Also the prop-strikes on the canopy were caused by reverse airflow lifting the flimsy canopy/hatch. It's amazing how easy it is to overlook the obvious, but because I had tested the motor independently and then wired it up red wire to positive brush, black wire to negative brush I was absolutely sure it was right (I actually did not even consider the possibility of an error). The problem was basically due to wiring colour, stupidity and haste: speed controller - black wire --(-) to [M1](+)--red--(+) to [M2] (-)--black--(-) to [M3](+)--red - speed controller. As can be seen the wiring colour to the center motor is arse about, I realised this when I built the model but forgot later on. This episode actually happened a while ago and my embarrassment has now subsided to the point where I can talk about it.

DORNIER DO-24

Span:	75"
Area:	861 sq.inches. (981 sq.inches including seawings).
Weight:	134 oz
Wing Loading:	22.4 oz/sq.ft. (19.7 oz/sq.ft.)
Motors:	3 x Astro 05C geared.
Props:	3 bladed 10 x 7 (made from 11 x 7 wood props).
Battery:	21 x 900 Sanyo SCR Nicads.
Flight time:	6 minutes.



Secretive X-37B space plane ends seven month orbit

by Lance Whitney



Air Force personnel in "self-contained atmospheric protective ensemble suits" perform initial post-orbit checks on the X-37B space plane early today on a runway at Vandenberg Air Force Base.

The X-37B, an unmanned U.S. Air Force space plane whose mystery mission set off a round of speculation over the spring and summer, returned to Earth early this morning after its maiden flight lasted 220 days in orbit.

The space plane landed at 1:16 a.m. PT today at Vandenberg Air Force Base in California, officially making it the U.S.'s first unmanned vehicle to return from space and land on its own, according to Boeing, which designed the craft.

Launched in April from Cape Canaveral by an Atlas 5 rocket,

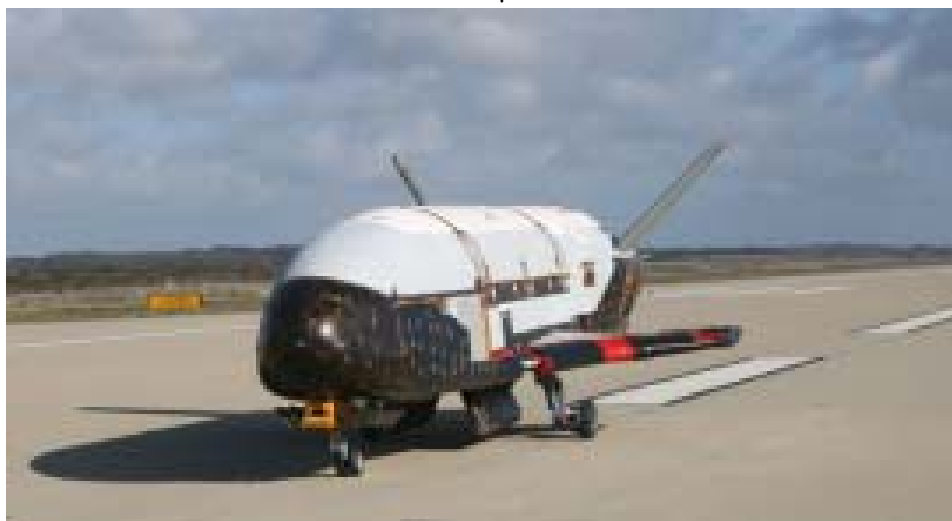
the X-37B was designed to stay in orbit for a maximum of 270 days, or about nine months. "We are very pleased that the program completed all the on-orbit objectives for the first mission," Lt. Col. Troy Giese, the X-37B program manager from the Air Force Rapid Capabilities Office, said in a statement today.

Also known as the Orbital Test Vehicle 1, the X-37B is comparable to, but much smaller than, NASA's space shuttles, which have served for three decades as the pre-eminent reusable spacecraft able to return to Earth from orbit. With the shuttles due to go into retirement early next year, the goal behind the X-37B is to demonstrate the feasibility of unmanned and reusable space vehicles for use in future missions. More specifically, the Air Force's stated purpose for this first flight was to see how the craft's guidance, navigation, and other unmanned systems would handle the orbit and landing. But a statement from the Air Force in April at the time of the launch date hinted at other uses. "If these technologies on the vehicle prove to be as good as we estimate, it will make our access to space more responsive, perhaps cheaper, and push us in the vector toward being able to react to war fighter needs more quickly," Gary Payton, the Air Force deputy undersecretary for space programs, said in a statement at that time.

The Air Force has kept mum about any potential military uses of the X-37B, along with whatever might have been in the space plane's payload bay during the test flight. Some experts and analysts believe the craft is designed to help push the development of combat and weapons systems, while others say it could serve as an unmanned orbital spy platform.

A second vehicle, dubbed the Orbital Test Vehicle 2, is being readied for launch in the spring. "This marks a new era in space exploration, and we look forward to the launch of the second vehicle in 2011," Paul Rusnock, Boeing's vice president of experimental systems and program director for the X-37B, said in a statement today. "By combining the best of aircraft and spacecraft into an affordable, responsive unmanned vehicle, Boeing has delivered an unprecedented capability to the RCO [the Air Force Rapid Capabilities Office]."

Weighing 11,000 pounds, measuring 29 feet long, and sporting a wingspan of less than 15 feet, the X-37B resembles a smaller version of the space shuttle. That's more than just a coincidence since the craft was originally a NASA project before the Air Force took it over.



The X-37B Orbital Test Vehicle on the runway, at an unspecified earlier date.

Bone found on Pacific island 'could belong to Amelia Earhart'

By Julian Ryall in Tokyo

A tiny sliver of bone found on a remote Pacific atoll may finally solve the riddle of the disappearance of Amelia Earhart, the pioneering pilot who vanished 73 years ago while attempting to circumnavigate the world close to the equator.

Researchers from The International Group for Historic Aircraft Recovery (TIGHAR) found the bone at the site of a castaway's encampment on the uninhabited island of Nikumaroro, a former British colony that is today part of the republic of Kiribati.

The bone, which may be a phalanx from a human finger, was located along with several other tantalizing clues about the fate of Earhart and her navigator, Fred Noonan, during TIGHAR's tenth expedition to the island this summer.

The search turned up the remains of a 1930s woman's compact - complete with residue of the makeup - a small bottle made in New Jersey in 1933 with the remnants of what appears to be hand lotion, a zip made in Pennsylvania in the mid-1930s and of a design that was never exported, and a broken pocket knife of the same brand that was listed in an inventory of Earhart's aircraft.

"The bone is being tested at the University of Oklahoma's Molecular Anthropology Laboratories to see if they contain human DNA," Ric Gillespie, executive director of the group, told *The Daily Telegraph*. "We should have the results in a few weeks, but if the results are positive we won't announce anything until the test is duplicated by another lab," he said. "If human DNA is extracted, it will be sequenced to Earhart's DNA."

Scientists have cautioned that the bone could be from the flipper of a turtle. But that does not dissuade TIGHAR from its basic theory that Earhart died on Nikumaroro.



Found at last?



Earhart was the first woman to fly solo across the Atlantic Ocean but when attempting to fly around the world in 1937, her plane crashed and Earhart was declared missing and eventually dead. Photo: AP

For many years, the accepted wisdom was that Earhart's Lockheed Model 10E Special "Electra" had simply run out of fuel and crashed into the ocean on July 2, 1937, as she searched for Howland Island, the final refuelling stop before flying on to Honolulu and completing the journey by touching down in Oakland, California. TIGHAR believes that the aircraft had sufficient fuel to reach Nikumaroro, where it landed on reef flats. Earhart and Noonan could have survived on the island for a time, but eventually succumbed to injury or infection, food poisoning or thirst. The theory is supported by British colonial records lodged in Fiji reporting the discovery of the partial skeleton of a castaway who perished shortly before the island was settled in 1938.

The bones were found in the shade of a tree in a part of the island that fits the description of the encampment that TIGHAR has been excavating. The site is dotted with the remains of small fires on which meals of birds, fish, turtle and even rat were cooked.

Gillespie said the recent discoveries "support and reinforce our theory" and the next expedition to the island will use remote-operated submersibles to search the deep water off the western end of the atoll for heavier parts of the aircraft - such as the engines - that would not have been washed further out to sea.

"It is our hope and intention to do the underwater search on or before July 2012, the 75th anniversary of Earhart's disappearance," he said.

Historic 747 reaches grim end in South Korea

The frustrated South Korean owners of the first 747 jetliner to carry commercial passengers, unable to profit from their piece of aviation history, have it demolished.



The Juan T. Trippe, the first jet to ferry passengers, is being demolished over five days.

founder, was bought in 2000 from a California airplane graveyard by the South Korean couple, who transformed it into an aviation-themed restaurant. Since that venture failed in 2005, the couple said they had unsuccessfully sought a buyer for the plane, which languished in a suburban lot 25 miles northeast of Seoul, its fuselage battered by the elements.

As its condition worsened, the jet, looking forlornly out of place next to a row of apartment buildings, soon became an Internet curiosity — as well as a bitter reminder to its owners of a monumental business miscalculation. After spending \$1 million for the plane and \$100,000 more to dismantle and ship it to South Korea, the couple, who run a noodle restaurant on the property, finally punched the plane's final ticket Sunday. On a cold afternoon, two cranes straddled the big jet, their jaws ripping into its fuselage as workers on the ground sifted through the plane's twisted wreckage looking for scrap materials. No plans have yet been announced on new uses for the space.

Boeing officials say the Trippe was the second 747 of the 1,000 the company produced. The first was used for test flights only, and the Trippe was the first to ferry passengers. After the Los Angeles Times recently featured the plane in a story, readers, including a onetime head flight attendant aboard the jet, e-mailed their memories. "I recognized the photo of the Juan Trippe like gazing upon the face of a dear old friend," she wrote. "If her walls could talk, her listeners would not believe the incredible stories she would tell from the golden age of travel which has long since passed into the history books."



The Juan T. Trippe sits on a lot 25 miles northeast of Seoul, South Korea. The plane was shipped to Korea in 2000. It was converted into a flight-themed restaurant.

There will be no more takeoffs for the Juan T. Trippe. The first 747 jetliner to ferry commercial passengers and a symbol of the golden age of air travel was demolished here Sunday as its owners gave up a frustrating decade-long attempt to make a profit from the mammoth piece of aviation history.

"So, you've come to take part in the funeral," one of the owners, who asked that their names not be used, said to a bystander.

After decades of flying to nearly every continent, the Trippe, named after Pan Am's

In recent months, the owners had been contacted by several potential buyers, including Japanese businessmen who wanted to display the Trippe in Tokyo as well as a group that wanted to move the plane and turn it into a church. When the religious group finally backed out, the owners despaired and decided that it was the last straw. The jet's demolition came 10 years and four months after they purchased the Trippe with high hopes. The wife said the husband cried, but he denied shedding tears over what he called a bad business investment. "Last night, she felt distraught and I said 'Stop your crying,' " he said. "The moment the cranes dug into the fuselage, I felt this great relief, this lifting of a burden from my chest."

Plane from Vietnam era arrives at Castle Air Museum

By MIKE NORTH
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ATWATER -- A plane that survived battles over Vietnam and endured the Cuban missile crisis made it past a more recent threat -- being scrapped.

Castle Air Museum recently acquired a Douglas RA-3B Skywarrior on a long-term loan from the National Museum of Naval Aviation.

It was hauled up from an aircraft storage facility in the city of Mojave on Thursday night and unloaded from flat-bed trucks by a crane Friday morning.

The plane, called "The Whale" because of its size, will be the 54th aircraft at the museum, said Joe Pruzzo, chief executive officer of Castle Air Museum Foundation Inc. Designed in the 1950s to combat aggression from the Soviet Union, the plane stayed in use until 1991 after the Gulf War, he said.

Skywarriors have been modified to refuel other planes, take part in electronic warfare and reconnaissance. Along the fuselage of the museum's Skywarrior are bulges along the fuselage. They once were camera ports used during reconnaissance missions during the Cuban missile crisis and Vietnam War, Pruzzo said. The soon-to-be restored Skywarrior had two sister planes, he noted. Both were shot down in Vietnam. This Skywarrior is the only reconnaissance model in existence, Pruzzo added. The museum also houses the only reconnaissance B-36 bomber.

Castle Air Museum didn't have to pay for any of the work to bring the plane in, he said. Everything, including time and equipment, was donated. Pruzzo described the plane's recovery as low budget. "The USS Midway Museum in San Diego had one recovered that was a different variant of this, and they paid upwards of \$100,000 to get it taken apart, shipped and restored," he said. "We are just very, very fortunate to have the priceless contribution of our restoration volunteers. If we had to pay for this, there's no way we could do it."



Volunteers unload a Douglas RA-3B Skywarrior on Friday at Castle Commerce Center. The plane will be restored.



An EA-3B Dougllass Skywarrior of Fleet Air Reconnaissance Squadron TWO (VQ-2) lands on the USS *Kitty Hawk* in 1987.

five hours, he said, and the massive plane got a lot of second looks from travelers driving past.

If anyone would like to contribute to the restoration of the plane, contact the museum at (209) 723-2178. Sizeable contributions are commemorated with the donor's name on a plaque.

One of those volunteers, Bill Hiller, thinks the plane will take about a year to 18 months to restore. Hiller, who's been a volunteer for more than 20 years and has been working on planes since 1941, said restoring the planes takes a lot of paint. Most of the time goes into the detail work, such as insignias. Hiller retired from the Air Force in 1966 after flying missions in World War II, Korean War, Vietnam War and Cold War. He said he's become attached to military planes and enjoys taking time to work on them.

Pat Jameson of Jameson Harvesting in Turlock takes pride in helping keep the history of military planes alive. He and his uncle, Mike Jameson, volunteered to haul the plane from Mojave. The Skywarrior is the sixth plane he's helped haul for the museum. The drive took about

A woman burst out of the examining room screaming after her young physician tells her she is pregnant. The director of the clinic stopped her and asked what the problem was. After she tells him what happened, the doctors had her sit down and relax in another room and he marched down the hallway where the woman's physician was and demanded, "What is wrong with you?"

Mrs. Miller is 60 years old, has six grown children and nine grandchildren, and you told her she was pregnant?" The young physician continued to write his notes and without looking up at his superior, asked, "Does she still have the hiccups?"

Sky's the limit for Tyler

Anthony Templeton From: *The Courier-Mail* January 04, 2011.

TOOWOOMBA youngster Tyler Mees is on track to win a spot in the Australian team competing in the model aircraft World Championship to be held in Bundaberg later this year.

The 16-year-old Christian Outreach College student placed third in the National Model Aircraft Championship that was held in Dalby over the weekend, making Tyler the highest placed Queenslander in the competition.

The judges were so impressed with his performance in the open category that they invited him to compete in the trials for the Australian Junior World Championship team to be held in Lismore in March.

"It's a pretty amazing feeling to know that I could be representing my country," Tyler said. "I fell in love with the sport when I was about six and representing Australia would be such a great reward for all the time I have spent practicing."

The model aeroplane that Tyler flies is able to travel at speeds of more than 350km/h and costs \$3000. "It's definitely not something you want to break," Tyler said.



PC-Aero Elektra One passes static tests, will fly soon

For the past two years, PC-Aero has been developing an electric aircraft and looking forward to the day when it first takes to the skies. That day is expected to arrive later this month as the company has just finished up static tests for German Ultralight Certification for its Elektra One. During these tests, the wings and fuselage are loaded to their rated capacity and the battery-powered soon-to-be flyer apparently passed.

The single-seater is the first of a whole family of planned vehicles that includes a solar version as well as two- and four-seaters. Perhaps one of the most striking things



about this Elektra One is its potential range. Its design parameters call for a three-hour flight time. Whether or not it can actually live up to this claim should be known before the year is out. The aircraft has been entered into the NASA-funded CAFE Green Flight Challenge in pursuit of the \$1.6 million prize.

For Lockheed's F-35 2011 may be a do-or-die year

By Bob Cox rcox@star-telegram.com

If there's one thing the F-35 joint strike fighter program needs in 2011, it is some clear-cut signs of progress. Hounded by controversy for much of the past two years, the F-35 has become the poster child for troubled, vastly over-budget military weapons programs.

Defense Secretary Robert Gates and other top officials have repeatedly complained about the performance of contractor Lockheed Martin and soaring cost estimates. Top military and civilian managers of the program were fired or changed jobs.

That's not a good track record now that the political dialogue is largely about cutting budgets and deficits. The danger, said Richard Aboulafia, an aerospace industry analyst with the Teal Group in Fairfax, Va., is that if the F-35 doesn't show real and visible progress it will become more of a target. "They need to fly it more publicly. They need to show what it can do," Aboulafia said. "I think the biggest danger is Congress gets fed up with missed deadlines and problems and decides to fix things by cutting funding, and then you miss more deadlines."

Lockheed officials say they made progress in 2010 testing the jets and learning what worked and what didn't. The tests flights went well, said J.D. McFarlan, vice president of F-35 testing. "The pilots are pleased with the handling and flying qualities of the jets." The test plan called for 394 flights in 2010. The final number was 410, but that's misleading. Two airplanes, both conventional-takeoff-and-landing F-35A models, flew about 30 percent more than planned at Edwards Air Force Base in California.

Meanwhile, the troubled F-35B short-takeoff-vertical-landing model, the most technically demanding version, completed 20 percent fewer test flights than planned using five planes flying out the Navy's Patuxent River, Md., test center. "With the STOVL we wish we were further along," McFarlan said. "With that caveat, we're pleased with how things are going." With the F-35A jets, Lockheed and military test pilots completed all the basic flying tests, including formation flying and aerial refueling. Much of the initial testing of onboard radar and communications systems has also been conducted. Enough work has been completed, McFarlan said, to meet the Air Force's standards to begin training pilots once planes are available. But the F-35B has had problems with component reliability. The issues are not big problems with the engine or the lift fan, which provides the propulsion for vertical flight, but rather smaller items with vital functions, McFarlan said. After lagging way behind for much of the year, the F-35Bs racked up 30 flights in November, "a good sign," he said.

Testing the F-35B in the critical vertical landing mode is still far behind schedule. But as planes return to flying, McFarlan said, they're accomplishing other work in low-altitude, low-speed flight that would lead to vertical landings, as well as higher-speed, higher-altitude performance tests. "The pilots, when they get to go out and convert, do a vertical landing, do a short takeoff, they're very complimentary of the handling and flight capabilities of the aircraft," McFarlan said. The work done so far has already shown that the F-35B will be much easier to fly than its predecessor, the Marines' AV-8B Harrier, McFarlan said.

In some cases, flight data collected from F-35Bs also applies to the other versions, and software changes have been implemented.

One by one, McFarlan said, Lockheed and its suppliers are identifying the causes of reliability problems with components. New parts are designed and produced and are installed on aircraft as soon as they are available, and planes are returned to testing. The early testing, McFarlan said, has enabled Lockheed and its suppliers to work through some issues that were expected and that in the past have proved difficult to resolve. One example is wing roll off, an aerodynamic phenomenon that occurs when a plane nears supersonic speed. Using test data, engineers have already rewritten the computer software that operates the plane's control surfaces and tested and installed it in the test planes.

In the past, fixing problems like that "has sometimes taken years to work through," McFarlan said. "We've been able to work through that in a matter of months."



Lockheed and its suppliers are identifying the causes of reliability problems with F-35 components, said J.D. McFarlan, vice president of F-35 testing. New parts are designed and produced and are installed as soon as they are available, and planes are returned to testing.

'New' Wright B model flying

By Alton K. Marsh

A one-of-a-kind airplane designed to showcase Dayton, Ohio's aviation heritage around the world has made brief hops off the ground and is ready for a formal flight test program next spring. It was built by an all-volunteer group.

Since last October, volunteer test pilots have put Wright B Flyer No. 002 through a series of low and high-speed taxi tests at Dayton's Wright Brothers Airport, where Wright B Flyer Inc. has its hangar and museum.

Pilots also have made 76 brief hops in

which the airplane rose several feet into the air but remained above the runway. It will cruise at 70 mph.

Dubbed the "Silver Bird" because of its silver-painted steel frame, the airplane is built to modern standards but resembles the Wrights' first production flyer, the Model B. It has been in development since 2007, when the organization decided it needed a second Model B look-alike that was easy to ship, assemble, and fly at international events. The organization's flagship Model B, the familiar "Brown Bird," has been flown at events across the United States and shipped as far as Berlin, Germany, for displays. But tearing it down, shipping it, and making it flyable again is expensive and takes a large crew of skilled volunteers. "This airplane extends our reach in promoting our aviation heritage and Ohio's aerospace business. We used to have regional markets. We have a global market today, and there's no place in the world we can't take this airplane," said John Bosch, chairman of Wright B Flyer's board of trustees.

"This plane is a great marketing tool for the National Aviation Heritage Area as it has the portability to allow people anywhere in the world to experience the accomplishments of the Wright brothers and the airplanes they built here in Dayton," said Tony Sculimbrene, executive director of the National Aviation Heritage Alliance.

An old, blind cowboy wanders into an all-girl biker bar by mistake. He finds his way to a bar stool and orders a shot of Jack Daniel. After sitting there for a while, he yells to the bartender, 'Hey, you wanna hear a blonde joke?' The bar immediately falls absolutely silent. In a very deep, husky voice, the woman next to him says, 'Before you tell that joke, Cowboy, I think it is only fair, given that you are blind, that you should know five things:

1. The bartender is a blonde girl with a baseball bat.
2. The bouncer is a blonde girl.
3. I'm a 6-foot tall, 175-pound blonde woman with a black belt in karate.
4. The woman sitting next to me is blonde and a professional weight lifter.
5. The lady to your right is blonde and a professional wrestler.

Now, think about it seriously, Cowboy. Do you still wanna tell that blonde joke?'

The blind cowboy thinks for a second, shakes his head and mutters, 'No...not if I'm gonna have to explain it five times.'

Three dead bodies turn up at the mortuary, all with very big smiles on their faces. The coroner calls the police to show them what's happened. A Detective Inspector is sent and is taken straight to the first body.

"Englishman, 60, died of heart failure whilst making love to his mistress. Hence the enormous smile Inspector", says the Coroner. The Detective Inspector is taken to the second dead man. "Scotsman, 25, won a thousand pounds on the lottery, spent it all on whisky. Died of alcohol poisoning, hence the smile."

Nothing unusual here, thinks the Detective Inspector, and asks to be shown the last body. "Ah," says the coroner, "this is the most unusual one. Irishman, 30, struck by lightning."

"Why is he smiling then?" inquires the Inspector. "He thought he was having his picture taken", replies the coroner.

Woman goes to the doctor, beaten black and blue. Doctor asks: "What happened?" Woman says: "Doctor, I don't know what to do. Every time my husband comes home drunk he beats me to a pulp." Doctor says: "I have a good cure for that. When your husband comes home drunk, just take a glass of sweet tea and start swishing it in your mouth. Just swish and swish but don't swallow until he goes to bed and is asleep." Two weeks later the woman comes back to the doctor looking fresh and reborn. Woman says: "Doctor, that was a brilliant idea! Every time my husband came home drunk, I swished and swished with sweet tea and he didn't touch me! How does the tea do that?" Doctor says: "The tea does bugger all, it's keeping your mouth shut that does the trick?"



US Navy's electric plane-thrower successfully launches an F-18

Light at end of 10-year tunnel for Royal Navy? By Lewis Page

The US Navy says it has successfully launched a jet fighter into flight using a radical new electromagnetically powered catapult. The feat is important for the Americans, whose next supercarrier will be a disastrous botch without



the new tech: it is even more critical for the future of the Royal Navy.

The US Naval Air Systems Command (NAVAIR) announced the test success of its Electromagnetic Aircraft Launch System (EMALS) last night, saying that the shore-based trials catapult at Lakehurst, New Jersey, suc-

cessfully launched a Navy F/A-18E Super Hornet on Saturday.

"I thought the launch went great," said Lieutenant Daniel Radocaj, the test pilot who flew the Hornet off the electric mass-driver. "I got excited once I was on the catapult but I went through the same procedures as on a steam catapult. The catapult stroke felt similar to a steam catapult and EMALS met all of the expectations I had."

The "shooter" in charge of the ground team conducting the launch was Chief Petty Officer Brandon Barr, who said being chosen for the task was an honour and that "it was very exciting to knowingly be a part of naval aviation history".

The next US fleet carrier - CVN 78, aka USS *Gerald R Ford* - is now at an advanced stage of build, and was designed around the EMALS. If EMALS couldn't be made to work, the US Navy would have found itself in possession of the world's biggest helicopter carrier. There will be much celebration at NAVAIR following Saturday's success.

The Royal Navy, too, could feel some muted satisfaction. Though the Fleet Air Arm has been stripped of its Harriers and their ski-jump carriers in the recent Defence cuts package, Prime Minister Cameron promised that in a decade's time (provided that the next two governments agree) the RN will re-enter the world of serious maritime aviation. It will do this using one of the two aircraft carriers now being built - the other may be mothballed or even sold. If it is mothballed, however, the option would be there to have one ship up and running almost continuously: the other likely plan is to work a solo ship back-to-back with the French.

Under the original plan, the British ships were to carry the revolutionary F-35B, the world's first ever supersonic stealth jumpjet. An F-35B, like the Harrier before it, can get airborne from a ski-jump ramp with a combat load and return to the deck (having burned fuel and expended weapons) in a hover landing. Unlike the Harrier, the F-35B is also warranted to get back aboard ship still carrying a brace of heavy air-to-air missiles* - if necessary using a cunning "rolling vertical" landing, which would have been the RN's plan. Thus HMS's *Queen Elizabeth* and *Prince of Wales* would have needed no catapults, and none are provided at the moment.

But the F-35B is a tremendously complicated machine. It will always be expensive, and it is moving slowly through flight test at present. Even in 10 years it would probably be unaffordable for Britain in any numbers. The solution chosen has been to buy F-35C catapult planes instead, the type the US Navy will be getting. These are still stealth fighters (or fighter-bombers anyway, rather more useful for most purposes) but they don't need the vertical-thrust machinery of the B model. Thus they are somewhat cheaper and have improved performance in the air.

US Navy achieves '100 mile' hypersonic railgun test shot

Electro-hypercannon could bring back the dreadnought era By Lewis Page

The US Navy, continuing its quest for a hyper-velocity cannon which might restore the big-gun dreadnought to its lost dominion over the seas, has carried out a new and record-breaking railgun test. This latest trial firing pushed muzzle energy to a blistering 33 megajoules (MJ). The muzzle velocity, as in the previous 10 MJ test in 2008, was still approximately Mach 7.5, but the heavier projectile used this time carried much more kinetic energy: approximately enough to strike targets 100 miles away in an operational weapon, according to the Office of Naval Research (ONR). The ONR wants to achieve lab trials at 64 MJ, potentially offering 200 mile range with projectiles striking at Mach 5, before trying to build an actual weapon.

A railgun works by passing vast amounts of electricity from one rail to the other via an armature linking the two: this generates a huge force driving the armature down the rails and out of the end of the gun. The armature can be the projectile itself, attached to it, or may be a sabot which will drop away once the slug is flying free.

The technical challenges of building railguns are many. Not least among these is the generation of very brief pulses of extremely high electrical power (the armature's run along the rails, even if they are quite long, is necessarily over very quickly - so the gun hasn't got long to put poke behind it). Then there's the matter of making rails that won't be destroyed by the armature screaming along them, which is yet to be properly sorted out (at the moment, the ONR only trusts its railguns to survive two or three shots before being knackered).

Assuming that the various issues of building a railgun can be solved, one must then deploy it to war and find power for it. About the only mobile platform able to supply the vast amounts of electricity required for a combat railgun is a warship, so it's no surprise to find the navy rather than the air force or army looking into this. Not only would a 64 MJ railgun permit a warship to pound targets far away below the horizon with unstoppable Mach 5 hypersonic hammer-blows, lesser hypersonic cannon might also sweep the skies of pesky, merely-supersonic aircraft and missiles.

Ever since the Battle of Midway, sailors have reluctantly been forced to accept that it's aircraft (and nowadays missiles) which win battles at sea, not ships: generally speaking it is also aircraft which permit navies to directly influence events ashore. The aircraft carrier long ago supplanted the mighty big-gun battleship as top naval dog.

But railgun warships might put an end to this, swatting down ship-killer missiles or attacking aircraft from afar with ease and splattering targets ashore quickly and responsively - no need to keep aircraft on station or wait endless tens of minutes for a subsonic cruise missile to cover the distance. The only way to deal with a railgun dreadnought - just as in the days of old when the first armoured all-big-gun battlewagons appeared - would be by using a ship just like it. Surface warships and surface-fleet officers, once again, would rule the seas and the naval roost.

Apart from all that, another major advantage would be on offer for navy logistics. Rather than troublesome missiles or shells crammed with explosive warheads and propellants, the supply chain would only need to handle inert projectiles and some extra supplies of fuel for the ships' engines. Railgun warships would be less prone to blowing up when hit in combat, too.

So it's all good, from a naval point of view. But the ONR has many hills to climb yet before their new technology is an actual functioning weapon rather than a one-off laboratory test rig.

Footnote: The new Royal Navy Type 45 destroyers, the first warship class to use electric transmission for main full-speed propulsion, can supply a bit more than 40 megawatts of electricity. If fitted with one of the US ONR's desired 64-MJ railguns, they could recharge it for another shot in a little over a second and a half, though this rate of firing would leave little juice left for propulsion. At the other end of the spectrum, a US Navy *Nimitz*-class supercarrier has twin 550-megawatt nuclear reactors (though it doesn't use electric trans-





The Spitfire Floatplane That Reginald Mitchell Would Have Loved

During the 1940 Norwegian campaign, the RAF found itself at a disadvantage with relatively few airfields to operate from during the German invasion of Norway and Denmark, Operation Weserübung. In fact, on the day of the invasion, 9 April, German paratrooper units seized three main airfields in the southern part of the country near the capital, Oslo. The British Air Staff issued a priority requirement for floatplane versions of both the Supermarine Spitfire and Hawker Hurricane that could operate out of the many fjords of the Norwegian coast.

Folland Aircraft began work on a Spitfire Mk.I using floats from a Blackburn Roc, but within 24 hours of the invasion, major cities as far north as Narvik had already been seized by German forces. As result, the requirement faded away and the aircraft was de-modified and returned to normal configuration. However, the idea of a Spitfire floatplane resurfaced in 1942 following some low-priority work on the concept at Folland that had continued even after the fall of Norway.

This time a Spitfire Mk.V was used and this time, specially designed floats were used that were the brainchild of Arthur Shirvall, who had designed the high speed floats that were used in the 1920s and 1930s on the Supermarine family of racing floatplanes that the Spitfire claimed its ancestry. Additional modifications to the Mk.V Spitfire included a four-bladed propeller to replace the stock three-bladed unit and an extended ventral fin below the tail to counteract the reduced directional stability caused by the twin floats.



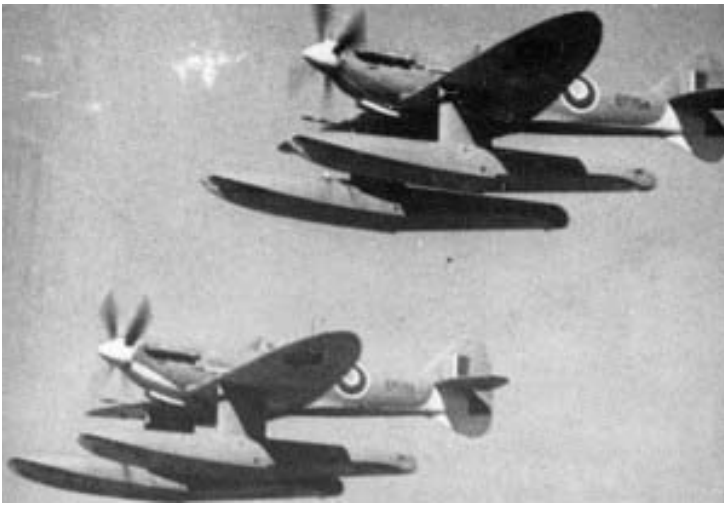
On 12 October 1942 the Spitfire floatplane made its maiden flight from Southampton Harbour and initial test flights showed the need for a larger ventral fin. After more modifications, the Spitfire floatplane prototype flew again in January 1943 from Glasgow, Scotland, on its first RAF service trials. Fully loaded, the Spitfire floatplane only weighed 1,100 lbs more and only suffered a 40mph reduction in maximum speed, being capable of 324 mph at 19,200 feet. With a rate of climb of 400 feet/minute, it was less than a stock Mk.V Spitfire, but acceptable to the RAF. Surprisingly, there was only a modest reduction in manoeuvrability and test pilots found the Spitfire floatplane more manoeuvrable than any other floatplane. Handing both in the air and on the water was found to be relatively easy during the service trials.

Other than having to compensate for the torque of the engine on the takeoff run by applying 1/3 to 1/2 rudder, the RAF test pilots felt that the Spitfire floatplane could be easily flown by line pilots.

In the summer of 1943, the RAF began planning for an operation that would utilize the Spitfire floatplane against the German garrisons on the Dodecanese Islands in the eastern Mediterranean off the coast of Turkey. Transport aircraft supplied the various garrisons and the plan was to use Spitfire floatplanes hiding at a small, uninhabited island in the area to attack the transport aircraft. A submarine would be used as a base and house the crews and between missions the Spitfire floatplanes would rest at their moorings next to the submarine under camouflage netting.

Folland Aircraft was issued a contract to convert two more Spitfire Mk.Vs to floatplane configuration and after the flight testing of the two, newer aircraft, all three were partially disassembled and shipped to the RAF seaplane base at Fanara, Egypt, on the shores of the Great Bitter Lake. The prototype was found to have serious corrosion in the empennage and was set aside until Folland could ship a new tail to the base. The other two Spitfire floatplanes were assembled and test flown with the work finishing up in November 1943. Operational pilots were recruited from Spitfire crews assigned to the Middle East and they received brief seaplane conversion training on a Supermarine Walrus before converting to the Spitfire floatplanes. Four pilots underwent conversion training for the Dodecanese operation.

During training on the Egyptian lake, the pilots found that the floats leaked more than hoped and the aircraft had to be hauled out of the water to allow the floats to drain. Not an issue at a seaplane base, but at a submarine mooring



on a small island in the Dodecanese Islands, it would be an issue. Pilots also found that the Spitfire floatplane only handling vice was trying to take off in crosswinds over 15 mph which was near impossible. Questions arose as to whether a suitable "secret" location could be found in the Dodecanese chain that would allow more flexible takeoffs. Discussions on the matter eventually proved to be moot as the Luftwaffe reinforced the area just a few weeks prior to the planned start of the operation. The four pilots were released back to their original Spitfire units and the three Spitfire Mk.V floatplanes were put in storage.

It wasn't quite the end of the story yet as during the spring of 1944 the idea of the Spitfire floatplane was re-examined for operations in the Pacific. Once again, the RAF asked Folland to convert a Spitfire and this time a powerful Mk.IX was chosen, making its first flight on 18 June 1944. With a more powerful engine, this version of the Spitfire floatplane could even outperform a standard land-based Hawker Hurricane. However, the pace of the war intervened again as the operational need faded and the Spitfire Mk.IX floatplane joined the other three Mk.V float planes in storage. Eventually all were scrapped, ending the story of a unique Spitfire variant that hearkened back to its roots as one of Reginald Mitchell's inspired Schneider Cup racing floatplanes.

It's the birthday of the first man to travel faster than the speed of sound: Chuck Yeager, born in Myra, West Virginia, on 13th February, 1923.

Whereas 20/20 is considered "perfect vision," his was better than perfect at 20/10, and he once shot a deer from 600 yards away. This keen vision was a great asset to a future pilot.

He joined the Air Force as mechanic, became a fighter pilot during World War II, was shot down by Germans over France, escaped to Spain and then returned to England, and resumed air combat, flying many successful missions.

After the war he became a test pilot in the Air Force, flying rocket planes and other aircraft. He was selected as the pilot to fly the rocket-powered airplane "Bell X-1" on a mission to break the sound barrier for the first time. In the weeks before the flight was scheduled, people in the aviation community muttered stuff like, "He better have paid-up insurance."

Then, two days before his historic test flight, he broke a couple of ribs while riding a horse. He was so afraid that they would remove him from the mission that he didn't tell anyone except his wife and one friend, who gave him a broom handle to reach up and close the hatch — since he would not be able to reach up and grab it with his ribs broken.

It was on October 14, 1947, that Chuck Yeager broke the sound barrier, Mach 1. He was at an altitude of 45,000 feet — about eight and a half miles up in the air. Fourteen minutes later, he was back on the ground, and he went home to bed to recuperate.

The role of Chuck Yeager was played by Sam Shepard in the movie *The Right Stuff* (1983), based on the 1979 Tom Wolfe book. Yeager has co-authored a few volumes of memoir, including *The Quest for Mach One: A First-Person Account of Breaking the Sound Barrier* (1997), *Yeager: An Autobiography* (1985), and *Press on! Further Adventures in the Good Life* (1988).

Charles Elwood Yeager
Born February 13, 1923 (age 88)



Brigadier General Charles Elwood Yeager

I am having some considerable success with my carbon Butterfly. My early attempts were frustrated as when I tried to put on enough turns to stay up over 50 seconds, I broke the rubber motor. It was plain I needed to lubricate the rubber. I went to Boots the chemist and asked for Caster Oil. The young lady asked what I needed it for and I of course said rubber lubricant. She gave me a knowing smile and produced a tube of KL virginal jelly from beneath the counter. I was not familiar with it, assuming it must be similar to the extra virgin olive oil have seen in the supermarket and I asked if it was as good as castor oil. She replied that all the young men she knew claimed it was even better, as using it they could stay up twice as long. This was just what I wanted to hear. I tried it on the Carbon Butterfly and can now achieve flights of 80 seconds without breaking the motor. Best regards, John.

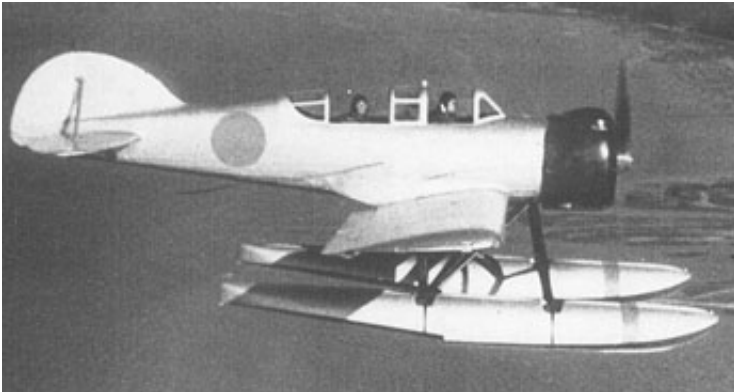


The Day Japan Bombed Oregon, USA, By: Norm Goyer

September 9, 1942, the I-25 class Japanese submarine was cruising in an easterly direction raising its periscope occasionally as it neared the United States Coastline. Japan had attacked Pearl Harbor less than a year ago and the Captain of the attack submarine knew that Americans were watching their coast line for ships and aircraft that might attack our country. Dawn was approaching; the first rays of the sun were flickering off the periscopes lens.

Their mission; attack the west coast with incendiary bombs in hopes of starting a devastating forest fire. If this test run were successful, Japan had hopes of using their huge submarine fleet to attack the eastern end of the Panama Canal to slow down shipping from the Atlantic to the Pacific.

The Japanese Navy had a large number of I-400 submarines under construction. Each capable of carrying three aircraft. Pilot Chief Warrant Officer Nobuo Fujita and his crewman Petty Officer Shoji Okuda were making last minute checks of their charts making sure they matched those of the submarine's navigator.



The only plane ever to drop a bomb on the United States during WWII was this submarine based Glen.

September 9, 1942: Nebraska forestry student Keith V. Johnson was on duty atop a forest fire lookout tower between Gold's Beach and Brookings Oregon. Keith had memorized the silhouettes of Japanese long distance bombers and those of our own aircraft. He felt confident that he could spot and identify, friend or foe, almost immediately.

It was cold on the coast this September morning, and quiet. The residents of the area were still in bed or preparing to head for work. Lumber was a large part of the industry in Brookings, just a few miles north of the California Oregon state lines.

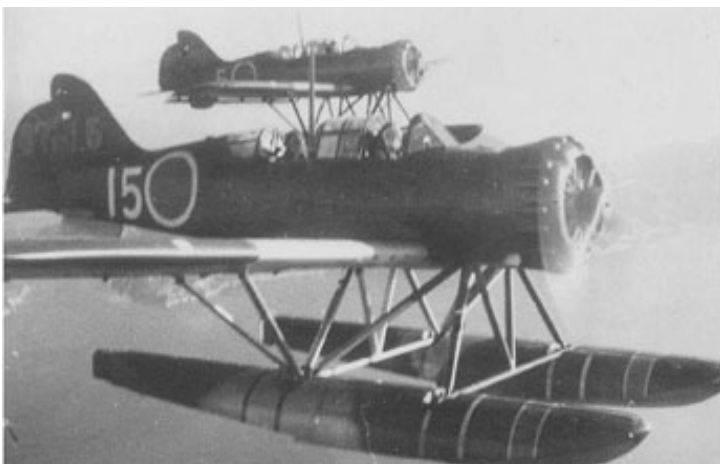


The aircraft carried two incendiary 168 pound bombs and a crew of two.

Aboard the submarine the Captain's voice boomed over the PA system, "Prepare to surface, aircrew report to your stations, wait for the open hatch signal." During training runs several subs were lost when hangar door were opened too soon and sea water rushed into the hangars and sank the boat with all hands lost. You could hear the change of sound as the bow of the I-25 broke from the depths, nosed over for its run on the surface. A loud bell signaled the "All Clear."

The crew assigned to the single engine Yokosuka E14Ys float equipped observation and light attack aircraft sprang into action. They rolled the plane out its hangar built next to the conning tower. The wings and tail were unfolded, and several 176 pound incendiary bombs were attached to the hard points under the wings. This was a small two passenger float plane with a nine cylinder 340 hp radial engine.

It was full daylight when the Captain ordered the aircraft to be placed on the catapult. Warrant Officer Fujita started the engine, let it warm up, checked the magnetos and oil pressure. There was a slight breeze blowing and the seas were calm. A perfect day to attack the United States of America. When the gauges were in the green the pilot signalled and the catapult launched the aircraft. After a short climb to altitude the pilot turned on a heading for the Oregon coast.



The "Glen" was launched via catapult from a I-25 class Japanese submarine.

Johnson was sweeping the horizon but could see nothing, he went back to his duties as a forestry agent which was searching for any signs of a forest fire. The morning moved on. Every few minutes he would scan low, medium and high but nothing caught his eye.

The small Japanese float plane had climbed to several thousand feet of altitude for better visibility and to get above the coastal fog. The pilot had calculated land fall in a few minutes and right on schedule he could see the breakers flashing white as they hit the Oregon shores.

Johnson was about to put his binoculars down when something flashed in the sun just above the fog bank. It was unusual because in the past all air traffic had been flying up and down the coast, not aiming into the coast.

The pilot of the aircraft checked his course and alerted his observer to be on the lookout for a fire tower which was



on the edge of the wooded area where they were supposed to drop their bombs. These airplanes carried very little fuel and all flights were in and out without any loitering. The plane reached the shore line and the pilot made a course correction 20 degrees to the north. The huge trees were easy to spot and certainly easy to hit with the bombs. The fog was very wispy by this time.

Warrant Officer Fujita is shown with his Yokosuka E14Y (Glen) float plane prior to his flight.

Johnson watched in awe as the small floatplane with a red meat ball on the wings flew overhead, the plane was not a bomber and there was no way that it could have flown

across the Pacific, Johnson could not understand what was happening. He locked onto the plane and followed it as it headed inland.



The pilot activated the release locks so that when he could pickled the bombs they would release. His instructions were simple, fly at 500 feet, drop the bombs into the trees and circle once to see if they had started any fires and then head back to the submarine.

Johnson could see the two bombs under the wing of the plane and knew that they would be dropped. He grabbed his communications radio and called the Forest Fire Headquarters informing them of what he was watching unfold.

The bombs tumbled from the small seaplane and impacted the forests, the pilot circled once and spotted fire around the impact point. He executed an 180 degree turn and headed back to the submarine. There was no air activity, the skies were clear. The small float plane lined up with the surfaced submarine and landed gently on the ocean, then taxied to the sub. A long boom swung out from the stern. His crewman caught the cable and hooked it into the pickup attached to the roll over cage between the cockpits. The plane was swung onto the deck, The plane's crew folded the wings and tail, pushed it into its hangar and secured the water tight doors. The I-25 submerged and headed back to Japan.

This Memorial Plaque is located in Brookings, Oregon at the site of the 1942 bombing

This event, which caused no damage, marked the only time during World War II that an enemy plane had dropped bombs on the United States mainland. What the Japanese didn't count on was coastal fog, mist and heavy doses of rain made the forests so wet they simply would not catch fire.

Fifty years later the Japanese pilot, who survived the war, would return to Oregon to help dedicate a historical plaque at the exact spot where his two bombs had impacted. The elderly pilot then donated his ceremonial sword as a gesture of peace and closure of the bombing of Oregon in 1942.

When our lawn mower broke and wouldn't run, my wife kept hinting to me that I should get it fixed. But, somehow I always had something else to take care of first, the shed, the boat, making beer, always something more important to me.

Finally she thought of a clever way to make her point. When I arrived home one day, I found her seated in the tall grass, busily snipping away with a tiny pair of sewing scissors. I watched silently for a short time and then went into the house. I was gone only a minute, and when I came out again I handed her a toothbrush. I said, "When you finish cutting the grass, you might as well sweep the driveway." The doctors say I will walk again, but I will always have a limp.

The Fourth Most Produced Civilian Plane.

The Cessna 150 is a two-seat tricycle gear general aviation airplane, that was designed for flight training, touring and personal use. It is the fourth most produced civilian plane ever, with 23,839 aircraft produced. The Cessna 150 was offered for sale in the 150 basic model, Commuter, Commuter II, Patroller and the aerobatic Aerobat models. Development of the Model 150 began in the mid 1950s with the decision by Cessna Aircraft to produce a successor to the popular Cessna 140 which finished production in 1951. The main change in the 150 design was the use of tricycle landing gear, which is easier to learn to use than the tail-wheel landing gear of the Cessna 140.



Cessna 150

The best-performing airplanes in the 150 and 152 fleet are the 1962 Cessna 150B and the 1963 Cessna 150C. Thanks to their light 1,500 lb (680 kg) gross weight and more aerodynamic rear fuselage, they climb the fastest, have the highest ceilings, and require the shortest runways. They have a 109-knot (202 km/h) cruise speed, faster than any other model year of either the 150 or 152.

A total of 22,138 Cessna 150s were built in the United States, including 21,404 Commuters and 734 Aerobats. Reims Aviation completed 1,764 F-150s, of which 1,428 were Commuters and 336 were Aerobats. Forty-seven F-150s were also assembled by a Reims affiliate in Argentina, including 38 Commuters and 9 Aerobats. Of all the Cessna 150-152 models, the 1966 model year is the most plentiful with 3,067 1966 Cessna 150s produced. This was the first year the aircraft featured a swept tail fin, increased baggage area and electrically operated flaps.

THE AUSSIE DUNNY

They were funny looking buildings, that were once a way of life,
If you couldn't sprint the distance, then you really were in strife.
They were nailed, they were wired, but were mostly falling down,
There was one in every yard, in every house, in every town.

They were given many names, some were even funny,
But to most of us, we knew them as the outhouse or the dunny.
I've seen some of them all gussied up, with painted doors and all,
But it really made no difference, they were just a port of call.

Now my old man would take a bet, he'd lay an even pound,
That you wouldn't make the dunny with them turkeys hangin' round.
They had so many uses, these buildings out the back,"
You could even hide from mother, so you wouldn't get the strap.

That's why we had good cricketers, never mind the bumps,
We used the pathway for the wicket and the dunny door for stumps.
Now my old man would sit for hours, the smell would rot your socks,
He read the daily back to front in that good old thunderbox.

And if by chance that nature called sometime through the night,
You always sent the dog in first, for there was no flamin' light.
And the dunny seemed to be the place where crawlies liked to hide,
But never ever showed themselves until you sat inside.

There was no such thing as Sorbent, no tissues there at all,
Just squares of well read newspaper, a hangin' on the wall.
If you had some friendly neighbours, as neighbours sometimes are,
You could sit and chat to them, if you left the door ajar.

When suddenly you got the urge, and down the track you fled,
Then of course the magpies were there to peck you on your head.
Then the time there was a wet, the rain it never stopped,
If you had an urgent call, you ran between the drops.

The dunny man came once a week, to these buildings out the back,
And he would leave an extra can, if you left for him a zac.
For those of you who've no idea what I mean by a zac,
Then you're too young to have ever had, a dunny out the back.



Fort Worth Company Working On Chopper, SUV Hybrid



Posted on: Tuesday, 11 January 2011, 14:05 CST

AVX Aircraft Company, a Fort Worth, Texas-based company, is working on technology that might make flying sports utility vehicles a reality, starting with innovative ideas in helicopters. The AVX is a concept from Bell Helicopter executives with decades of experience in vertical flight that is to make helicopters more efficient, easier to pilot and be more affordable.

The company believes it has a cheap way to refurbish 330 U.S. Army OH-58D model helicopters and replace them with advanced helicopter technology. "This is very unique," Troy Gaffey, president and chief engineer of AVX Aircraft Company, told Fort Worth's WFAA. "I don't think I've ever seen anything like that before." The AVX chopper has two rotors for lift that rotate in different directions, a design that uses less power and makes the aircraft more stable. The design also uses two pusher fans, which boost airspeed and altitude.

A conventional helicopter's rotor creates a spinning force, which makes it want to spin around. To keep that from happening, there is a tail rotor that helps hold the aircraft in place. Coaxial rotors eliminate the spinning, along with the need for a tail rotor. The AVX design has two large fans that push the aircraft forward, in place of where the tail rotor would be. "It's being flown more like a regular airplane than it is a helicopter," said AVX spokesman Frank King. Ron Magnuson flew over Kabul, Afghanistan in an AVX simulator. The AVX has more power without having to waste energy on a tail rotor. "That means you can lift more weight, which is very, very significant," Magnuson explained to WFAA. AVX will present its concept to the U.S. Army this month.



AVX has completed the preliminary design of the AVX TX, and has responded to the Broad Agency Announcement (BAA) from the Defense Advanced Research Projects Agency (DARPA) seeking designs for a tactical fly-drive vehicle known as the Transformer (TX). The AVX TX is a four (4) person flyable/roadable vehicle that is capable of being manually driven on the ground like an SUV, and rapidly reconfigured between ground and flight configuration to a Vertical Takeoff and Landing (VTOL) flyable aircraft with first of its class medivac, re-supply, manned and unmanned capabilities.

Fact or fable: hunt is on for buried Spitfires

Ted Strugnell *The Australian* January 28, 2011.

IT'S the Lasseter's Reef of warbirds -- a rumoured stash of mint-condition Spitfires hidden underground in rural Queensland.

Many have searched for the legendary British fighters, reportedly still in their crates and hidden since the end of the World War II around the Queensland town of Oakey, but so far nobody has been able to lay claim to what would be a multi-million-dollar find. They are the remnants of 656 Mark V and Mark VIII Spitfires that were delivered to the RAAF during the war. RAAF records show that 544 aircraft - 232 of them Spitfires - were flown to Oakey to be sold to a scrap metal dealer. That should have been the ignominious end of arguably the greatest single-place fighter ever built, certainly the most legendary and romanticised. But was it?

Opinions vary on the mystery and stories range from a high-level defence conspiracy among RAAF officers to a single leading aircraftman who hid or buried aircraft because he couldn't bear to see the magnificent machines destroyed. If hidden aircraft do exist, there are three main possibilities: they are buried; stored in a hidden underground hangar; or secreted in a coalmine.

Not everyone believes they are there. Toowoomba resident Laurie Wenham, who was employed in breaking down the aircraft prior to melting in 1948, is skeptical there are any planes. "I do not believe there are any hidden aircraft and various 'sightings' over the years were probably parts or partial aircraft pilfered or purchased as scrap," he said.

But a lifetime Oakey resident, who did not wish to be named, claims to be a reliable witness to the burial site of five aircraft in what may have been a trial disposal near the old Federal Mine. He did not see aircraft going into the ground, but he saw contractors digging a trench, and a large crate in it. The contractors claimed a quarter of a century later to have buried the aircraft but could not be contacted for this story.

However, this was enough to prompt Bungunya farmer and pilot David Mulckey to launch an excavation in 2001. This was the best search undertaken. It included aerial photographic surveys retrieved from the archives for the years before and after the alleged burial, which indicated substantial digging. Late access to the eyewitness and misreading of aerial surveys were blamed for the venture's failure. "As soon as I arrived I realised that we were in the paddock adjacent to, not on, the correct site," said Mr Mulckey, who did not have council approval to investigate the adjoining property. That property still contained evidence of digging and heavy lifting, even after 60 years, he said, and his aim was to return to at least eliminate this site as a possibility.

More recently, another ex-World War II airman has claimed that during an exchange of confidences during an Anzac Day in the 1950s another airman, and lifelong friend, told him he and others had hidden aircraft in a hole in the side of a hill near Oakey. The underground hangar story centres on reports of a squadron of 16 to 18 Spitfires, supposedly Mk XIVs in crates, hidden in underground storage, with spares and fuel, to be used in re-taking Queensland in the event of a Japanese invasion forcing a retreat to the infamous Brisbane Line.

Believers of this theory say the Mk XIVs never saw service with the RAAF because they were specially imported to be hidden. This version of the story appeared in the Royal Air Force News in the 1980s and British authorities thought it had sufficient substance to send an RAF group captain, wing commander and a technical NCO to Oakey to investigate.

A more likely possibility is that the underground hanger theory developed in the telling and retelling of rumours that a few aircraft had been buried, hidden or dumped in a disused coalmine. There were plenty of opportunities to do this, because there are numerous abandoned mines within minutes of the airfield. The number of aircraft and the persistence of the stories from disparate sources suggest it is likely that some aircraft remain.

Private pilot and vintage aircraft restorer Bill Martin, who has possibly done more research on this subject than anyone alive, believes some aircraft exist in some form somewhere in the area. Mr Martin has photographs of aircraft in the disposal lines at Oakey around 1945 that look like Mk XIVs, and has spoken to witnesses who had seen evidence that Mk XIVs may have been at Oakey, possibly on loan from the RAF for trials. The RAF had a squadron of Mk XIVs in Australia for the defence of Darwin and some of them could have been at Oakey for maintenance at war's end.

Other speculation includes the possibility that a small number of planes were fitted with classified equipment and could not be sold. A common way of disposing of aircraft was to dump them at sea, but what if one of the drivers used his initiative to deposit his loads in a mine to spend a couple of hours in the local pub rather than on the round trip to the Brisbane wharves?

Lester Reisinger, who has conducted a number of searches, subscribed to the underground storage theory. "They're there, all right, under the Oakey drive-in theatre," he said. An old mine, The Federal, passed under the now-disused drive-in and was the closest to the airfield. It closed in 1943 and two separate sources believed one driver was never away long enough to make the round trip to Brisbane. It would not have been too difficult for one man to transfer a crated Spitfire from a truck to an old mine wagon, using the hand-operated gantry for transferring coal from mine carts to railway wagons. Mr Martin and Mr Reisinger several times spoke to a man who swore he had been into an underground storage facility containing wooden crates on rail trolleys. However, the witness could not tell whether the crates held complete aircraft, parts, or something else. Both men believe the witness to be reliable, but because he was taken to the site at night by another man he was unable to pinpoint a location. However, it was only a short walk from the witness's house in Federal Street, near the mine of the same name. Mr Martin also had an aerial photograph taken in 1945 clearly showing the portal to the Federal Mine still open, with rails, shiny from possible recent use, going into the tunnel. The mine entrance was collapsed in the 1950s by the Jondaryan Shire Council, and the same aerial photograph clearly shows large crates sitting beside the nearby airfield. Australian Army Intelligence judged these to be the size of Spitfire crates, but they were not there by 1948. The Spitfire was the only aircraft disposed of at Oakey that was shipped in a single crate.

Ultimately, there are several possible motives, official and unofficial, for hiding aircraft. There were almost certainly numerous opportunities to do so. There are a lot of old stories and rumours, a lot of circumstantial, anecdotal and highly speculative evidence, as well as a little physical evidence.

The living witness located so far is testing a memory almost 60 years old. If the aircraft exist, sufficient resources and modern technology could locate them relatively cheaply and easily, or at least eliminate the most likely place - the old Federal Mine.

It is also possible the planes have already been spirited out of Australia. Recently, another witness claimed to have seen a shipment from Sydney of three aircraft removed from a hole near Oakey in the 1980s and sold for big money in Britain.

Either way, and like Lasseter's elusive reef of gold, it remains a riddle waiting to be solved.

Ted Strugnell lives in Toowoomba, Queensland, and served 31 years in the RAAF, in Australia and abroad, and a further 21 years with the Department of Defence. Anybody who took part, or who has knowledge of, these or similar events is urged to contact him on eastrug@icr.com.au



The Phantom Ray in the saddle atop a 747 for a test flight.

Phantom Ray hitches ride on 747

by Jonathan E. Skillings

The Phantom Ray UAV got some air time today, with a little help from a jumbo jet.

Boeing's futuristic unmanned aerial vehicle took a 50-minute flight today riding piggyback on a NASA Shuttle Carrier Aircraft, a modified 747 designed to ferry space shuttles from one terrestrial site to another. The aerospace giant had said earlier in the year that the Phantom Ray was on track to make its first flight, but this may not be exactly what it had in mind.

The first flight of the Phantom Ray, which is designed to fly autonomously, is now scheduled for "early 2011," Boeing said today. The flight test program is expected to last about six months.

Looking rather like a mosquito holding on for dear life to a generously proportioned model aircraft, the Phantom Ray rode the 747 out of Lambert International Airport in St. Louis in preparation for being transported to the Dryden Flight Research Center in California. Boeing's Phantom Works operation had been working on the UAV at the company's St. Louis facility.

This is the first time that an aircraft other than the space shuttle has flown on the SCA, according to Boeing.

At Dryden, the 36-foot-long Phantom Ray will undergo ground tests and high-speed taxi tests. It has already undergone low-speed taxi tests at Lambert field. "It communicated with the ground control station, received its orders and made its way down the runway multiple times, allowing us to assess its performance and monitor the advanced systems on board," Boeing said in a statement in mid-November.

Eventually the Phantom Ray could perform military missions ranging from surveillance and reconnaissance to strikes on enemy targets.

How to be competitive in Thermal Glider with only TWO channels

Lecture and talk by Mal Pring - The Southern Soaring League - Southern Soaring Park, 6/8/00

There must be many people wondering why I have stuck to two channel models in competition, when the use of spoilers would certainly help with precision landings. My reason is simple. The addition of spoilers or airbrakes disrupt the airflow over what is a perfectly good airfoil section! The other reason is simplicity and ease of construction!

Two Channel Thermal Soarers

Size of model: The size of model you choose is a personal preference. As Leo, "The Godfather", once said to me in about 1968 or so, in a casual conversation while we were chatting during a flying session flying, "a good big 'un will always beat a good little 'un." I was flying a very competitive two metre model, and he was flying a three metre model. This statement is very true.

Another statement made that day was, "I'm coming down from that altitude. Anyone can stay up in big lift. Keeping up down low is more important." Since the advent of hand launched gliders, this statement rings even truer. If you wish to improve your thermalling skills, build a simple H/L and see how long it takes to get away in your first thermal! See how big the thermals are at less than 10 metres.

The larger the model is, the harder it is to manoeuvre during landings as the wing tips hit the ground during sharp turns, so the approach is more important. During descents from altitude, the model must be strong enough to withstand a very steep dive. Mine reach a terminal velocity (not velocity never to be exceeded) in a dive with certain trim positions on the Tx. (see later) I settled on about 2.5 metres long ago as a best compromise, having flown many models from 1.5 to 3.5 metres (the Skyliner series).

Why not aileron/elevator? This is available as an option for two channels, but 'old timer' contests usually prohibit the use of ailerons anyway. Again the airflow over the wing is interrupted by the gap in the control surfaces. This configuration is usually only used on the slope, or for sports models.

Fuselage construction: Sheet balsa has been the favoured method for many years, but when the models are treated harshly during landings, going for the 'hit the spot' routine, the balsa fuselage tends to break easily, so some form of strengthening is required, usually by the use of doublers made of balsa or plywood. My fuselages have been constructed with complete balsa/ply sides since about 1970, allowing not only for greater strength, but to allow the fuselage to be narrowed down at the rear, where weight must be kept to a minimum. I also use triangular strip in the corners to allow the fuselage to be rounded off considerably at the rear. I follow this with a doped silk covering, filled and painted to suit. I recommend even nylon stocking as a substitute for silk if expense is a problem!

Fibre glass, carbon fibre and kevlar reinforced fuselages are common today, and allow for greater streamlining, but at a greater cost. They also sometimes break just as easily on a heavy arrival!

Wing construction: The most simple of wing construction is the foam core covered by either balsa sheet or some form of hardwood veneer (obechi is probably the most common). The biggest problems with this type of construction is getting enough strength into the wing joiner area to prevent folding of the wings on tow, or during a sharp pullout. Also, trying to keep the wing stable in wing section shape is also a big problem, especially when the model is left out in the sun! (Skyliner 15, an F3B model I once had, slowly lost it's thermalling ability, while travelling faster in the speed run. Upon inspection later, the dope had shrunk, and 'shortened' the upper skin to alter the camber of the airfoil. It was to be my last foam wing!)

Built up wings are the most popular type in R/E gliders. With the use of spruce or ramin hardwood spars, suitably webbed with vertical grained balsa - 3mm near the centre and 1.6mm outer - and with liberal use of epoxy near the wing joiner area. This method provides a good strength/weight ratio. Sheet cover the entire front of the wing to form a 'D' box structure. Use PVA glue on all the wing spar joints, including the webbing between the spars. The size of wing joiner is a personal choice. These joiners must go into the wing at least 150mm, preferably up to 200mm to prevent failure during launch. The diameter is up to the individual, depending on the span of the model, but should be at least 8mm. The joiners in the Nomad are a little too small in diameter, but allow plenty of flex during launch! 'Tis better to bend with the breeze, than be rigid and fail!

Dope the entire bare structure liberally to ensure all joints are well bonded before covering. Make sure the wings are held down for at least 24 hours after this as any warps creeping in here are probably permanent. After a light sanding, I cover the entire open part of the wing surface with lightweight tissue, coloured or white, depending on colour of the silk used as a final covering. Give this a coat of thinned dope to tighten it before covering with silk all over the wing. Add as many coats of thinned dope as to your preference. Of course, you can also use any of the readily available plastic shrink films for the covering, but I would strongly recommend the doping of the structure

as previously described even when using films, as it adds a tremendous amount of strength to the structure. High Tech wings are usually made using a foam core skinned with veneer and covered in epoxy resin impregnated fibreglass/carbon fibre/ kevlar skins, with the whole wing put in a vacuum bag with a polythene film outer layer to ensure a smooth surface on the finished wing. This method is a specialist job, as carbon fibre spars and servo leads and servo cut outs have to be allowed for during construction. If you intend to go this way, seek instruction from one of the your club's experts in this area. This method of construction results in a virtually indestructible wing for use with 'slingshot' launches. It is also the method used for the construction of aerobatic and racing slope machines.

Wing attachment: Most of the two channel thermal soarers wings are attached to the fuselage by the following methods:

Two wooden dowels front and rear of the wing position protruding through the fuselage to which the wing is attached by 4 to 6 rubber bands, usually No. 64 size. This allows the wing to fly off in the event of a sharp arrival into the ground, thus saving it, but is aesthetically not very good looking.

Steel dowels protruding from the fuselage allows for a wing to be slipped onto the fuselage, but has the disadvantage of also sticking through various parts of the model during transport! (Unless of course, they can be removed). Another method, which is more rigid, is the locating pin or dowel at the front (or rear) of the wing going into a hole in a former, with the wing held by a steel or nylon bolts at the opposite end of the wing. This method offers little crash resistance. If you use this method, do not trust nylon bolts. Inspect them regularly for signs of stress or cracking, or use steel ones.

Tail plane: Conventional tailplanes should be of sufficient area to allow good control of the model. Too small a tailplane will be worse than a one that is too large. A larger one only creates more drag, but also gives more stability to the model. About 15% to 18% of the wing area is about right. (see later notes on wing section choice). I once did some tests on Skyliner 10 by reducing the tail span with a knife, and got as low as 5%, but nearly wrote the model off! (see later notes).

T Tails keep the tail out of the grass on landing and out of the wing vortices, but are prone to failure during a sharp arrival due to the moment arm or leverage on the rear fuselage. With this configuration, the tail area can usually be reduced slightly due to the tail being in clean air.

V Tails are best left to high speed F3B machines. Although they work well, they are more sluggish in control than a conventional setup. They are also prone to being snapped on hard landings, especially the joiner, and especially if it is made of carbon fibre! This layout also subjects the model to a rolling moment opposite to the turn, as the elevons act as ailerons! The best way to overcome this trait is to 'invert' the V Tail, but this makes it more susceptible to damage as it is now on the bottom.

Tailplanes, whatever their configuration, should be kept as light as possible consistent with sufficient strength, as too much weight in the tail end means much more nose weight in the front! Tailplane to elevator ratio should be about 4:1 in area.

All moving tailplanes are a compromise between practicality and ease of transport. They allow the designer/builder to be a little lax on angles of incidence for that initial flight. Once set up, they work well. Notice that most of the moulded models have a separate tail and elevator! I wonder why? High speed stalling with a symmetrical section could be the problem. A conventional tailplane is more effective on any model.

Fin type: The trend many years ago was to 'balance' the rudder part of the fin, with a piece of rudder made rigid. This trait led to worse control than before, as at high angles of attack, the fixed part of the fin tended to stall, defeating the purpose of the idea. I have had models with, and without this balanced part, and the normal fin has proved to be more effective. Again, the fin and rudder must be kept as light as possible consistent with strength. A good size for the fin is 'if it looks about right, it is OK!' Too small a fin will cause lack of directional stability, while too big a fin will lead to the model tending to spiral in when put into a slow thermal turn.

Wing sections: Choice of wing section is up to you. Some 'flat bottom' sections work extremely well, as do those drawn around a shoe. But the best performing and more controllable sections are the tried and proven ones used by the contest fraternity. If you want good penetration back into the wind, a low camber section such as an RG15, or HQ1.5,9 are required. If you want the model to fly slowly, then pick a highly cambered section such as NACA 6409, but do not expect it to go fast! There are many sections around that have become firm favourites. Like the E193 and E205, but I prefer SD7037 for the best all round performance. But do not try to fly it too slowly! It will fly like a lame duck. Keep it moving and it's magic.

I actually have two wings for the NOMAD, one of the 'shoe box' variety for calm conditions, the other a SD7037 for windy conditions. If you wish to view different sections, and compare them, get a copy of COMPUFOIL from Eric Sanders in the USA. It is by far the best of all the airfoil plotting programs. You can change the camber, or the

thickness of the section. You can map out a wing with one section at the tip, and another at the root. You can plot a tapered set of ribs, complete with spars and sheeting. You can plot a set of templates for foam cutting as well. It's magic. You can download a test drive at compufoil.com. It will allow you to play, but unless you buy the software, (about A\$170), you will not be able to save or print any copy.

Control movements: When setting up the model, do not have too much elevator movement. This can easily lead to over controlling in pitch. About 15° up and 25° down are plenty. Why more down than up? Easy, when pulling out of a dive, your airspeed is already high. When curing a stall, your airspeed is low. But DO have as much rudder movement as you can get up to a maximum of about 45°. Use as fast a servo as you can afford on the elevator, and the same on the rudder if possible, but the elevator is the one you need to correct as quickly as possible.

Control torque rods and particularly snakes must be rigidly supported at least every 100mm to prevent whipping and bending of the snakes under tension in flight, with loss of effective control the result. Or even worse, lack of control at all! If you have a computer radio, setting up the throws is a breeze. I usually have two rates on elevator, high for launch to be able to level out after the ping, followed by lower rates for the rest of the flight. As for exponential, I very rarely use it, except for rudder on a full house model, simply so that my elevator movements do not interfere with the rudder!

Centre of gravity: This is again up to the individual. You may hear the F3B boys telling you to test it by putting it into a dive, and then releasing elevator to see if it stays 'neutrally stable'. This is OK if you want to do speed runs, and you have a low camber airfoil. It will not work with a thermal soarer, which usually has a more highly cambered airfoil. My rule is simply this. Fly the model, slowly using lead taped to the tail or nose of the model to alter the CG. You will reach a point at the rearward end of the scale where the model is unstable (almost uncontrollable) in pitch. Then, bring the CG forward until YOU are comfortable flying the model. After all, you will be the one flying it all or most of the time. I have a great dislike of models that require up elevator to be held while thermalling. If I take my eyes off my model for a few moments, I know it will still be flying about level, maybe stalling a little, but still in a safe attitude, and not diving or spiralling into mother earth at a high rate of descent.

Tow Hook Position: This must be set AFTER the CG has been optimised. Start with an adjustable tow hook. I use a hardwood block inside the fuselage, with a 'L hook' screwed into it from the outside of the fuselage. The 'L hook' can be purchased at any hardware shop. It is similar to a cup hook only shaped like an 'L'. I alter the size of the 'L' by bending with pliers to suit my tow ring on the winch line. (They are only made of brass!)

Start with a setting about 30° in front of the CG. Launch on the winch or bungee. If the model requires a lot of up elevator to climb, then it is too far forward. At this point the model may weave back and forth on the line. Move the hook backwards in about 5mm increments until a steep consistent launch is obtained without the model mushing, or wanting to turn off sideways on the line. Too far back and the model will veer sideways and not want to straighten up without your control input.

When it is in the right position, the model should climb to the top of the line with minimal correction from the pilot in either pitch (elevator) or yaw (rudder). Resist the temptation to apply any more than a dash of up elevator during the launch phase. When in a re-launch situation in a contest, certainly do not apply any up elevator during the launch, as it will only tend to slow the model down. After all, the purpose of the re-launch was to get a better air time. This is not obtained on the line! Also resist the temptation to apply any up elevator on the launch that is going 'downwind'!

The same rules apply to bungee launching as well, only make sure you have enough tension on the bungee before you launch the model. It is best to launch the model straight ahead whether on the winch or bungee, so that it has flying speed as it leaves your hand. If it looks like stalling, apply a liberal amount of down elevator for a fraction of a second to get your airspeed up, then fly normally.

Use of Trims during the flight: Most people do not touch their trims during the whole flight. Why not, I ask? My models are set up with the trim levers in the centre (neutral) for launch. When I am off the line, I immediately switch elevator to low rates after levelling out. The reason for this is that you do not need a great amount of elevator movement during the thermalling phase, and over use of elevator during landing is to be avoided. When I find a thermal, and start to turn, I feed in a little up elevator trim, enough to make the model climb at maximum rate with out much interference from me. I concentrate on using rudder to keep the model in a consistent turn, using elevator to correct only the wildest stall. As the model turns into wind, apply rudder to 'peel off' into the turn. If the model dives going downwind, only use a blip of elevator to bring the nose back up. (Martin Simons will disagree with me here, but I fully agree with his theories when the model is flying in undisturbed air, but how often do we get that?)

When I start the descent phase, my trims immediately go towards down. My models are set up such that on full down trim, the model is in a 30° dive all by itself, so all I have to do during the landing phase is to work the up side

of the elevator stick. This allows for a hot approach with excess airspeed, allowing me to touch in early and skid to the spot, using full rudder and full down elevator if it's over shooting, to cause a ground loop to stay near the spot. I usually try to be about 10 metres up, heading upwind past my right side at 30 seconds to go, allowing me that 30 seconds to turn downwind and turn in on to the spot at about the right time. If a breeze springs up, I have the excess airspeed to deal with it.

During the descent phase while the model is coming towards you, I teach beginners to forget which is left or right, but concentrate on the model. If it turns to your right, apply right rudder. If it turns to your left, apply left rudder. But only as much as you need! Using this technique, combined with the down elevator trim, a smooth and consistent descent can easily be obtained. If you are in a boomer thermal, and are not sure of the strength of your model, a spin down is probably the best option, but before you do this, try flying with a little down trim, in a straight line either sideways or toward yourself. This will get you out of the thermal that is causing you the distress. If this does not work, then try the spin. Slowly feed in up elevator until the model stalls, then apply full up elevator and full rudder (either way) and hold these settings. If your Tx is beeping low battery warning, start the spin, and get someone to turn off your Tx. Most radio's will retain the settings until you turn on again. Try this at a visible altitude first to see what happens. But you did charge last night, didn't you? The main reason for inducing the spin is to put less stress on the model. A model once stalled, with up elevator held, will not gain airspeed because it is constantly turning at low speed. The second reason is simple. It is better to have to search for a pile of wreckage, than have no wreckage to look for! You did write your name, address and telephone number on the inside of your fuselage, together with a reward notice, didn't you?

Tailpieces: I mentioned about tailplane area previously, but did not elaborate too much. The general rule is that if you are using a low camber airfoil, less tail area is needed. If you are using a high camber airfoil, then a larger tail is needed to counteract centre of pressure change in the airfoil. I have seen highly cambered airfoil equipped models tuck under due to the tail area being too small and unable to counteract the force generated by the wing. The best example of this was a version of Dick Edmond's 'Wildflecken' glider (an English kit) of around 3.6 metres going straight in at South Park in the 60's. Suddenly, some soul in the same predicament, had the courage to apply full down elevator, and the model bunted under, and then went on flying as if nothing had happened! A larger tailplane cured this fault in the design. We all learnt a lesson that day. Another scenario is when your model is in big sink. I find the hardest thing to do is apply down elevator to get the model to hell out of there, and into at least neutral air. It will come down faster, but you have a better chance of flying into better air. Do not circle in sink! Did you also know that the wind flows around a thermal? When in a good thermal, you do not disappear downwind at the same speed as the wind speed!

May the thermal gods be kind to you! (and don't forget your *RED HAT!*) Mal Pring 6/8/00. SSL, Adelaide.



F111 - Last Flight 10 December, 2010.

