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# Recreating the Great War

ed the element of surprise.  
the sun and attack allied

**With Avalon Airshow commemorating the centenary of the Great War, MARK SMITH meets a dedicated enthusiast intent on keeping the spirit of World War I aviation alive.**

The drums of war beat loudly in 1914 as Europe was plunged from the realm of reason into the abyss of insanity.

While land armies mobilised to wreak havoc upon each other across muddy fields in France, a new technology was emerging. Eleven years earlier the Wright brothers had proved powered flight was possible and, despite initial antipathy from high command on both sides of the conflict towards its use, the aeroplane would eventually become a major weapon in the four years of war.

One hundred years is a long time for a simple wooden and fabric aircraft to survive after the fighting ended in 1918, which is why there are so few genuine World War I aircraft in museums across

the world. There is barely a handful still flying. Of the 55,000 aircraft built for the Royal Flying Corp during WWI, around 20 remain in airworthy condition. These are genuine treasures that are flown sparingly.

Andrew Carter is an aviation enthusiast with a deep fascination for aircraft from this period. In 2012, with co-founders Nathalie Gochel and close friend Peter Hewler, he formed The Australian Vintage Aviation Society (TAVAS) with the idea of building and flying accurate reproductions of aircraft from the first 25 years of flight.

"TAVAS has the aim of bringing to life the first 25 years of aviation with an emphasis on WWI aircraft. We have one pre-WWI replica which is a monoplane that was built by the Johnson brothers of

outboard motor fame in 1909, four Great War aircraft, and the Pietyol Aircamper that is a 1928 design," he said.

In a hangar at Queensland's Caboolture airport, a team of volunteers work away bringing a reproduction Eindhoven E.III fighter to life. One wing is covered with the same grade of linen used in 1915, made by the same factory that wove aircraft covering for this type 100 years ago.

Dave Lothead has travelled from Otago in New Zealand to supervise the covering process. He walks slowly around the wing spraying water on to the linen and watching it tighten. It's an age-old technique that is familiar to many aero modelers, but not used on full-size aircraft covering for decades.

"It's definitely a different process to modern coverings where you simply use an iron to shrink it," he said.

"Here we will use six coats of aircraft

dope after the water to tighten everything up. We then have to stitch the covering to the ribs."

The other wing is in the final stages of preparation for covering with cloth tape being applied to ribs. The craftsmanship harks from days long gone when trained woodworkers formed the backbone of the aircraft construction industry. The uncovered wing is a piece of art that seems too beautiful to hide under covering. But if the Eindhoven is to fulfil its destiny of bringing WWI aviation back to life, such work must be hidden so pilots and the public can experience the sensation of seeing and hearing such an accurate reproduction take to the sky.

On a wooden shelf sits accurate replicas of WWI era flight instruments that indicate this is not your average aeroplane building operation.

Andrew's imposing Fokker Triplane,

the likes of which struck fear in to Allied pilots during the war, stands in the centre of the hangar.

"I started building plastic model kits when I was a kid, and a popular one at the time was the Red Baron's Fokker Triplane. I guess that's partially where my fascination with WWI aeroplanes started," he said.

"Von Richthofen often used the element of surprise. He'd swoop down out of the sun and attack allied pilots at close range."

"When I started TAVAS, I knew I needed an instantly recognisable WWI aircraft, but it had to have a strong Australian connection. Everyone seems to be aware of the Red Baron, be they a pilot or not, so the answer was obvious - we had to have the Red Baron's Fokker Triplane."

Andrew picked up the triplane in Florida. It had been built by two engineers and used for purely commercial operations.



Andrew Foster Fokker triplane

so it had low time. While the wings and fuselage are authentic, it's covered in modern carbon fabric, is powered by a Lycoming O-320 engine and has a tail wheel and brakes. The original plans were to return the aeroplane to its WWI specifications but other priorities have put that project on hold.

"We were told at the time I bought it, that it was ready to fly," Andrew said. "The owner said it was in such great condition he'd let his wife and children fly it. When it arrived we could only conclude he mustn't have liked his wife and children!"

With the help of engineer Dave Walsh it took more than a year to make the rectifications needed to operate the aeroplane safely. The defective pilot's seat and rudder bar were repaired, the control cables were replaced and some major internal parts required removal and sandblasting.

"It was a big job to get it back in the air, but now it's the only triplane flying in Australia," he said. The RAAF Museum had one but it was retired from flight in 1999.

Andrew had a brief encounter with that

RAAF triplane many years earlier.

"When I was flying up and down Melbourne's western flight aircraft lane in the early 1990s the RAAF Museum triplane took off out of Point Cook and cut across the lane on its way to Essendon."

"I remember looking at whoever was flying that aeroplane in an open cockpit in the middle of winter and thinking you poor bastard, I'd never want to do that. How times change!"

Andrew's journey into aviation is common to many. His father was a TAA pilot, so flying was in his blood. He learned to fly at Melton Airfield, near Melbourne, in the early 1990s and had several interesting GA flying jobs before ending up in the airlines. The first company he worked for, flying a B737, collapsed. Eventually Andrew ended up working at the Ansett group.

"Six months after I started, they too collapsed. So I decided to start my own import and wholesale business," he said. This proved tremendously successful, allowing him to retire at the age of 37.

"After I retired I bought the Pietenpol Aircamper. I'd had a fascination with

Bernard Pietenpol and his designs from the age of 12. I think both the man and his aeroplane are incredible. Buying my own Aircamper rekindled my love of vintage aviation."

Flying the Aircamper from Rockhampton to its new home in Sydney allowed Andrew to get to know his new aircraft.

"It took only two hours to fly to Rocky on an airliner, but 11 hours to fly it back! However it was a magnificent 11 hours," he said. The compact aeroplane attracted a lot of attention wherever Andrew took it, with people surprised at what it was built from.

"I found I spent a lot of time educating people about Pietenpol and I'd explain that it's a wooden-built aircraft covered in fabric and they'd look like they understood what I was saying. Then they would touch the fabric and couldn't believe it wasn't solid. I'd say 'I just told you it's wood and fabric' and they just couldn't comprehend it."

"That's when I knew a new type of museum was needed in Australia - an interactive flying museum that literally brought aviation history to life. One where

people could touch the aircraft, learn how they were constructed, then hear them run and watch them perform. At the time however, I just didn't know how to make that happen".

That changed in 2011 when Andrew visited Omaka and their unique Aviation Heritage Centre. During the airshow there he saw 14 WWI aircraft from The Vintage Aviator in the air at once. This ignited his interest in creating something similar.

"At the time I remember wondering why we didn't have something like this in Australia. Why had no other museum or organisation done it?"

He joined a regional airline in Queensland because he wanted to move to Brisbane, and needed more money coming in to start a flying museum.

"I rang my partner Nathalie when I was on an overnight and feeling a bit disillusioned with the airline," he said.

"She asked what I'd rather be doing and I told her I'd rather be creating something like they are doing in Omaka."

"To her credit she got in touch with Omaka Aviation Heritage Centre CEO Jane Orphan, who, with her husband Graeme

(editor of Classic Wings Magazine), put us in touch with a few people at Cabooturn who were of the same mindset. That's how we got started."

While sorting out the triplane, Andrew approached renowned German aircraft builder Achim Engels and secured, on long term loan, three unfinished projects that were 100% accurate. Achim had built a reputation worldwide for his lifelong obsession and dedication to studying and building Fokker reproductions.

The agreement will see TAVAS finish the aircraft and operate them until 2050, when they will return to Germany.

"We want to reproduce history so people can look at the aeroplanes and feel like they've gone back in time to the early 1900s. We want them to see and feel what the aircraft were actually like plus get an idea of what the men who flew them were up against."

The smell of dope wafting through the hangar signals the start of the next process on the wings, Nathalie and retired A-330 Captain Gordon Robinson apply the coating on to the linen to continue the process of shrinking and sealing the

fabric. After that dries, marks are applied across the ribs for the stitching to follow.

The Fokker D.VIII is another masterpiece of the builder's art, with lozenge patterned fabric again produced by the same factory that supplied aircraft manufacturers during WWI. The thick cantilevered wing is covered in thin plywood panels, nailed and glued like they would have been 100 years ago. All it needs is the original 150 HP Gnome rotary engine to be installed and it will be ready to take flight.

These are museum pieces, accurate in every detail, yet their display case will be the sky. The only part of the aircraft that won't work are the guns.

David Walsh stands next to the welded steel frame of the Eidekiew, bending brass tube for the fuel system. A retired aircraft engineer whose career stretches back decades, he came to TAVAS soon after Andrew brought the aircraft to Cabooturn.

"I've been around the airfield for years and actually built the hangar we're in. When Andrew arrived with the aeroplanes I thought, 'what a fantastic project' so became involved."

David says getting his hands dirty with



Andrew's entry into the Fokker D.VIII

**We want to reproduce history so people can look at the aeroplanes and feel like they've gone back in time to the early 1900s.**



Dave Cochran applies materials to the propeller in order to finish it.



the 1918 Gnome rotary has been especially exciting. "It's been a fantastic experience to go back to another era. The engine is fascinating, especially when you have remember everything was made by hand on lathes and milling machines. The people who did the work were truly extraordinary craftsmen. The tolerances are amazing."

"As we were opening it up we were giggling like kids opening Christmas presents. It was that amazing to see the engine was built."

Unlike a radial engine, where the crankshaft rotates and the cylinders are attached to the propeller and spin.

"The pilot controls the speed of a rotary engine by interrupting the spark and the designers were smart enough to know if you keep interrupting the spark on the same plug that plug will foul they interrupt the plugs in a sequence no plug gets fouled. They use a system today with racing cars - outboard motors electronically to prevent overspeed of an engine. They were doing the same thing mechanically 100 years ago," he said.

"I'm just blown away with that technology."

Some people see it as unusual that the organisation called The Australian Vintage Aviation Society should be operating German aircraft, but Andrew says it



Benjamin is working on the Enderbecker triplane.



Propeller maker Dieter Seidbauer works on the Enderbecker propeller.

just the way things have worked out initially and he is hoping to remedy that in the future.

"We are planning one day to have aircraft that were operated by Australians during the war."

"However, each aircraft in our collection has a strong Australian connection. The Enderbecker was used in Mesopotamia, which is now southern Iraq, against Australian troops and against Australian Pilots in 1915/16. So next year when Australians will commemorate the Gallipoli campaign, few people will realise that Australians were fighting the Germans and the Turks in other places - and in the air!"

The triplane also has an important connection with Australia as it was an Australian, Sgt Cedric Hopkins, who shot down the Red Baron. Australian soldiers got to the crash site first and later buried him with full military honours.

Such commitment to a dream is not cheap and Andrew has put everything he has into the project. His aim is to grow the collection by building Allied aircraft to complement the German ones he has. He hopes to attract sponsorship from people who can see the value in a museum to promote this era of flying history that has been neglected in Australia.

"It's chewed up hundreds of thousands of dollars and it's going to chew up a lot

more. I'm certainly no longer retired. It's sucked up everything I had left to live on," he said.

"Even if people just join TAVAS via our website it will help us move forward."

Planning to operate aircraft designed so long ago has presented Andrew and his team with many challenges, not the least of which is complying with modern regulations regarding instrumentation.

"CASA regulations have to be met and the only time we do deviate from authenticity is for safety and compliance," he said.

CASA's mandatory minimum equipment list for day VFR operations includes a calibrated airspeed indicator. Plumbing a pitot line into the Enderbecker wing was easy since the structure was open when the aircraft arrived. But the D VII, with its sealed plywood wing, is proving a challenge.

"We are looking at several alternatives for fitting a pitot line that will hopefully avoid having to remove any panels off the wing. We are going to have to hide the ASI in the cockpit, so we are using the smallest one possible. In the Enderbecker we are hiding the instruments in the ammunition box so on the ground, with the access door closed, you won't be able to see them."

The Australian Vintage Aviation Society will have its public debut at the

2015 Australian International Airshow at Avalon where three of their aircraft will join with other WWI-era aircraft including a Victorian-based Sopwith Pup, a newly completed Sopwith Snipe replica and 10 aircraft from The Vintage Aviator in New Zealand to commemorate WWI aviation.

It will be a once-in-a-lifetime chance for the public to see so many extremely rare aircraft flying together.

Andrew is excited about putting his aircraft before such a large crowd and hopes it goes a long way towards educating the public about the nature of WWI aviation.

"We see our involvement at Avalon as a unique way to demonstrate to the public just what aircraft of the time were really like - what the designers, builders and pilots of the time had and just how difficult their job was."

"By flying the first true fighter of all time, the E III, one of the very last fighters of the war, the D VIII, and the most recognisable aircraft of the war, the triplane, I hope to capture people's imagination, remind them what the aircraft of WWI were really like and show them just how incredibly far aviation has come in a short space of time." ■

Visit the Australian Vintage Aviation Society website: [www.oval.com.au](http://www.oval.com.au)