

Fuselage Restoration



Russell removing old material
as part of the reskinning process

The “Wednesday Warriors” have been chipping away at the outer skin and balsa to uncover the inner ply. Once cleaned up they are replacing the balsa, inserting horizontal stringers to add strength and scarfing the outer skin back into other completed sections.

The skin doctors: Peter Carne, Colin Hancock, Bruce Kean, David Uprichard and Russell Garraway (pictured) have completed the opposite side—which can be seen creeping over the top of the fuselage above Russell.

They have set up templates to help speed the process



along and are steaming the timber and moulding it to curve around the ever changing shape of the fuselage.

To keep the original shape of the fuselage, the Warriors have built many varying sized braces that are located internally keeping pressure on the inner ply to prevent distortion. The braces also provide something substantial to press against when gluing the balsa and ply.

The group have worked with timber during their working lives and the finished product is something to behold.

They are working at millimetre accuracy with timber cut and scarfed mainly at 90 degree and 45 degree angles. This has to take into account that the timber parts have to be slightly conical when moving from the narrower rear to a larger cross section half way down the fuselage.

Before getting to the current stage the group had to remove all the bulkheads, rebuild sections that had rotted. All this preparatory work ensured the fuselage would be the straight and true, to ensure it can stand the tests on time for decades to come, without having to go through another restoration.

Thanks guys for the excellent work you are doing.

The President's Log



One of our Sydney members, Athol Holtham with wife Liz visited Point Cook last week. Both ex-RAAF members, Athol worked on A52-600 at RAAF Richmond near the start of its restoration. David Jones, Technical Curator and several volunteers were on hand to show them what's happening. Their timing was pretty good, too; Peter Carne and the Wednesday Warriors were working on the fuselage re-skinning, and gave them a close-up view of the processes involved. Pat Dulhunty was there to represent the MAAA, and by all accounts had an enjoyable time of it.

Falling membership is a concern to us all. We will be trying a couple of different ways to attract new members, both involve advertising in different ways. We'll be trying to capture the interest of (particularly) younger people aiming for a 'hands on' approach to historic aircraft preservation. Any and all thoughts and ideas are welcome.

The realization that suddenly we **are** the older

generation is an additional burden to go with the profound loss of a loved one. On a brighter note, Bob and Jenny are heading off on a well-deserved holiday from the middle of this month, and a few of us are well into the planning stages for a visit to Coomalie Creek for the 70th. anniversary of VP Day commemoration service, fly-in and get-together. That's the day seventy years ago on 15 August 1945 that No. 87 Squadron RAAF PR Mark XVI Mosquito A52-609 was about an hour out on a PR mission to the north of Timor when the crew received the coded message that the surrender had been signed, please come home – which they did with a 400kt at 50 feet beat-up of the strip with the entire Squadron looking on and applauding. It's a good place to be about then.

Once again, thanks to one and all for your contributions.

Terry Burke, President

David Jones—Museum Curator explaining to Athol and Liz what has happened to A52-600 since she left Richmond, where Athol worked on her.



1 PRU – 87 (Photo Recce) Squadron Song

Have you heard the tale of the PRU with crews of great renown
Who photograph the bloody place from Java to Bankstown.
And Area can never find a target that's too tough
But when it comes to drinking beer, there never is enough.

Chorus

***When you're high in the sky and the flak's up your date
You grab for the throttles and you shove 'em through the gate
You don't give a damn if the recce is a farce
You tell the Chiefs at Area to shove it up their arse!***

Now Area Intelligence wants every bloody shot.
They send us further every time, each target is more hot.
While gulping down our oxygen, our eyes upon the dials
We're farting so frequently, we'll bloody soon have piles.

Our Mossies are the finest kites around the bloody place
Always on one engine, showing off their pace.
B-24s and Cats are also very fine
But we get there and back again in half the bloody time!

The spot where we live is a very funny place
With bugger all of everything excepting trees and space.
But though other bludgers say it's almost like a tomb
You'll always find the blighters here when the beer is in from Broome!

Herbie Gamble, our ex-CO, he's a patriotic bloke
When asked about our Mossies, these are the words he spoke:
"We'll piss upon the Poms", he said, in derision of this kite
"Of course I've only pranged the two, but I've yet to fly at night".

And now that you've heard our little tale of woe
You may wonder why it is that we love our Squadron so
But the fact is simply this: though we're bastards through and through
We're practically bullshit free here at Lloyd Law's PRU!

Chorus



Words and music

composer(s) un-

known. Performed on

many occasions at

Coomalie Creek,

1942 - 1945

***A POEM ABOUT GROWING
OLDER***

***I hope this poem has the
same effect on you as it
did on me - then my for-
warding it will be worth
the effort.
Walk with me by the
water ...***

... Oh, I forgot the words.

The Truculent Turtle

Hi , I know that this is not a Mossie story but thought that you could be interested. It was passed on to me, from an ex Navy chap, you will find it was interesting flight, as I have done.

Regards Ray Poulter.

Record Flight

An interesting story about a Navy P-2 that flew non-stop from Perth Australia to Columbus, Ohio in 1946 covering more than 11,000 miles in the record-breaking time of 55 hours and 17 minutes.



The oxidized Lockheed P2V-1 (the Truculent Turtle) had been squatting next to a Navy air station's main gate, completely exposed to the elements and getting ragged around the edges. Finally recognizing the Turtle's singular historic value to aviation, it was moved to Pensacola to receive a badly required and pristine restoration. It now has a place of honour inside the National Naval Aviation Museum.

Taxiing tests demonstrated that its Lockheed P2V-1's landing gear might fold while bearing the Turtle's extreme weight before carrying it airborne. And during taxi turns its landing gear struts could fail carrying such a load. For that reason, the Turtle was only partially filled with fuel before it was positioned at the head of Australia's Pearce Aerodrome runway 27 at 7 am on September 29th, 1946.

Lined up for take-off, all fuelling was completed by 4:00 pm. At the same time JATO packs were carefully attached to its fuselage for the jet-assistance required to shove the Truculent Turtle fast enough to take-off before going off the end of the runway.

Commanders Davies, Rankin, Reid and Tabeling

The take-off from Perth, on the west coast of Australia, was made at dusk local time. One reason given was the desire to begin at night to allow celestial navigation. However, as plane commander Cdr Thomas D. Davies admitted to the press before takeoff, a far more important consideration was minimization of the level of turbulence likely to be encountered. And at 6 pm the two 2,300 hp Wright R-3350 engines were warming up. We were about to take off from 6,000 feet of runway with a gross weight of 85,561 pounds [the standard P2V was gross weight limited at 65,000 pounds].

Sitting in the co-pilot's seat, I remember thinking about my wife, Virginia, and my three daughters and asking myself, 'What am I doing here in this situation?' I took a deep breath and wished for the best.

At 6:11 pm. Cdr Tom Davies stood hard on the brakes as both throttles were pushed forward to maximum power. At the far end of the mile-long runway, he could make out the throng of news reporters and photographers.

Scattered across the air base were hundreds of picnickers who came to witness the spectacle of a JATO take-off. They all stood up when they heard the sound of the engines being advanced to full power. Davies and Rankin scanned the engine instruments. Everything appeared normal. Davies eased his feet off the brakes.

On this day, September 29, 1946, the reciprocating engined Turtle was a veritable winged fuel tank -- thirteen tons beyond the two-engine Lockheed's maximum gross weight limitations.

The Truculent Turtle rumbled and bounced on tires that had been over-inflated to handle the heavy load. Slowly it began to pick up speed.

The Truculent Turtle

As each 1,000-foot sign flashed by, Rankin called out the speed and compared it to predicted figures on a clipboard in his lap.

With the second 1,000-foot sign astern, the Turtle was committed. Davies could no longer stop on the remaining runway. It was now fly or burn!

When the quivering airspeed needle touched 87 knots, Davies punched a button wired to his yoke, and the four JATO bottles fired from attachment points on the aft fuselage. The crew's ears filled with JATO bottles' roar, their bodies feeling the JATO's thrust. For a critical twelve seconds, the JATO provided the thrust of a third engine.

At about 4,500 feet down the runway, when the airspeed indicator reached 115 knots, Davies pulled the nose wheel off. There were some long seconds while the main landing gear continued to rumble over the last few yards of the runway. Then the rumbling stopped as the main landing gear lifted off the runway and the full load of the aircraft shifted to the wings.

As soon as they were certain that they were airborne, but still only an estimated five feet above the ground, Davies called, Gear up. Rankin moved the wheel-shaped actuator on the pedestal between the pilots to the up position, and the wheels came up. Davies lightly tapped the brakes to stop the wheels from spinning, and the wheel-well doors closed just as the JATO bottles burned out. Behind the pilots in the aft fuselage, Cdr Walt Reid kept his hand on the dump valve that would quickly lighten their load in an emergency. Roy Tabeling, at the radio position, kept all his switches off for now to prevent the slightest spark.

The Turtle had an estimated 20 feet of altitude and 130 knots of airspeed when the JATO bottles burned out. The JATO bottles were not just to give the Turtle additional speed on take-off, but were intended to improve the rate of climb immediately after lift-off. The Turtle barely cleared the trees a quarter of a mile from the end of the runway.

The field elevation of Pearce Aerodrome was about 500 feet, and the terrain to the west sloped gradually down to the Indian Ocean about six miles from the field. So, even without climbing, the Turtle was able to gain height above the trees in the critical minutes after take-off.

Fortunately, the emergency procedures for a failed engine had been well thought out, but were never needed. At their take-off weight, they estimated that they would be able to climb at a maximum of 400 feet per minute. If an engine failed and they put maximum power on the remaining engine, they estimated that they would be forced to descend at 200 feet per minute.

Their planning indicated that if they could achieve 1,000 feet before an engine failure they would have about four minutes in which to dump fuel to lighten the load and still be 200 feet in the air to attempt a landing.

With their built-in fuel dump system, they were confident that they were in good shape as any altitude above 1,000 feet because they could dump fuel fast enough to get down to a comfortable single-engine operating weight before losing too much altitude.



The Truculent Turtle

Departing the aerodrome boundary, the Turtle was over the waters of the Indian Ocean. With agonizing slowness, the altimeter and airspeed readings crept upward. Walt Reid jettisoned the empty JATO bottles. The Turtle was thought to have a 125 KT stall speed with the flaps up at that weight. When they established a sluggish climb rate, Gene Rankin started bringing the flaps up in careful small increments. At 165 KT, with the flaps fully retracted, Tom Davies made his first power reduction to the maximum continuous setting.

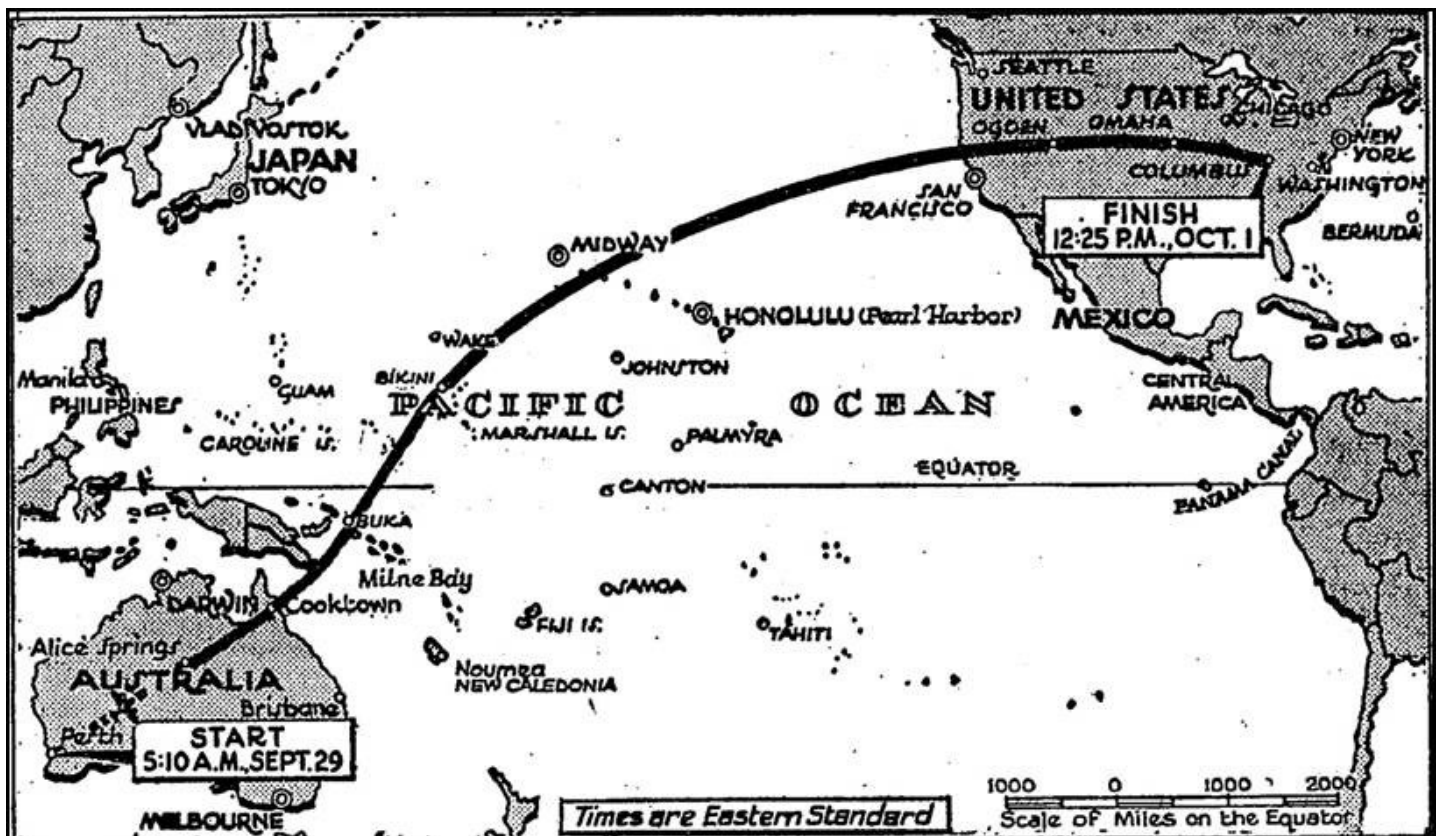
The sun was setting and the lights of Perth were winking as the Turtle circled back over the city at 3,500 feet and headed out across the 1,800 miles of the central desert of Australia. On this record-breaking flight, one record had already been broken. Never before had two engines carried so much weight into the air after the JATOS had quit.

Their plan was to maintain a fairly low 3,500 feet

Tom Davies applied full power and took her up to 6,500 feet where the atmospheric conditions were smoother, reluctantly accepting the sacrifice of enough fuel to fly an extra couple of hundred miles if lost, bad WX or other unexpected problems at flight's end.

Alice Springs at Australia's centre, slipped by under the Turtle's long wings at midnight and Cooktown on the northeast coast at dawn. Then it was out over the Coral Sea where, only a few years earlier, the USS Lexington and Yorktown had sunk the Japanese navy vessel Shoho to win the first carrier battle in history and prevented Australia and New Zealand from being cut off and then isolated, over Bougainville in the Solomons.

As the sun set for the second time since take-off, the Turtle's crew headed out across the vast and empty Pacific Ocean and began to establish a flight routine. They stood two-man four-hour



for the first few hundred miles, burning off some fuel, giving them a faster climb to cruise altitude and (hopefully) costing them less fuel for the total trip. But the southwest wind, burbling and eddying across the hills northeast of Perth, brought turbulence that shook and rattled the overloaded Turtle, threatening the integrity of the wings themselves.

watches, washing, shaving, and changing to clean clothes each morning. And eating regular meals cooked on a hot plate. Every two hours a fresh pilot would enter the cockpit to relieve whoever had been sitting watch the longest.

The two Wright 3350 engines ran smoothly; all the gauges indicated all was functioning normally.

The Truculent Turtle

Every hour another 200 miles of the Pacific was crossed. The crew's only worry was Joey the kangaroo, who hunched unhappily in her crate, refusing to eat or drink.

Dawn of the second morning found the Turtle over Maro Reef, halfway between Midway Island and Oahu in the long chain of Hawaiian Islands. The Turtle only had one low-frequency radio, because most of the modern radio equipment had been removed to reduce weight. Radio calls to Midway and Hawaii for weather updates were unsuccessful due to the vast distance.

Celestial navigation was showing that the Turtle was drifting southward from their intended great circle route due to increased northerly winds that were adding a headwind that would affect their speed and fuel consumption. Instead of correcting their course by turning more northward, thereby increasing the aircraft's relative wind, Cdr Davies stayed on their current heading, accepting the fact that they would reach the west coast of the U.S. somewhere in northern California rather than near Seattle as they had originally planned.

When Turtle's wing tip fuel tanks indicated empty, they were jettisoned over the ocean. Then the Turtle eased up to 10,000 feet and later to 12,000 feet.

At noon, Cdr Reid came up to the cockpit smiling. "Well," he reported, "the damned kangaroo has started to eat and drink again. I guess she thinks we're going to make it!"

In the fall of 1946, the increasingly hostile Soviet Union was pushing construction of a submarine force nearly ten times larger than Hitler's. Anti-submarine warfare was the Navy's responsibility, regardless of the U.S. Army Air Force's opposing views.

The Turtle was among the first of the P2V Neptune patrol planes designed to counter the sub threat. Tom Davies' orders came straight from



the offices of Secretary of the Navy, James V. Forrestal, and the Chief of Naval Operations, Fleet Admiral Chester W. Nimitz.

A dramatic demonstration was needed to prove beyond question that the new P2V patrol plane, its production at Lockheed representing a sizeable chunk of the Navy's skimpy peacetime budget, could do the job. With its efficient design that gave it four-engine capability on just two engines, the mission would show the Neptune's ability to cover the transoceanic distances necessary to perform its ASW mission and sea-surveillance functions.

At a time when new roles and missions were being developed to deliver nuclear weapons, it would not hurt to show that the Navy, too, had that capability.

So far the flight had gone pretty much according to plan. But now as the second full day in the air began to darken, the Pacific sky, gently clear and blue for so long, turned dark and hostile. An hour before landfall, great rolling knuckles of cloud appeared out from the coastal mountains. The Turtle bounced and vibrated. Ice formed on the wings. Static blanked out its radio transmissions and radio reception.

The crew strapped down hard, turned up the red instrument lights and took turns trying to tune the radio direction finder to a recognizable station. It was midnight before Roy Tabeing succeeded in making contact with the ground and requested

The Truculent Turtle

an instrument clearance eastward from California.

They were 150 miles off the coast when a delightful female voice reached up through the murkiness from Williams Radio, 70 miles south of Red Bluff, California. "I'm sorry," the voice said. "I don't seem to have a flight plan on you. What was your departure point?"

"Perth, Western Australia," came the reply from the Turtle.

"No, I mean where did you take off from?"

"Perth, Western Australia."

"Navy Zero Eight Two, you are not understanding me. I mean what was your departure airport for this leg of the flight?"

"Perth, Western Australia."

BUT that's halfway around the world!"

"No, only about a third. May we have that clearance, please?"

The Turtle had departed Perth some thirty-nine hours earlier and had been out of radio contact for the past twenty hours. That contact with Williams Radio called off a world-wide alert for ships and stations between Midway and the west coast to attempt contact with the Turtle on all frequencies.

With some difficulty due to reception, the Turtle finally received an instrument clearance to proceed on airways from Oakland to Sacramento and on to Salt Lake City at 13,000 feet.

The weather report was discouraging. It indicated heavy turbulence, thunderstorms, rain and icing conditions. As Gene Rankin wrote in a magazine article after the flight : "Had the Turtle been on the ground at an airport at that threatening point, the question might have arisen: Is this trip important enough to continue right through this stuff?"

The Turtle reached the west coast at 9:16 p.m. about thirty miles north of San Francisco. Their estimated time of arrival further north up the coast, had been 9:00 p.m. They had taken off about forty hours earlier and had covered 9,000 statute miles thus far.

They had broken the distance record by more than a thousand miles, and all of their remaining fuel was in their wing tanks which showed about eight-tenths full. Speculation among the pilots was about how much further the Turtle could fly before fuel tanks were empty. The Turtle's oxygen system had been removed for the flight, so the pilots were using portable walk-around oxygen bottles to avoid hypoxia at higher altitudes.

The static and atmospherics began demonstrating the weird and wonderful phenomenon of St. Elmo's fire, adding more distractions to the crew's problems. The two propellers whirled in rings of blue-white light. And violet tongues licked up between the windshields' laminations, while eerie purple spokes extended from the Neptune's nose cone.

All those distracting effects now increased in brilliance with an accompanying increase in static on all radio frequencies before suddenly discharging with a blinding flash and audible thump -- then once again slowly recreate itself.

The St. Elmo's fire had been annoying but not dangerous. But it can be a heart-thumping experience for those witnessing it for the first time. The tachometer for the starboard engine had been acting up, but there were no other engine problems. The pilots kept the fuel cross-feed levers, which connected both main tanks to both engines, in the off position so each was feeding from the tank in its own wing.

Somewhere over Nevada, the starboard engine began running rough and losing power. After scanning the gauges, the pilots surmised that the carburettor intake was icing up and choking itself. To correct that, the carburettor air preheating systems on both engines were increased to full heat to clear out any ice. Very quickly, the warm air solved the problem and the starboard engine ran smoothly again.

With an engine running rough, Cdr Davies had to be thinking about their mission. The Turtle had broken the existing record, but was that good enough? It was just a matter of time before the AAF would launch another B-29 to take the record up another notch. The Neptune was now light enough for single engine flight, but how much farther could it go on one

The Truculent Turtle

engine?

And was it worth risking this expensive aircraft for the sake of improving a long-distance record?

Over Nevada and Utah the weather became a serious factor. Freezing rain, snow and ice froze on the wings and fuselage, forcing the crew to increase power to stay airborne. The

their remaining fuel and cursed the gauges on which one-eighth of an inch represented 200 gallons.

At noon, they concluded they could not safely stretch the flight all the way to Washington, D.C., but certainly not to the island of Bermuda. Cdr Davies chose the Naval Air Station at Columbus, Ohio to be their final destination.



aircraft picked up a headwind and an estimated 1,000 pounds of ice. It was problematic because the plane's de-icing equipment had been removed as a weight-saving measure.

The next three hours of high-power settings and increased fuel usage at a lower altitude of 13,000 feet probably slashed 500 miles from the flight's record-breaking distance.

After passing Salt Lake City, the weather finally broke with the dawn of the Turtle's third day in the air. The plane was cleared to descend to 9,000 feet. All morning Cdr Davies tracked their progress eastward over Nebraska, Iowa, and the Missouri and Mississippi rivers. To the north Chicago's haze was in sight. But not surprisingly, the remaining fuel levels were gaining more attention from every member of the crew.

The wingtip tanks had long ago been emptied and jettisoned over the Pacific. The bomb bay tank, the nose tank and the huge aft-fuselage tank were entirely empty. The fuel gauges for both wing tanks were moving toward zero. Cdr Davies and his crew consulted, tapped each fuel gauge, calculated and recalculated

At quarter past one that afternoon the runways and hangars of the Columbus airport were in sight. The Turtle's crew were cleaned-up and shaven and in uniform. And the fuel gauges all read empty. With the landing checklist completed and wheels and flaps down, Cdr Davies cranked the Turtle around in a 45 degree left turn towards final approach. As the airplane leveled out on final approach, the starboard engine popped, sputtered and quit.

The port engine continued smoothly.

Down to 400 feet, as they completed their final turn, both pilots simultaneously recognized the problem. Their hands collided as both reached for the fuel cross feed fuel lever between their seats. During the landing pattern's descending final turn, the near-empty starboard tank quit feeding fuel into the starboard engine. Within seconds, the starboard engine began running smoothly again from fuel rushing in from the open cross feed. The Turtle had been in no danger, since they were light enough to operate on one engine. On the other hand, it would have been embarrassing to have an engine quit, in view of the growing crowd watching below.

At 1:28 p.m. on October 1 the Neptune's wheels touched solid ground once more with tires over-

The Truculent Turtle

inflated for take-off at Perth, after having flown a non-stop distance of 11,236 miles in the record-breaking time of 55 hours and 17 minutes. After a hastily called press conference in Columbus, the crew was flown to NAS air station in Washington, D.C. by a Marine Corps Reserve aircraft, where they were met by their wives and the Secretary of the Navy. The crew was grounded by a flight surgeon upon landing in Columbus..

But before the day was over the Turtle's crew had been awarded Distinguished Flying Crosses by Navy Secretary Forrestal. The next day they were scheduled to meet with an exuberant President Harry S. Truman.

And Joey the kangaroo was observably relieved to be back on solid earth. She was given luxurious quarters at the National Zoo.

The record established by Cdr Tom Davies and the crew of the Truculent Turtle's crew did not stand for a fluke year or two, but for decades when the long-distance record for all aircraft was broken by a jet-powered B-52 in 1962.

The Truculent Turtle's record for piston/propeller-driven aircraft was broken by Burt Rutan's Voyager, a carbon-fibre aircraft, which made its historic around the world non-stop flight in 1986, more than four decades after the Turtle had landed in Ohio.

After a well-earned publicity tour the Truculent Turtle was used by the Naval Air Test Center at Patuxent River as a flying test bed for advanced avionics systems. The Turtle was retired with honors in 1953 and put on display in Norfolk, Virginia, and later repositioned at the main gate of Naval Air Station Norfolk, Virginia, in 1968.

In 1977, the Truculent Turtle was transported to the National Naval Aviation Museum in Pensacola, Florida where it now holds a place of honor in Hangar Bay One.

TECHNICAL DATA (P2U-I)

Manufacturer: Lockheed
Type: Patrol and antisubmarine search
Crew: Two pilots plus six crewmen
Powerplant: Two 2300 hp Wright R-3350-8A
Dimensions: Span 100'; length 75'6"
Weight: 61,153 lbs gross
Speed: 302 mph maximum
Range: 2,050 miles tactical
Armament: Six 0.50-in guns, mines, depth bombs, torpedoes

Many thanks to the Naval Institute Proceedings magazine, Naval Aviation News magazine, the Naval Aviation Museum Foundation magazine, CDR Eugene P. Rankin, CDR Walter S. Reid and CDR Edward P. Stafford, whose articles about the Truculent Turtle were the basis for this article.



The Ubiquitous “Jerry Can”

The British called it the Jerry Can. The Germans called it the Wehrmacht Einheitskanister. Einheit translates literally as “unity”. But I think the correct translation to English would be “Army Standard Container”.
Cheers—Peter Lewis

During World War II the United States exported more tons of petroleum products than of all other war material combined. The mainstay of the enormous oil-and gasoline transportation network that fed the war was the oceangoing tanker, supplemented on land by pipelines, railroad tank cars, and trucks. But for combat vehicles on the move, another link was crucial—smaller containers that could be carried and poured by hand and moved around a battle zone by trucks.

Hitler knew this. He perceived early on that the weakest link in his plans for blitzkrieg using his panzer divisions was fuel supply. He ordered his staff to design a fuel container that would minimize gasoline losses under combat conditions. As a result the German army had thousands of jerrycans, as they came to be called, stored and ready when hostilities began in 1939.

The jerrycan had been developed under the strictest secrecy, and its unique features were many. It was flat-sided and rectangular in shape, consisting of two halves welded together as in a typical automobile gasoline tank. It had three handles, enabling one man to carry two cans and pass one to another man in bucket-brigade fashion. Its capacity was approximately five U.S. gallons; its weight filled, forty-five pounds. Thanks to an air chamber at the top, it would float on water if dropped overboard or from a plane. Its short spout was secured with a snap closure that could be propped open for pouring, making unnecessary any funnel or opener. A gasket made the mouth leak proof. An air-breathing tube from the spout to the air space kept the pouring smooth. And most important, the can's inside was lined with an impervious plastic material developed for the insides of steel beer barrels. This enabled the jerrycan to be used alternately for gasoline and water.

Early in the summer of 1939, this secret weapon began a roundabout odyssey into American hands. An American engineer named Paul Pleiss, finishing up a manufacturing job in Berlin, persuaded a German colleague to join him on a vacation trip overland to India. The two bought an automobile chassis and built a body for it. As they prepared to leave on their journey, they realized

that they had no provision for emergency water. The German engineer knew of and had access to thousands of jerrycans stored at Tempelhof Airport. He simply took three and mounted them on the underside of the car.

The two drove across eleven national borders without incident and were halfway across India when Field Marshal Goering sent a plane to take the German engineer back home. Before departing, the engineer compounded his treason by giving Pleiss complete specifications for the jerrycan's manufacture. Pleiss continued on alone to Calcutta. Then he put the car in storage and returned to Philadelphia.

Back in the United States, Pleiss told military officials about the container, but without a sample can he could stir no interest, even though the war was now well under way. The risk involved in having the cans removed from the car and shipped from Calcutta seemed too great, so he eventually had the complete vehicle sent to him, via Turkey and the Cape of Good Hope. It arrived in New York in the summer of 1940 with the three jerrycans intact. Pleiss immediately sent one of the cans to Washington. The War Department looked at it but unwisely decided that an updated version of their World War I container would be good enough. That was a cylindrical ten-gallon can with two screw closures. It required a wrench and a funnel for pouring.

That one jerrycan in the Army's possession was later sent to Camp Holabird, in Maryland. There it was poorly redesigned; the only features retained were the size, shape, and handles. The welded circumferential joint was replaced with rolled seams around the bottom and one side. Both a wrench and a funnel were required for its use. And it now had no lining. As any petroleum engineer knows, it is unsafe to store gasoline in a container with rolled seams. This ersatz can did not win wide acceptance.

The British first encountered the jerrycan during the German invasion of Norway, in 1940, and gave it its English name (the Germans were, of course, the “Jerries”). Later that year Pleiss was

(Continued on page 20)

From the Mailbox

As always thank you.....wonderful reading.

Regretfully, I have to inform you, that my good friend Peter Henley (W Cmd. Ex RAF Rtd. BAC Test Pilot) passed away on Monday 2nd March aged only 75, after heart problems.

All "Mossie" Enthusiasts, Veterans, will remember him for his wonderful displays of Mosquito RR299, prior to Kevin Moorhouse Pilot and Steven Watson, who was Peters Engineer as well.

Perhaps, this sad news can be related to all, in your next issue.

His Obituary can be seen and read on the Telegraph Newspaper web site?.

I have some wonderful pictures of Peter, both flying RR299 and with same, will send you some.

Kind Regards
David Coeshall

(Introduction—I am a de Havilland Mosquito Enthusiast, a current and active Member of the DHAHC Mosquito Museum UK, The Calgary Mosquito Society (my good friend Richard de Boer, President) and the Australian Mosquito Association, Point Cook, Australia.

Together with various and many Individuals and Restoration Groups and Museums around the world,

The Peoples Mosquito UK being but one—

www.thepeoplesmosquito

Involved in the Restoration of, to either Static and or to Flying Condition. Also maintaining the History of both the Aeroplane, Aircrew, Ground Crew and Designers and Construction Workers associated.

See:

www.dehavillandmuseum.co.uk
www.calgarymosquitosociety.com
www.aussiemossie.asn.au



Keep up the good work. It won't be long now, according to my Flying Log Book, June 6th 1945, (Oh my goodness! that is 70 years ago!!) was my last flight as a Path-Finder Pilot, in a Mk. 16 Mosquito for 2 hours 20 mins practicing low level bombing runs prior to flying from England to the "other war" away across the other side of the earth.

We had been doing lots of low level flying, some formation flying, but mostly practice low level bombing runs. I note that we flew, mainly Mk. 16 Mossies. 16 different flights total 25 hours from the end of the war to June 6th when it all stopped.

We were NOT going to the other side of the planet. "Parsons, you can go home!" They were the words of my C.O. I can remember my cheeky reply, "Sir, can I fly home in a Mossie?" His reply was a loud "No" !!

The article by Mac Skinner fascinated me, and prompted me to look at my War-time Log Book. My Navigator was F/Lt Dick Burgess DFC. We flew in No 139 Pathfinder Squadron. My rank at that time was a Flying Officer. I was trained in Australia, and in August 1942 was attached to the R.A.F. I did further training courses, and was made a Pilot Flying Instructor until near the end of 1944, when I converted to Wellington Heavy Bombers, then to Mosquitos, eventually arriving at Upwood where I managed to get my share of Operations over Germany.

I notice that Mac Skinner went to Berlin on 20/21 April for the last operation on the City. We were there the night before, 19/20 April, dropping marker flares as well as 3/500 H/E Bombs (ie. High Explosive).

The worst operational flight I still dream about was on April 10th 1945, when 14 of us flew reasonably low-level across the channel, across low parts of France to climb finally to 20,000 feet to each drop 8/250 lb. Incendiary Bombs on a town called "Chemnitz" in the south of Germany. We were not told why at the briefing, and had to wait 50 years to find out that it seemed the Germans were manufacturing the guidance systems for the Rockets they were sending to blow up on London.

I remember we climbed up a couple of thousand feet and circled the target to watch the enormous

From the Mailbox

fires that must have just about burnt the whole town.

My Log Book tells me I departed England on board "The Andes" on 29th June 1945, and arrived in Sydney, via the Panama Canal on 29th July 1945.

My Navigator is still going strong, living in the north of London, perhaps not as strong as he would wish, aged 94 and on my next birthday in September I will be 93, hopefully still driving, living on my own which I don't recommend to anyone.

Kind regards.
Tom Parsons



Dear MAAA,

It saddens me to let you know that Grant has passed away on 5 March 2015. We talked about his membership and I asked him if he wanted me to keep it going. He said, "Yes", if I wanted to. Well, I do want to continue this membership as it seems, even though Grant has left us, I continue to receive emails about his father's history in the mosquito. If you accept this proposal, would you mind if I send your link to interested people? If so, would you send me an Invoice with your bank details and I would be honoured to continue his membership.

Mary Burfield



For those of you who hanker for a little luxury.

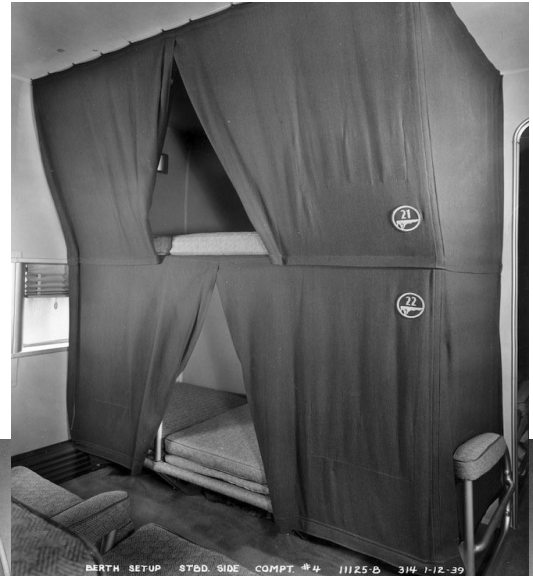
Get a load of the pictures below flying on the Boeing clipper circa 1940's !!

And then have a look at current day photos of Etihad airways A380 luxury residence suite at:

<http://www.smh.com.au/travel/travel-essentials/travel-news/better-than-first-class-etihad-a380-unveils-luxury-residence-suite-20140505-zr4ki.html>

Dream on !!!!

Cheers David Devenish



Excerpt from Keith Meggs Books

AUSTRALIAN-BUILT AIRCRAFT, and the INDUSTRY

**An encyclopedic, four-volume work on every aircraft type proposed, designed or manufactured in Australia from 1884 to the mid-1980s!
by Keith Meggs**

Aircraft enthusiasts, pilots, aero engineers, manufacturers, industrialists, universities, and other technical institutions, **Australian-Built Aircraft, and the Industry** is a 'must have' for your reference library.

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The volumes include, along with the text, the most comprehensive collection of photographs, technical drawings, and diagrams yet assembled into the one reference work.

Volume 1

In this volume, the author has turned his attention to all aspects of aviation from 1884 to 1939 via 14 chapters each packed with a wealth of detailed writing, photographs, and technical drawings never previously seen.

Volume 2:

Chapter 15 is devoted entirely to the history of The Commonwealth Aircraft Corporation, a company, which has played such a huge part in the Australian aviation industry

'CAC' as it was affectionately known by the thousands who worked there was formed in 1936 and was predominantly involved in trainer and fighter production, right through to part-production of the French designed Mirage in the 1980's.

It developed into the most experienced and productive aircraft design organisation in Australia, originating imaginative world-class design proposals in all categories, most of which foundered because of lack of orders from military and civil operators, or from Government developmental sources.

CAC was also the major engine production centre in Australia, beginning with the Single Row Wasp for the Wirraway, through to the General Electric-F404 for the Hornet.

The Commonwealth Aircraft Corporation was taken over by Hawker de Havilland on 1 July 1986

Volume 3:

Chapter 16 covers the Government-established facility set-up to manufacture the Bristol Beaufort for World War II and which went on to manufacture the Beaufighter and the Lincoln bomber.

The organisation underwent various title changes, including Department of Aircraft Production (DAP) and Government Aircraft Factory (GAF). The latter is probably best-known for its design and production of the twin-engined Nomad utility aircraft, sold world-wide.

On 1 July, 1987 GAF was removed from its public service umbrella and became AeroSpace Technologies Australia (ASTA), which in turn became a subsidiary of Boeing.

Chapter 17 concerns the second part of the Australian de Havilland story, starting with its production of the DH84 Dragon and continuing through the Mosquito to its postwar work on the Vampire and Drover, plus its own projects and proposals.

The latter included a Chipmunk look-alike, a Twin-Merlin transport, an original jet trainer, a four engined airliner, and Sea Venom production. Military helicopter work became a major part of company production and overhaul, plus engine and propeller overhaul at its Lidcome plant.

Volume 4:

Chapter 18 sees us at the outbreak of war, the Aeronautical Engineering Branch of the Department of Civil Aviation (DCA) prepared a number of preliminary designs for aircraft types needed desperately by the Royal Australian Air Force, but the requirement was met from imports.

The war also brought a rash of proposals from smaller firms anxious to participate in the obvious need for an expanded Air Force, and many had, or obtained alliances with English or American firms with the hope of a licence production arrangement.

However, none were acceptable to the RAAF and they were all stillborn, but nonetheless, the proposals, negotiations, and principles so involved, are covered in detail.

Chapter 19 looks at the Post-war period, there was a resurgence of interest in training and personal aircraft, and the work of eight companies so involved is covered, with their products including the Victa Air-tourer, the Yeoman Cropmaster, and the Transavia Airtruck.

Chapter 20 deals primarily with the postwar homebuilding movement and the formation of the Ultralight Aircraft Association, which became the Sport Aircraft Association of Australia. It is divided into four parts, covering the latter's aircraft types, the minimum-aircraft movement, individual aircraft projects, and rotary-wing projects.

Excerpt from Keith Meggs Books

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This excerpt was made available to the MAAA by member Keith Meggs. Our thanks to him.

Part of a 37 page section on the Australian built Mosquito, the rest of the section covers more about the build story, plus a comprehensive display of photos and drawing coverage.

Testing was then being done by Pat Fillingham, from the parent company in England, but over the early Australian Mosquito test program there was a series of pilots with three fatal accidents interfering with the program. They involved Boss-Walker, Ifould, and Crouch, the latter an RAAF pilot on an acceptance flight.

In-flight armament testing was begun with the second aircraft during December 1943, with the cannon and machine guns, and the installation proved to be satisfactory. A52-1 was then being used to engineer the required radio layout, but it was finally decided that it could not be so tied up, and a mock-up was built for the task.

The backsliding program caused concern to the RAAF, which was very concerned about being able to meet its forward-planning commitments. On 4 January 1944, Air Cdre E.C. Wackett stated that, unless DH could present a certain delivery schedule, the Air Force would be obliged to obtain US aircraft in the Mosquito class, and the company was required to prepare a statement on the delays, for presentation to War Cabinet.

Another serious problem common to the whole aircraft industry had become apparent on 10 January, with advice of the defective S11 nickel steel from which metal fittings had been made, followed 10 days later by further advice that S2 steel was also under suspicion. This required aircraft dis-assembly to remove the suspect fittings for radiological examination, further disrupting the normal production radiological program and delaying supply of approved fittings to the production line. It was also applicable to the dual-control aircraft, and was responsible for considerable delay in their processing.

By the end of February, the second aircraft was in pre-flight AID inspection, with all fittings replaced, number three was undergoing electrical and hydraulic-function tests, but suffered an accident during a retraction test, and the 13th aircraft was on the line. The first aircraft was delivered to the RAAF on 4 March, but the second was de-

layed because of the need to replace leaking tanks, and was not delivered until the end of the month, with the third late in April, and the fourth and fifth during May.

As one of the reasons for the program delays, all seemingly of great validity, Murray Jones described the radio situation as follows, on 3 May 1944:-

"Radio and wireless installation (sic) was not finalised until February last. This equipment is governed entirely by Service requirements, and it was not until 13th April that all items of Service supply (i.e. supplied by the RAAF for fitment by us) were available. Even today, we have not received sufficient of these items from the RAAF to fulfil our manufacturing needs.

Apart from the availability of Service supply items, we would like to point out that it was impossible to proceed with the tooling of the parts required for the fitment of the radio equipment until the installation was approved. The RAAF would accept aircraft less radio if the delay was caused by non-supply from the Air Force. This policy was changed in March last, however, and delay in delivery of aircraft occurred as a result."

He also pointed out the company's inexperience in the manufacture and assembly of such major items as hydraulics, electrical, and pneumatic installations, making production more difficult than anticipated. Every endeavour — up to the limit of the health of the senior executive officers was being made to make up the deficiency.

The training of unskilled labour had been tried, but experience had shown that, if continued, it would be too lengthy a process to enable adherence to the program, and it was emphasised again that quality labour was the requirement.

Both the electrical and the radio installation changes from UK practice demanded by the RAAF caused considerable delay. Whereas all UK Mosquitoes had an alternator on one engine and a DC generator on the other, the RAAF insisted on a DC generator, of twice the capacity of the British installation, on each engine, and hence no alternator. This meant that each individual item of radio equipment had to have its individual rotary converter to provide the AC power required. When all this gear was installed, it was found that severe interference occurred. It took DH engineers, led by Cec Fordham, several weeks to solve the interference and resulted in each unit being housed in a separate metal con-

Excerpt from Keith Meggs Books

tainer. The rearward view for both of the aircrew was severely diminished.

Instead of the replaceable fuses used on thousands of other Mosquitoes, the RAAF demanded thermal overload switches on the Australian aircraft — this led to much re-routing of wiring and procurement delays.

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Regarding the electrical installation work, John Mills recorded the following:-

'Cec Fordham, the backbone of prewar civil aircraft electrical work at Mascot, moved from his business to take over the complete electrical side of the Mosquito and it is probably this fact which is responsible for the complete absence of any electrical problems with the Mosquito. --- Our main sources of trouble were mechanical and hydraulic; the electrical side of production, watched over by Cec Fordham seemed to just flow on smoothly.'

Sometime during the early development period, there was a spell in which no test pilot was available, after Gibson-Lee's services had been dispensed with, and an urgent solution was required to a problem with high-altitude fuel vaporisation. John Kerr was endorsed by RAAF Gp Capt Brian Walker, and was authorised to test fly the Mosquito, accompanied by Merv Waghorn, who describes the occasion as follows:-

John Kerr did a little test flying on one aircraft, I think it was our first Mosquito. We were having trouble with fuel vaporisation, occurring only at heights above 20,000 ft. We were fresh out of T.P's at the time and a further test was urgent. I flew with John, (a) as the engineer in charge of Mosquito production and (b) because I was the only person on the Company who had any experience of using oxygen and oxygen masks etc. and John had none. It was a very brave act on John Kerr's part because he had never flown anything hotter than a DH89 before.

I think we flew from Mascot, not Bankstown, but cannot remember how or why. John was quite nervous and rightly so but flew the aircraft very well. We climbed to the West and at about 23,000 ft, just over the Blue Mountains, one engine started to cut out. Down went the nose followed by a quick 180° and back to Mascot. The engines were quite O.K. as soon as our altitude decreased a little. I cannot remember how the prob-

lem was overcome, but it was fixed and quite soon after.' (Kerr had flown the Stinson A and the Percival Q6 at least, with Airlines of Australia and DCA - ARM)

The urgent fitment of two-stage Merlins had been called for by the RAAF as early as February 1943. Planning showed that the earliest point at which this could be effected was subsequent to number 150, but by September the RAAF required early production of 40 photographic-reconnaissance Mosquitoes fitted with the two-stage engines and designated PR41, to RAAF Specification 5/43. As this was not possible without serious disruption to Mk40 production, it was decided to convert a number of the Mk40's to partly meet the requirement, and Project Engineer Steve Newbiggin left for Toronto on 10 September to study the Canadian fitment, to familiarise himself with the installation, and to obtain the necessary engineering data. He went on to Hatfield on 6 December, and arrived back at Bankstown on 2 March 1944, to begin the development work required.

To meet the PR requirement, the following changes were incorporated, and the appropriate redesign and modification was undertaken, using A52-2 as the prototype — the task was carried out in the RAAF area on the Marion St side of Bankstown aerodrome, as follows:-

- 1) The centre-section ribs were removed from between the spars, and were replaced with a single boxed rib on the centre line.
- 2) The two 25-gallon centre-section tanks were replaced by two with 68-gallons capacity each.
- 3) An additional 63-gallon tank was fitted into the cannon bay, ahead of a similar tank already carried in the bomb bay, after removal of all armament and the camera gun. (Total fuel capacity was then 865 gallons with two 100-gallon drop tanks. This compared with the PR40 figure of 528 gallons measured at APU, and which differed from the handbook figure of 516 gallons, because of manufacturing tolerances).
- 4) Camera holes were cut in the nose for two oblique cameras, and in the rear fuselage between bulkheads four and five, for an F52 vertical camera.
- 5) The original oxygen bottles were repositioned and two additional ones installed, making a total of four in a low-pressure system.

Excerpt from Keith Meggs Books

6) The bomb-door jacks and lines were removed.

7) A 10-gallon long-range oil tank was fitted as an interim measure until a 14-gallon one became available to meet the increased range demand when drop tanks were added. This tank was located under the navigator's floor.

8) The gun-heating system was modified to heat the cameras and the long-range oil tank, and provision was made for the camera-bay temperature to be maintained between 15°C and 25°C by the navigator.

Both 50 and 100-gallon drop tanks were made, in wood and metal respectively, but, as far as is known, only the larger ones were used in operations. The armament installation was also removed, with A52-6 as the first on the production line to have it omitted.

Delivery was made on 26 May 1944, eight weeks after the requirement was made known, and almost three weeks ahead of schedule. The installation of two-stage engines, which were one foot longer than the single-stage version, could not be met for this and a further five similar conversions (carried out by DH and the RAAF on A52-4, -6, -7, -9, and -26), and the six of them were re-designated PR40. After A52-2, the other five aircraft actually had a completely revised camera layout, allowing for either a trimetragon arrangement of K17's or, alternatively, one K17 vertical, one F52 vertical, and an F24 oblique, and the last was delivered in October 1944.

A52-3 met with an accident during retraction tests, for which pits were provided on the assembly line, when one of the radius rods crushed an oil tank because of incorrect dimensions on the tank. There was only about 1/16-inch nominal clearance between the rods and the grooves let into the tanks to accommodate them when retracted.

Variations in the grooves, after fireproofing of the tanks, caused assembly problems, and led to A52-3's undercarriage and tank damage.

Following one day of APU performance flying at Bankstown, one day of performance trials with drop tanks at Laverton, and a coat of grey paint, the prototype was flown immediately to Coomalie Creek (NT) where it joined a Lightning of No 1 PRU in carrying out urgent photographic flights over the Celebes, Timor, Java, and other Japanese-held islands in the area. The initial crew were Flg Off Ken Boss-Walker and Flg Off Jeffrey Love, respectively the brother of DH's Test Pilot at that time, and the son of Nigel Love, founder of the old AAECo.

Although it required an engine change after its first sortie, due to a faulty plug insert, A52-2 had satisfactorily completed 80 hours of flying in its PR form by 26 June. This first sortie had included

30 minutes over the target at Sourabaya on one engine to complete the required photo coverage, and the return flight of almost 900 nautical mile was made on this one engine. The operation was carried out at 31,000 feet, and the lack of pressurisation

caused some discomfort on this, and later sorties, which were usually made at altitudes between 25 and 32,000 feet.

This particular flight took 10 hours 25 minutes, and the faulty engine was twice restarted and used to regain height, but, on the last occasion, the propeller failed to re-feather and continued to windmill for the rest of the way home.

After the completion of 480 hours of operation in NW Australia, A52-2 was flown back to Bankstown for a critical investigation into the effects of



Photo: Sergeant K. R. Meggs, DFM., AAM. ca.1951 Korea; 77 Squadron RAAF

Excerpt from Keith Meggs Books

tropical operation on the type. The task was carried out jointly by DH and RAAF personnel at the end of June 1945, and resulted in its complete destruction, at a labour cost of Aus 447 Pounds.

Jeff Love's recollections of these operations include the following remarks:-

From the point of view of DR navigation the mosquito was not an easy aircraft, as space was scarce in the cockpit, and it was usually, done with a board on your knees. The compass in the early models was badly placed as it was in the Cockpit and subject to magnetic effect from the engines and wheels (this of course, refers to the normal errors to which a magnetic compass is subjected in a cockpit, as distinct from the distance reading types situated near a wingtip or in the rear fuselage, with a repeater only in the cockpit — KRM). With radio and camera operation there were no troubles, but the cockpit area definitely was cramped, particularly on the long PRU flights undertaken in the PR version.

As an indication of the distances covered and the duration of flights made on PR sorties Sqn Ldr Alfred Stuart Hermes flew from Truscott to Balikpapan and return on 30 July 1944, taking 8 hours 30 minutes for the 1,965 nautical miles, and a 2,030-nautical mile round trip was later made to Semarang in Java. Eight and up to ten hours was a common duration for these operations, which were predominantly to provide intelligence for the planning of the invasion of the Philippines, although it was found that the Packard Merlins gave quite some trouble with internal coolant leaks, and many flights were cut short for that reason.

The Mosquito was considered very suitable for the task however, and, apart from the contribution made by the RAAF Lightnings, which had not enjoyed good serviceability (mainly because of intercooler troubles) this work had been entrusted to entirely unsuitable Liberators of No 380 Group USAAF — six at a time, to provide defensive fire for the one photographic aircraft A52-4, which had been converted to conform to the later camera-layout requirements, entered operational service in the North late in August and worked out of Noemfoor from 26th August with the US 5th Air Force. Unfortunately, after returning with electrical trouble from two attempts to reach the Central Philippines, it crash landed on a beach in Dutch New Guinea, about 50 miles from base, the aircraft had caused fuel exhaustion and after bad weather and incorrect bearings past to them on the way home from the same target. Although the

aircraft was destroyed, the crew were unhurt.

A52-6 arrived at Coomalie Creek to the upgraded unit operating as No 87 (PR) Squadron, on 27 September 1944, and, in the following month, cameras with 36-inch lenses were tried, but, as they did not then give the results expected, the 20-inch lens continued as the mainstay. With three more PR40's on strength, the spares situation through December and January (1945) caused poor serviceability, and after receipt of a T111(A52-1010) on 20 February, the squadron received four English MkXVI's on 14 March. It was found that they cruised at rather a higher speed, and had better altitude performance than the PR40's but their fuel consumption was higher and range was correspondingly less, as both Marks carried the same amount of fuel. As the MkXVI's only carried one generator, they were also restricted operationally by the RAAF, because of the possibility of losing the aircraft after an engine failure at extreme range, allied to the fact that fuel crossfeed capability and transfer of drop-tank fuel would be lost if the port engine or its vacuum pump failed.

Another attempt at using the 36-inch lens was made in June 1945, on an F52 vertical camera, with highly successful results.

Design work was rushed ahead on the two-stage version, the specific engines being Packard Merlin 69's, and the planned introductory point -was aircraft number 256 (amended in June 1944 to number 251). A considerable amount of local design was necessary to cover the engine mounts, cooling system, cowlings, and engine controls. In the event, Canada decided to drop the Merlin 69 in favour of the Merlin 225 at about the end of the year, giving rise to an approach from Sydney to Toronto for the semi-completed engine mounting and radiator jigs, and the cowl lofting. A52-90 was used as the prototype for the Mk69 engined FB42, but the requirement for this Mark was dropped, and, after being completed and test flown in this configuration (late in November 1945, with company and RAAF testing continuing to February 1946) the aircraft was re-allocated to DH for further conversion to the PR41 prototype. It was then renumbered A52-300, in which form it was flown on 17 December 1946, and accepted on 25 May 1947 — it was the first of 28 PR41s, numbered consecutively to A52-327. It seems that another six conversions were carried out on existing aircraft while the production line was able to provide the further requirements.

Excerpt from Keith Meggs Books

This latter version had the electrical system fitted with circuit breakers instead of mechanical fuses, in accordance with the revised RAAF thinking, a Sperry A12 autopilot was fitted in lieu of the General Electric model originally specified (and described as the only one suitable for high-altitude operation) an 1,800psi high-pressure oxygen system replaced the low-pressure system, with six bottles instead of four, and balloon side windows were also incorporated. The fitment of two-stage engines necessitated an aftercoolant radiator, and this was installed under the engine, with a new, under-spinner intake. Fuel capacity was 856 gallons, with two 100-gallon drop tanks, but two 200-gallon drop tanks could be carried in lieu. To cater for the increased range, a long-range oil system as for the PR40 was fitted, but, after trouble with this system in A52-303, the requirement was dropped in June 1947 to comply with a reduced all-up weight of 21,500 pounds. However, delivery of 25% of modified tanks was made, to meet a possible requirement in the future. Although a 14-gallon tank was specified in 5/43, the PR41 tanks carried a warning that no more than 14 3/4 gallons was to be carried. The propellers were locally-made 23EX paddle-bladers, of which 176 were made by DH.

The camera layout was specifically for survey photography, with a vertical split trimetragon K17 in the nose, and two split vertical cameras at either 10° or 6° in the rear fuselage, either K17s or F52s. The windows for these rear cameras were covered for take-off by plywood discs which were manually jettisoned when appropriate cables were operated by the navigator. A Williamson camera-aiming sight was fitted into the floor in front of said navigator, and all camera controls and instrumentation were available to him.

In this form, a lot of the final work was completed by staff personnel and apprentices, because of a labour strike. It was delivered on 29 May 1947, and 21 of the last FB40's were subsequently completed as this Mark — 14 of them equipped No 87 Survey Squadron at Canberra from 1947 to 1953. They were used throughout that period for extensive survey and mapping projects over the Australian mainland and associated islands, while others were placed in reserve.

*** as explained this is an excerpt from Keith's reference manuals-----

Ummm...



The Ubiquitous "Jerry Can"

(Continued from page 11)

in London and was asked by British officers if he knew anything about the can's design and manufacture. He ordered the second of his three jerrycans flown to London. Steps were taken to manufacture exact duplicates of it.

Two years later the United States was still oblivious of the can. Then, in September 1942, two quality-control officers posted to American refineries in the Mideast ran smack into the problems being created by ignoring the jerrycan. I was one of those two. passing through Cairo two weeks before the start of the Battle of El Alamein, we learned that the British wanted no part of a planned U.S. Navy can; as far as they were concerned, the only container worth having was the Jerrycan, even though their only supply was those captured in battle. The British were bitter; two years after the invasion of Norway there was still no evidence that their government had done anything about the jerrycan.

My colleague and I learned quickly about the jerrycan's advantages and the Allied can's costly disadvantages, and we sent a cable to naval officials in Washington stating that 40 percent of all the gasoline sent to Egypt was being lost through spillage and evaporation. We added that a detailed report would follow. The 40 percent figure was actually a guess intended to provoke alarm, but it worked. A cable came back immediately requesting confirmation.

We then arranged a visit to several fuel-handling depots at the rear of Montgomery's army and found there that conditions were indeed appalling. Fuel arrived by rail from the sea in fifty-five-gallon steel drums with rolled seams and friction-sealed metallic mouths.

The drums were handled violently by local laborers. Many leaked. The next link in the chain was the infamous five-gallon "petrol tin." This was a square can of tin plate that had been used for decades to supply lamp kerosene. It was hardly useful for gasoline. In the hot desert sun, it tended to swell up, burst at the seams, and leak. Since a funnel was needed for pouring, spillage was also a problem.

Allied soldiers in Africa knew that the only gasoline container worth having was German. Similar tins were carried on Liberator bombers in flight. They leaked out perhaps a third of the fuel they

carried. Because of this, General Wavell's defeat of the Italians in North Africa in 1940 had come to naught. His planes and combat vehicles had literally run out of gas. Likewise in 1941, General Auchinleck's victory over Rommel had withered away. In 1942 General Montgomery saw to it that he had enough supplies, including gasoline, to whip Rommel in spite of terrific wastage. And he was helped by captured jerrycans.

The British historian Desmond Young later confirmed the great importance of oil cans in the early African part of the war. "No one who did not serve in the desert," he wrote, "can realize to what extent the difference between complete and partial success rested on the simplest item of our equipment—and the worst. Whoever sent our troops into desert warfare with the [five-gallon] petrol tin has much to answer for. General Auchinleck estimates that this 'flimsy and ill-constructed container' led to the loss of thirty per cent of petrol between base and consumer. ...

The overall loss was almost incalculable. To calculate the tanks destroyed, the number of men who were killed or went into captivity because of shortage of petrol at some crucial moment, the ships and merchant seamen lost in carrying it, would be quite impossible. After my colleague and I made our report, a new five-gallon container under consideration in Washington was canceled.

Meanwhile the British were finally gearing up for mass production. Two million British jerrycans were sent to North Africa in early 1943, and by early 1944 they were being manufactured in the Middle East. Since the British had such a head start, the Allies agreed to let them produce all the cans needed for the invasion of Europe. Millions were ready by D-day.

By V-E day some twenty-one million Allied jerrycans had been scattered all over Europe. President Roosevelt observed in November 1944, "Without these cans it would have been impossible for our armies to cut their way across France at a lightning pace which exceeded the German Blitz of 1940."

In Washington little about the jerrycan appears in the official record. A military report says simply, "A sample of the jerry can was brought to the office of the Quartermaster General in the summer of 1940."

No members have been reported as passing away since the last Bulletin was published.

New Members

Mrs Mary Burfield has taken over her past husband's (Grant) membership.

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