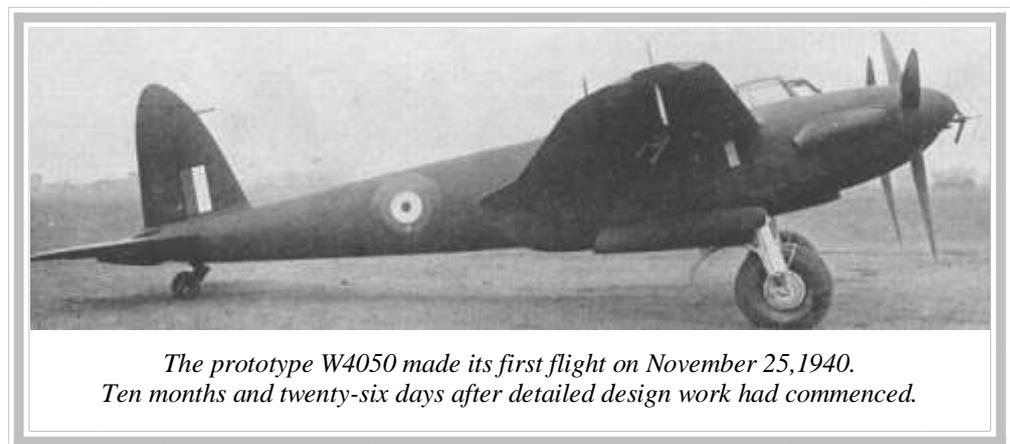
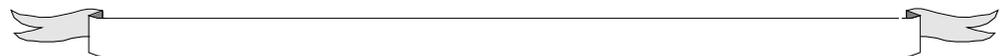




A 60 year old legend -

“The Wooden Wonder”

- W4050 first flew on



*The prototype W4050 made its first flight on November 25, 1940.  
Ten months and twenty-six days after detailed design work had commenced.*

# The Wooden Wonder

It is one of the paradoxes of aircraft development that some of the world's greatest aeroplanes have achieved their fame doing jobs other than the one for which they were originally designed. No better example of this could be found than the Mosquito, which, conceived as a bomber, became one of the war's most potent fighters. More than this, indeed, it was probably the most successfully versatile of any twin-engined type built between 1939 and 1945. It excelled in all the widely varied roles. Its duties included the duties of low-level and high-attack day and night bomber, long-range photo reconnaissance, mine layer, pathfinder, high-speed military transport, long-range day and night fighter, and fighter-bomber. It served in Europe, the Middle and Far East and on the Russian front. In fact the ubiquitous Mosquito reigned supreme among general-purpose types; and of the



grand total of 7,781 Mosquitos built, 6,710 were delivered during the war years.

On March 1, 1940, the first contract was placed, for fifty D.H.98 bombers (including prototypes) to be built to specification

B.1/40 which had been written around De Havilland's proposals, and the name Mosquito was approved. The period was an inauspicious one for the Initiation of so

radical a design; with the war going against Britain the tendency was to concentrate on existing designs. With the fall of France and the Dunkirk evacuation the Mosquito was actually dropped

from Ministry of Aircraft Production programs at one stage, setting back the ordering of materials. But permission to proceed was later given again, although De Havillands were told that their **Tiger Moth** and **Oxford** production were to take priority. Had it not been that the Mosquito used "non-strategic" molded plywood for its construction, it might well never have been reinstated.

Construction of the prototype was pressed ahead through the difficult months of 1940, while the "Battle of Britain" was fought out overhead. Bombs fell within a mile of the Hatfield factory on one day in every five, and nearly 25 per cent of the working hours, day and night, were spent in air-raid shel-



ters. Despite all these vicissitudes, the prototype (W4050) made its first flight on November 25, 1940, only ten months and twenty-six days after detailed design work

had commenced. The pilot was Geoffrey De Havilland, Jr. Meanwhile, inevitably, requirements had been changing. There was some loss of confi-

dence in the high-speed bomber, while the heavily armed long-range fighter grew in favor. The contract was, therefore, changed to twenty bombers and thirty fighters, necessitating the modification of a number of parts already manufactured. Construction of a fighter prototype proceeded at Salisbury Hall, London Colney, which served as a dispersal for the Hatfield design office and experimental shop. Two days before this prototype (W4052) was ready to fly, a German agent was dropped by parachute close to Salisbury Hall, in plain clothes and with a portable radio. He was captured next day, and the day after, May 15, 1941, Geoffrey De Havilland flew the fighter prototype from a 450-yard

*(Continued on page 15)*

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# Hercs cleared for service

The Australian Defence Force Airworthiness Board had to complete an extensive review of the operational and technical suitability of the new stretched model aircraft before the fleet could enter operational service.

Following the review, the Chief of Air Force (the ADF Airworthiness Authority), Air Marshal Errol McConnack, issued the C-130J-30 with an Australian Military Type Certificate and a Service release for the aircraft to start operational Service in the air logistic support and aeromedical evacuation roles. Clearance for additional roles, such as search and survivor assistance, paratrooping, airdrops and marginal airfield operations will be progressively achieved over the next two years.

Australia, which has taken delivery of 12 of the new Hercules, is the second country to issue Military Type Certification in the past month. Italy recently issued its type certification in anticipation of receiving the first of 29 C-130Js it has ordered.

The Military Certification for the Australian fleet is a significant milestone for the RAAF Forty years ago, it



became the first international customer to take delivery of the C-130A Hercules aircraft with subsequent purchases of the E and H models, reinforcing its enthusiasm for the aircraft.

The C-130J-30 is a generation leap in technology from its predecessors, incorporating numerous new systems. Major improvements include a head-up display and glass cockpit, new computer controlled engines and six-bladed composite propellers, a fully integrated digital avionics system and a computer based maintenance support system.

The Hercules aircraft have proved to be especially suited to Australia's unique environmental and geographic demands, and are tough and effective workhorses with an impressive safety record. The C-130J-30 will continue this tradition and promises to meet the RAAF's medium air lift requirements well into the next century, offering greater field performance, greater cargo volume capacity, improved reliability and availability.



# Bob Cowper DFC

The following is an article about Association member Bob Cowper is from "Australian Air Aces" by Dennis Newton.

Bob Cowper was born in Broken Hill, NSW, on June 24 1922 and educated at Queens College, North Adelaide. Living at Malvern, South Australia, he worked for three years as a draughtsman before joining the RAAF in December 1940. After training in Canada he reached England at the end of August 1941.

Cowper joined 153 Squadron for night fighting, and flew Defiants until 1942 when these were replaced by Beaufighters. Posted to the Middle East, he served in 89 Squadron but while flying to Malta in January 1943 to join the units detached flight he landed in Tunisia out of fuel. He and his observer were four days behind enemy lines before reaching safety. The flight became part of 108 Squadron in March 1943. He damaged a Me 210 over Tunisia on April 18/19 and on July 11/12 over Sicily he destroyed a Ju 88, but it apparently jettisoned a mine that damaged his aircraft when it exploded and he had to bale out into the sea. He was picked up by a hospital ship and taken to Tripoli and returned to the squadron three days later.

Cowper's tour ended and after a rest he was posted as a Squadron Leader to command a flight in 456 Squadron flying Mosquitoes. Covering the Normandy beaches on June 10 1944 he shot down a Do 217 and a He 177, and five days later shot down a Ju 88. He destroyed another He 177 on July 5 to bring his score to six and one damaged. To this total should be added a V-1 destroyed. He was awarded a Bar to his DFC in February 1945.



# Second Life Member

The Association now proudly announces that it has two Life Members. At the recent Annual General Meeting the retiring inaugural President, Max Ripper was awarded a Life Membership of the Association for his past eight years service. He joins Allan Davies who received his life membership last year.

Member Joe Graham put forward

the motion to bestow the honour, spoke of Max's devotion and achievements and all those present voted unanimously to recognise Max's achievement.

Max has decided to retire from active service due to health problems and the tyranny of distance, but will keep a close eye on the Association over the coming years.



Max officiating at his last meeting as Association President

## Correction

In the last Bulletin – No 25 – there was a photo of a low flying Mosquito.

The scuttlebutt that the pilot was Geoffrey De Havilland was incorrect.

Thanks to member Brian Fillery who corrected the story.

He wrote:

“The photo on Page 5 in Bulletin 25 is - RG177, a Mosquito PR34A of 81 Sqdn, Seletar.

It was piloted by Flight Sergeant Anderson - May 1953“.

Refer : Page140 -  
“Mosquito at War”  
by Chas Bowyer

Brian is an ardent Mosquito history researcher and can be contacted via email on:

[bfillery@gil.com.au](mailto:bfillery@gil.com.au)

or visit his Web page at:

<http://www.home.gil.com.au/~bfillery>

# Another Wooden Wonder - The Colditz Glider

The construction of a glider in a prison camp forms part of many escape stories. However, only in Colditz castle was this ever actually achieved. The idea of catapulting two prisoners seated inside a glider, from the castle roof and to land on the meadow on the far side of the river Mulde was conceived by Flt Lt. Bill Goldfinch and Lt. Antony Rolt. Detailed plans of the glider had already been drawn up when Flt. Lt. Jack Best came out of solitary in the early spring of 1944. The idea was explained to him, and enthusiastically supported. Stooze Wradle, a submarine officer also joined these three, making up a team of four to construct the glider.

The team now required a secret workshop in which they could spend nearly a year constructing this glider unnoticed by the Germans. Tony Rolt had an ingenious idea. He proposed to build a false

wall at one end of the attic above the chapel, sealing off a few feet in which the glider could be built. The length of the attic would ensure that this small alteration would go unnoticed, and that the



attic would pass inspection. The wall was constructed using a number of prefabricated frames, canvas palliasses covers, and debris, which had been dug from the French tunnel. The next day, the Germans inspect-

*(Continued on page 14)*

# Annual General Meeting

The Annual General Meeting was held at Clayton RSL on 23rd August.  
The minutes of that meeting have been enclosed separately with this Bulletin.

Left: (L to R)

Allan Ellis  
Reg Relf  
John Collins  
Joe Graham  
Laurie Bond (Rear)  
Bruce Peggie



Above Left: Phil Spielvogel, Alan Middleton,  
Arthur Nash

Above Right: Glynn Davies (obscured), John  
Kentwell, Graeme Coates, Reg  
Spooner

Left: Max Ripper being awarded his  
Life Member Certificate  
by his replacement, the incoming  
President, Roy Urand

# John Mills Recalls

*This is the first paper by John Mills who was chief engineer of de Havilland Aircraft Proprietary Ltd before, during and for sometime after the Mosquito (D. H. 98) that was manufactured in Australia. Later Bulletins will have parts B and C.*

**E**xperiences with de Havilland Australia and the United Kingdom pre-war and during World War II.

Some autobiographical notes by John Mills, with special reference to the production of the Mosquito in Australia.

Inspired by the occasion, hosted by Hawker de Havilland Australia to commemorate the 50<sup>th</sup> anniversary of the first flight of the Mosquito in England, November 25<sup>th</sup> 1940 and the invitation to those present to record what they were able, towards a definitive history of Australian Mosquito production.

Australian Mosquito production amounted to 108 aircraft up to VJ day. These were all constructed as fighter/bomber Mk 40 which had armament of four .303 Brownie machine guns, four 20 mm cannon, capacity for four 500 pounds bombs and under wing storage capacity for airborne rockets.

Six of these FB Mk 40 were modified after delivery by de Havilland to photographic reconnaissance aircraft, fitted with five cameras, fitted in the fuselage, 100 gallon drop tanks fitted under the wing, with internal fuel capacity increased, giving a range of 3000 miles.

Fitted with rockets, the firepower was equivalent to that from the broad side from a naval cruiser. As a photo reconnaissance unit the Mosquitos could cover Japanese activities efficiently.

As a side comment, whilst golfing at Forster, my partner who did not know of my connections with the Mosquito, told me he had been involved in Mosquito photo reconnaissance unit operations against

the Japanese north of Australia. He told me he flew out 1000 miles to his target using one engine, he started the second engine for his photographic run so that they could outstrip the Japanese fighters and he flew home on one engine (the other one). The one engine flying was done because he believed it helped his range. His opinion of the Mosquito was of the highest. Opinions such as these speak for themselves and all who flew the Mosquito had the highest regard.

For November 25<sup>th</sup> 1990, Peter Smith director of Hawker de Havilland invited all those persons who could be located and had active participation in the manufacture of the Mosquito in Australia to be part of a ceremony at Bankstown. This ceremony was to commemorate the 50<sup>th</sup> anniversary of the first flight of the Mosquito in England by Geoffrey de Havilland eldest son of the legendary founder of the de Havilland company.

The ceremony was a memorable occasion. All present were invited to make whatever contributions they could towards forming a definitive history of Australian Mosquito production.

For this writer it was a particularly stirring occasion, arousing memories which had lay dormant for some 50 years. Bringing back strong feelings of pride in our parent company's amazing achievement and pride in our Australian group who performed quite magnificently in producing the aircraft in Australia, after Japan has entered the war and the country's resources were very stretched.

These notes are made without access to files or records, because I took none with me. The recollec-

tions I have recorded here are the facts I can confidently recall. The omissions will concern some people and some detail that escapes me at this time. But the notes are a humble recollection concerning wonderful people with whom I had the privilege of working and with whom we achieved worthwhile results.

Peter Smith, at the historical ceremony, said "if an organisation cannot properly look at its past with pride and learning, then it will not properly be able to look at the future". (The quote may be a little inaccurate in its words, but to the meaning is certainly not!).

In making my contribution it would seem best to do it in three parts:

- (1) a note covering where I fitted into the organisation, which will include some observations concerning the parent company and our own Australian company, I have called this "Part A",
- (2) a note concerning "people" remembering that the greatest asset a company has is its people, I have called this "Part B", and
- (3) a note concerning my personal participation in the Mosquito project in Australia with as much information as I memory will enable me to recall and relate, I have called this "Part C".

Martin Sharp and Michael Bowyer produced an award winning book "Mosquito" in 1967 which must be regarded as the official history of the Mosquito. In Australia, David Vincent in 1982 produced "Mosquito Monograph", a history of Mosquitos in Australia and RAAF operation for which he re-

*(Continued on page 7)*

# John Mills Recalls – contd

*(Continued from page 6)*

searched official records. I have made use of dates and facts from both of these publications in these notes, and wish to make due acknowledgement.

Without records of any kind, historical recollections can be difficult. I had to refer to Lord Casey's book "Personal Experiences 1939-46"

for instance to learn the date of the fall of Singapore and highly was impressed that Lord Casey's records consisted of his personal diaries which amounted to some 700,000 words. Reading the biography of General Monash, I noted that our most famous General took with him into and out of Gallipoli, into and through France, his files, with out which history could not

have accurately being written.

It is with these acknowledgements that I suggest that these notes are somewhat of an autobiography rather than a contribution to a definitive history. But recognising this, the contribution is all I can muster!

## (Part A)

This part describes my position in relation to the Australian Company that had been set up by Hereward de Havilland (brother of the company's founder Sir Geoffrey de Havilland) in 1927 as the oldest overseas de Havilland company and headed by Major Alan Murray Jones from the early 1930s.

I was, as it happened, the first university trained engineer to be employed by Major Murray Jones, who was quite legendary. I joined de Havilland early 1937 having just graduated in the science and engineering (with honours) and receiving the Geoffrey Sulman memorial prize for Aeronautics for a thesis on the boundary layer. My degree was in civil engineering, the department of aeronautical engineering not being formed until 1940.

I had little practical experience and Major Murray Jones arranged for me to travel to de Havilland England where I worked "on the floor" with our parent company in the aircraft, engine and propeller divisions at Hatfield and Stag Lane. I also spent a period in the aerodynamics department under Richard Clarkson developing a photographic system for the measurement of aircraft takeoff and landing performance which was done as an "extra curricular" project with Bruce Douglas, ex De Havilland Canada and running the laboratory

at Hatfield. This work was published as a paper in the journal of the Royal Aeronautical Society in 1939 and in the de Havilland Gazette.

It is perhaps significant that a simple piece of equipment such as this was considered worthy of publication in the RAE's journal, and perhaps significant to that the ARB took up the idea. We sometimes forget what immense technical strides our industry took in the years subsequent to 1939.

The unique opportunity to work "on the floor" at de Havilland enabled me to get a special view of the de Havilland organisation, including the company's directors who were around in a special way, walking through the factories, greeting the workers. I gained a special insight into how de Havilland had continued between World War I and World War II supplying civil aeroplanes for personal and company use.

I recall Mr W. E. Nixon, secretary and director of the parent company remarking that day had in management experts who had showed them that they had lost money on each aircraft they had designed and built between the wars. The world wide reputation of de Havilland products and services with the "Moths", the Gypsy, the Tiger, the Box, the Puss and the Leop-

ard, together with the Dragon and its amazing performances in New Guinea made the management experts conclusions somewhat doubtful!

The company groups operated boxing clubs in each location and has a member of each boxing club as I moved around I saw the directors as keen front row audience when inter factory competitions happened. I remember Mr Lee Murray, the Australian born General Manager of de Havilland Hatfield, complaining that he and the company secretary had got their clothes blood damaged whilst at a contest at which I had participated.

And when, somewhat covered in grease and oil in an engine test cell it was quite remarkable to hear one of the directors on their rounds make some cryptic but apt comment about one's performance at a recent contest.

Design staff, some of whom later developed the Mosquito in that incredibly short period of 11 months, were around the place to, some with their peculiarities, some with their sense of humour. They mixed and they were real.

I recall Wilkins (who was the designer later to redesign the 500 pounds aerial bomb so that the Mosquito could carry four of them

*(Continued on page 8)*

# John Mills Recalls – contd

*(Continued from page 7)*

instead of 4 x 250 in it's bomb bay) talking seriously of a great idea to replace windscreen wipe as on cars with rotating glass panels which would shed the water by centrifugal action. He had a quizzical and entertaining manner.

The Albatross four engine airliner was around, being developed. The Albatross was an aerodynamic gem, which was, streamlined to an extent that had its wing and fuselage surfaces being flat plates of the same area rather than being in the form of an aeroplane, then it would have increased in speed only some 40 mph if pulled forward by the same thrust! Cruising at 210 mph it yielded 36 gross ton miles per gallon of fuel.

The Albatross fuselage was made of a ply/balsa/ply sandwich construction that was later used in the Mosquito so successfully.

Sir Geoffrey de Havilland have was seen as a most impressive but perhaps shy person who had the legendary respect of everyone as a quietly walked around his company. A story about de Havilland from Lee Murray:

“There are was a rash of failures in the Gypsy Major engine oil pump which seemed not to want to be

solved. de Havilland disappeared for a couple of days and was found in the workshop where are he had an oil pump rigged up we are a push bike pedal drive. Using hand drive it was possible to “feel” the thuds on the drive at certain speeds, which was probably the cause of the failures. Changing the number of teeth on one of the pump gears solved the problem.”

Sir Geoffrey worked to make flying available to all as cheaply as possible. He worried about the costs which went with a large factory and he started a “new factory” on its own within the parent factory where he aimed to build a “Moth Minor” at a low price - then some £575. He had a special design team and manufacturing team to achieve this and a special test flying team which, as it happened, was a fair headed ex-de Havilland technical school pilot, John Cunningham who later was to become the premier night fighter pilot on Mosquitos in World War II.

I recall that John Cunningham allowed me to fly the Moth Minor, which clearly demonstrated his courage! I brought the drawings for the Moth Minor back with me to Australia when I returned early 1939 and we tooled up for local manufacture which was disrupted by the outbreak of war in September.

I was able to learn about the manufacture and servicing of the Hamilton Standard propeller. de Havilland had the licence and they called propellers “airscrews”. During the war the term “propeller” was universally adopted, partly I believe, due to confusion which could and I believe did, occur between “air crew” and “air screw”!

I obtained a ground engineer's li-

cence on the propeller and was given the job of inaugurating visits by propeller service persons to each of the flight sheds of the manufacturers using our propellers throughout the country. These were the latest aircraft. The Hurricane at that time had a fixed pitch propeller and the Spitfire was not a customer at that time. Actually, in early 1939 from these visits to all flight sheds in the country, I had inadvertently obtained up to date product information from each of the flight sheds in the country and being after Munich, it gave a pretty grim picture.

Bill Isbister joined de Havilland Australia in 1938 and travelled to Hatfield to spend two years with de Havilland England, returning in 1940. Bill Isbister and I had been fellow students throughout our University career and he had decided to follow a year's postgraduate work after completing his degree that accounted for his later movement to de Havilland.

I returned to de Havilland Australia as works manager early in 1939 after visiting de Havilland Canada and Hamilton Standard at Hartford U. S. A. and United Airline at Cheyenne, Wyoming, U. S. A. They had their modest overhaul base whilst they supplied D. C. 3 sleeper accommodation across the U. S. A. Whilst the rest of the aircraft world was quite some way behind. We at de Havilland aimed to set up propeller service facilities, and we had a contract to make Tiger Moths at a rate of one or two a month.

On the outbreak of war de Havilland was quickly asked to make to Tiger Moths a day for the empire training scheme, General Motors making the Gypsy Major engines. Major Murray Jones used me as the technical person to get production going, using subcontractors to make metal parts rather than mak-

*(Continued on page 9)*

## Things you always wondered about:

- Why do stores that never close have locks on their doors?
- Why is the third hand on your watch called the second hand?
- What was the best thing before sliced bread?
- How did the fool get the money in the first place?
- Why say ‘after dark’ when it is actually ‘after light’?

# John Mills Recalls – contd

*(Continued from page 8)*

ing parts in our own plant. There are was little industrial backing for an aircraft industry at that time and it must be difficult, these days, to recognise how relatively unsophisticated industry generally was at that time.

I remember spending much time with toy manufacturers, makers of electrical meters, any shop that had metal presses and some toolmaking capacity to obtain a supply of the parts for the Tiger Moth. We at de Havilland where the backing of Jack Birchill made our welding jigs and drilling jigs needed for the production of the Tiger at the required rate, which was much greater than anything we had attempted previously.

Steve Newbigin, graduate from Sydney University engineering school joined us and did wonderful work with our subcontractors. Production experts were seconded to us from General Motors Holden and elsewhere to help us get the production rolling at the proper rate.

Sir John Storey who was a commissioner with the aircraft production commission and who pre-war had been production director for G. M. H. spent time with us and was of immense help. He really taught us the difference between making an aeroplane and making a number of aeroplanes at a required rate. Sir Harold Clapp was the chairman of the Aircraft Production Commission.

We at de Havilland had built a factory for propeller servicing near the aerodrome, at O’Riordan Street, Alexandria that had administrative offices also and here we moved, leaving the corrugated iron hangars at Mascot for Tiger Moth assembly. As a side comment, the location of this factory was quite close to a boiling down works

where blood and bone was made. When the vats were opened, the odour was dramatic and I first noticed that my ability to smell was mercifully dulled and I suspect my co-workers were similarly affected. It was not very long before we achieved our desired production rate and kept it (May 1940).

de Havilland had the task of making the variable pitch propellers and the constant speed governors that would be needed for Wirraway, Boomerang, Beauforts, Wackett trainers (later) and Beaufighters (later). Ian Spittle was released from de Havilland propeller division, Stag Lane to set up our Australian propeller production under Major Murray Jones.

The propeller service factory had to be enlarged to the full size available at that site and later on a second, larger, factory was built close by.

I was transferred to the propeller division in May 1940 as Technical Manager to Ian Spittle, responsible for all technical aspects that included inspection, servicing, engineering and experimental. The experiment included vibration, heat treatment, metallurgical and physical testing.

In May 1940, the propeller division had only a few people but grew to over 1000 by the end of 1941. de Havilland Australia produced over 2000 propellers up to V. J. day, sufficient for all Australian production and repaired a far greater number.

Propeller blade forgings were developed at the Australian aluminium company factory at Lidcombe where the drop hammer was installed. The factory was about a mile from the C. A. C. engine factory at Lidcombe and I remember that when the drop hammer for the propeller blades operated, the

ground shock wave would make itself visible as a mark on the machine surfaces being ground at the engine factory.

Forgings for propeller hubs and spiders were developed with Commonwealth Steel, Waratah, and we had a period developing, inspecting and approving the grain flows and material strengths for all vital parts. Commonwealth Steel produced all the special steels we required, quickly and to a high standard. Propeller blade forgings were also to the highest standard.

We had a period when we thought that supplies of aluminium could be cut off and we developed wooden propeller blades as an escape solution. These wooden blades were developed with close cooperation with the wood technology section of the C. S. I. R. O.

The root of the blade was made of strongly reinforced plastic impregnated, compressed wood which was scarf jointed to normal timber and these planks, when glued together, gave a laminated structure of considerable strength. The shank, of compressed impregnated wood was screwed into a steel sleeve that enabled the normal propeller attachment to the hub, as for the aluminium blade.

We developed full strength for this “screwed in” hub by carefully developing the outside steel screw so that the case would stretch, thus preventing the first thread taking all the load and leading to early failure before the other threads could take their share of the load.

The wooden bladed propeller was developed, tested, but was not needed. Aluminium was undoubtedly the proper material for wartime propellers that have to accept bullet holes and bending.

*(Continued on page 10)*

# John Mills Recalls – contd

*(Continued from page 9)*

de Havilland propeller division supplied all the needs for C. A. C. and the Aircraft Production Commission on time, and with the constant speed units made locally, made a substantial contribution.

I recall the reported dissatisfaction expressed on occasions by L. J. Wackett General Manager of C. A. C. concerning our efforts.

Also I recall travelling to Melbourne by car overnight with Ian Spittle, taking with us various propellers for the Wackett trainer in an attempt to pacify and satisfy our customer. To me it always seemed a little difficult to ascertain just what the problems were, but our visits to C.A.C. were always very worthwhile and pleasant. The Chief Engineer of C.A.C., Bill Air became a personal friend and we were able to talk and compare notes with the C.A.C. design office friends who included Fred David, Ian Fleming, Ted Faggetter, Doug Humphries and others.

Alec Bee came from England to help start propeller service and this later grew, under Archie Steinbeck, into a very large operation covering service to the USA as well as the RAAF needs.

The propeller factory had an excellent machine shop, under Wally Holman, heat treatment facilities for full propeller blades, excellent anodising baths, a first-class tool room which turned out first-class work which is the only way that constant speed governors and propellers can be made.

We had close ties with the Hamilton Standard company as well as our parent de Havilland Propeller Company and we carried out with Hamilton Standard expert Sam Fitting, propeller blade vibration tests to ensure the engine/propeller

combinations we were making would not have damaging features. This measurement of the stresses in an actual propeller blade whilst it is operating at full load fitted to an engine is a highly sophisticated operation, but a very necessary one for safe operation which is so essential even in war-time when equipment did not have very long lives often.

Geoff Venn Brown and Martin Chapman came to us from Sydney University engineering school and formed a strong team on our technical side. The propeller division team was an efficient and strongly supportive group that was a pleasure to be part of. Everyone worked untiringly.

Propeller development occurred during 1941 and later. But we did have some other thoughts, in early 1941, which concerned a simple fighter aircraft for the RAAF, which at that time was supplied with the Wirraway, although the Beaufort was coming.

When the Tiger Moth with its steel tube fuselage and wooden wings had successfully reached production, Major Murray Jones and his staff believed to we had the capacity, with outside support, to give the RAAF a simple fighter aircraft quite quickly. At the end of 1940 and start of 1941 there seemed to be no plans around to improve the situation.

The twin row Wasp was now under manufacture at the Aircraft Production Commission's engine factory at Lidcombe which had been set up to make engines for the Bristol "Beaufort". This was the first of the APC projects, and we sought to ascertain the top fighter performance we could get from this locally made engine using locally available materials.

We had the enthusiastic support of

Professor A. V. Stephens, newly arrived Hargrave Professor of aeronautical engineering at Sydney University, whose considerable background of experience at the Royal Aircraft Establishment in England was available for aerodynamics, controls, stability and performance. We also had his promise of the support of his students for this work.

Additionally Mr L. P. Coombes, head of the Aeronautical Research Laboratories at Fishermen's Bend, Melbourne, offered every assistance including aerodynamics, structures, weights, etc.

At de Havilland we had a young but dedicated group with a great feeling of confidence and enthusiasm for such a project. At the time, before Pearl Harbour, aircraft from overseas seemed to be unobtainable. Perhaps, in the absence of a close threat, the need for a fighter was perhaps academic, but Major Murray Jones, with it is World War I fighter background was convinced something should be done.

*(Continued on page 11)*

## New Member

Welcome to our latest new member :

John Hamilton, of  
4/10 Havelock Street  
ST KILDA, Vic

He has mechanical and metal working-knowledge of Mosquito aircraft and is currently working on the B24 Liberator restoration and other aircraft at Point Cook RAAF base.

He knowledge and expertise will not go astray.

# John Mills Recalls – contd

*(Continued from page 10)*

We produced a proposal for a simple single engine fighter, wooden wings and steel tubular fuselage, powered by the twin Wasp engine and using every piece of aerodynamic technique available with the guidance of our advisers.

We called the project "ADH-1" and Major Murray Jones presented it to the Chief of Airstaff, RAAF for his consideration when he visited us. A copy of the proposal is in the H. D. H. archives at Bankstown.

The only response we at the Havilland received from the RAAF was a question "why don't you use a more powerful engine?"

We at de Havilland were unaware at that time of the top secret Mosquito in England which was having its first flight on 25<sup>th</sup> of November 1940, had reached 20 deliveries at the end of 1941 and 443 in 1942 from Hatfield. The Mosquito was still "top secret" at the end of 1941 when revealed to us.

Historically, after Pearl Harbour, C.A.C. produced the "Boomerang" and de Havilland were given the go ahead for the Mosquito production in Australia, but the incident of the "ADH-1" is part of the record of that time. I was responsible for producing the proposal.

John Mills can be contacted at:

'Corandirk'  
Lake View Crescent  
FORSTER, NSW 2428

# Letters to the Editor

My name is Doug Morrison (Member no 175).

I am just making contact to let you know that I have written an article with photos on two Aussie mossies that ended up on the commercial register (A52-306 and A52-313).

This story is on the commercial life of the two and with any luck will be in the August edition of the Australian Journal "FlightPath".

The editor has not yet promised this. I am in the process of compiling a short follow up on the RAAF life of these two BUT I have not been able to locate any unpublished photos of these while in RAAF livery.

The story will NOT get published without photos. I was wondering whether you could put a little request in the next bulletin asking ex 87PR Squadron personnel whether they have any photos (or recall) of them and if so I can almost guarantee I will be able to get photos published. Can you help?

My follow up on RAAF service of the two above mossies will only be a short piece in "FlightPath" so I might write an extended one that could possibly be included in a future MAAA Bulletin.

I am in contact with a number who flew in these aircraft while in the RAAF including MAAA members Sam Jordan, Vic Guthrie, Laddie Hindley, my old mates Ted McKenzie and Mike Wood etc.

Regards Doug Morrison

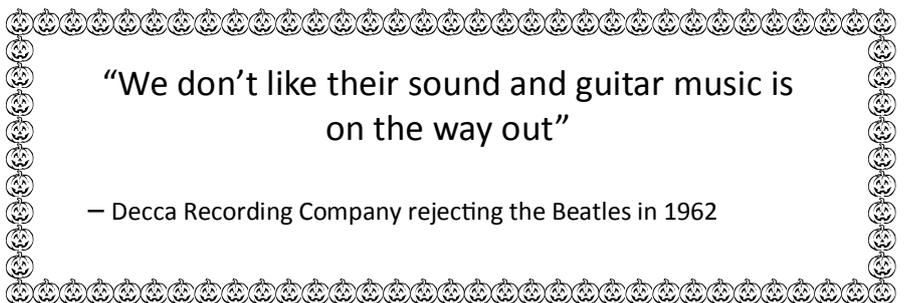


My name is Ron Walton and having just joined the Association I present a thumbnail sketch of my Service career.

The PRU element of my career was briefly thus:

I was posted to 140 Squadron, 2 TAF, in May 1944, but first attended a decompression chamber session followed by a Night Intruder course at High Ercall. Thus I was prepared both for the traditional high altitude PRU and for the low level reconnaissance which was becoming more important as the Germans were moving now mostly at night because the Allies had achieved air superiority by day.

140 was split into two distinct parts, "A" Flight continued its high level daylight operations while "B" Flight covered the low level ---8,000 and below --- targets at night with radar assistance. While we operated from England, (Northolt) we were using GEE which was less accurate than the very accurate REBECCA which, when deployed on the Continent



"We don't like their sound and guitar music is  
on the way out"

— Decca Recording Company rejecting the Beatles in 1962

# Letters to the Editor – contd

after D Day, enabled us to cover pinpoint targets at 4,000 and below. Our photoflashes were set to illuminate at half our bombing height and triggered off the split K 19 B cameras. The photographs were of excellent quality, particularly if we were operating under cloud cover.

As time went by, the 9 "B" Flight aircrews needed some relief as demands for night operations increased. On three occasions I flew two operations in the one night. We started to convert the "A" Flight crews to night operations. 16 Squadron (Spitfires) another of the three PRU Squadrons on our 34 Wing took over the 2 TAF high level role. The third Squadron, (69 Wellingtons) covered the low-level visual "dicing " tasks.

As Acting "B" Flight Commander, I was given dispensation by 2 TAF to carry on, without a break, with my second tour of operations. By VE Day, I had completed a total of 60 operations, of which 58 were at night and just two by day. These last two were of interest:

the first a classic 25,000 feet PR cover of the area and roads bounded by Strade, Cuxhaven and Wesermunde (13<sup>th</sup> September 44) and,

the second a low level on the deck dice of the harbours at Bremerhaven and Wilhelmshaven (24<sup>th</sup> April 45) to detect senior Nazi personalities trying to escape through Sweden.

The work of "B" Flight, 140 Squadron, can best be summarised by an article which appeared in the official RAF publication "Air Clues "of April 1953. As I, with my first navigator, Bill Harper, flew this sortie, we were interested to read:

On the night of January 5/6 1945, at the time of the Ardennes offensive, photographs were taken of Gorinchem Ferry, about 20 miles from Rotterdam. These photographs provided the first and only confirmation of a civilian report that the Germans were moving north, and were not, as had been anticipated, intending to launch an attack on the Canadian front, coinciding with the Ardennes offensive. This led immediately to the cancellation of orders to two divisions, which were to move up to hold the expected attack. The third division was released, and the order for the Canadian Army HQ to move south was cancelled. The RAF was also able to use the information because within 90 minutes of the photographs being taken, the first interpretation report was being phoned to TAF Recee Centre and 2 Group aircraft were despatched to bomb the area “.

It is so nice to know that sometimes, we can do something really useful!

After VE day the Squadron was moved from Eindhoven, our last airfield on the Continent to Acklington in Northumberland, and deposited its Mosquito 16s to await re-equipment with Mozzie 34s as part of TIGERFORCE to be based at Rangoon. But then came the A-bomb and TIGERFORCE faded. I can't say I was sorry, because my posting came through to the Experimental Flying Department, Royal Aircraft Establishment, Farnborough. No pilot could wish for a better posting.

Strangely enough one of my first tasks was with a Mozzie 34 with a huge electronic D2 flash in the bomb bay. I would never have volunteered to fly it on ops! Still, this was a gem of a posting and I was able to qualify on 46 types of aircraft before the end of my tour at Farnborough. Imagine the joy of flying a Spitfire, a Vampire and a Lancaster --- on the same day!

My next posting, to the Air Fighting Development Squadron at the Central Fighter Establishment, West Raynham was another plum. All on Meteors and Vampires against a perceived 40,000 feet threat. So I got my high level time in after all!

I enjoyed all of my subsequent postings except the last, at Operational Requirements at the Ministry of Defence, and applied for a premature retirement, which was granted in July 1968. My family and I arrived in WA in the September. After 31 years I am almost dinki-di -but our grandchildren certainly are!

One of the two RAAF pilots on 140 is still alive and I think living in Queensland. He is Bill Bone but I have no address for him. Ian Ewing, died some five years ago but I have maintained contact with his widow in Devonport, Tasmania, as well as with the other widows in England. Two pilots live in New Zealand, Charles (Chuck) Sharp, 17 Carlton Crescent, Kamo, Whangarei NZ and Ray Batenburg, 11 Riverview Road, Keri Keri, NZ. I correspond with them regularly and think that they may be interested in joining the Association.

I have just discovered "Mosquito Photo-Reconnaissance Units of World War 2" Osprey Combat Aircraft No 13. I am still looking for "Mosquito At War". Any Clues?.

# And Sixty Years Later On . . .

An aircraft that is bigger, faster and greater carrying capacity than what Geoffrey de Havilland could have envisaged... The Airbus A3XX, a giant among passenger and freight aircraft. It will typically carry 555 passengers, but is capable of a maximum load of 840.

The maximum takeoff weight of some 560 tonnes (1,233,480lb) will be pushed into the air by four Pratt and Whitney or Rolls Royce turbofans each developing up to 79,000 lb thrust each.

The maximum range with the typical passenger numbers will be 8150 nautical miles (15,100km).

The A3XX dimensions are:

* Wingspan	79.8m
* Overall length	73.0m
* Height	24.1m
* Wing area	830m <sup>2</sup> .

There will be three decks, the upper two for passenger seating, while the third (lower) deck can be used for some freight and all manner of passenger facilities, ranging from a gymnasium or casino, through to bars, a duty free shop or even a McDonalds (heaven

forbid!).

Let's put this aircraft into perspective and compare it with our favourite PR Mk XVI – A52-600:

- \* It is as wide as 5 Mossies placed wing tip to wing tip
- \* It is as long as 6 Mossies placed nose to tail
- \* It is as high as 6 Mossies stacked one on top of the other
- \* It weighs in at 50 Mossies loaded to the max
- \* It carries 100 times the fuel capacity of a Mossie
- \* It could carry 75 x 4000 lb bombs, where the Mossie could carry one
- \* It could carry this payload 7 times farther than the Mossie
- \* It will travel half as fast again as a Mossie
- \* It can fly 25% higher than a Mossie

How is your bank balance? You will need over (Aust) \$400M to lay your hands on one. That would be enough to pay for all the Mossies ever built wouldn't it?

Not to mention restoring just one...



# The Colditz Glider – contd

*(Continued from page 4)*

ed the attics, and everything was found to be in order.

The plan was that on the day of the flight, a hole would be made in the west wall of the attic, and the glider moved out on to the roof.

The sixteen-foot wings would be

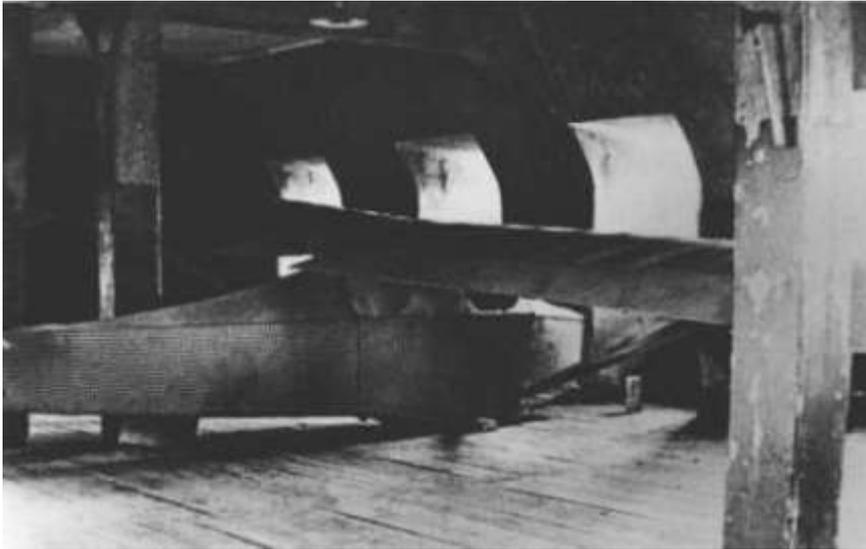
would accelerate the glider beyond its stalling speed.

Construction of the glider properly began in May 1944. It continued, guarded by an elaborate stooing system, until its completion in early 1945.

The stage was set for the greatest

be held in reserve in strict secrecy until the castle is liberated, or until you have further prior instructions from myself or my successor in command". Hence, the glider remained hidden in the attic until the castle's liberation in April 1945.

After the war, failing to appreciate the significance of the glider, the townspeople of Colditz destroyed it. In the latter months of the 20th century, as part of the Channel 4 documentary, a full-scale model of the glider was constructed and flight-tested. It flew perfectly.



attached to the main body on a trolley, attached by a system of pulleys to a bathtub filled with concrete. Bill Goldfinch calculated that when dropped 60 feet through the floors of the castle, the bathtub

escape of all time. Unfortunately, the allied advance across Europe had beaten them to it. Col. Tod declared that escaping from Colditz was now considered a far too great risk to take: "The glider is to

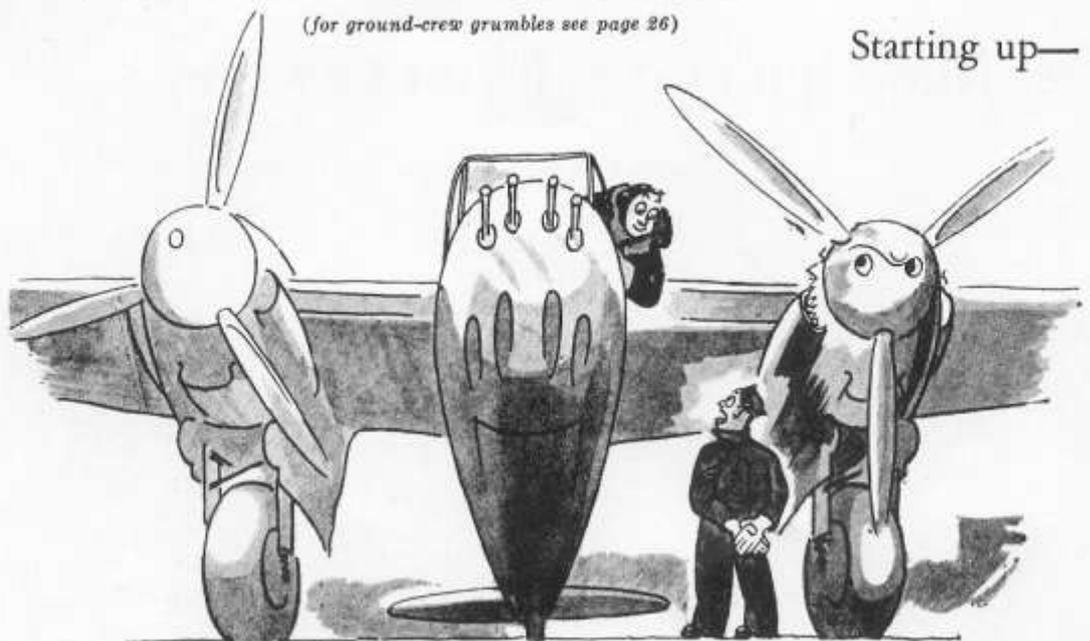
There is a mighty  
big difference  
between good  
sound reasons  
and a reason that  
sounds good.

Mosquito Mutterings  
Published by The de Havilland Aircraft of  
Canada Ltd., Toronto, 1944

## Part I: Air-crew Intimacies

*(for ground-crew grumbles see page 26)*

Starting up—



"No, it won't start because it's over-rich. And the burning smell is from one of my beautiful new starter-armatures, due to you keeping your thumb on the starter button far too long—sir."

# Vale

*It is with deep regret that we must announce the passing of the following members.  
Our sincere condolences go to the loved ones they have left behind.*

## **HA (Herb) Gamble**

– Foundation Member No 5.  
of: Murrumbeena, Victoria

Passed away 29/08/2000

## **HG (Bert) Morgan**

– Member No 93.  
of: Durack, Queensland

Passed away 26/06/2000

## **J (John) Sandford**

– Member No 132.  
of: Ballarat, Victoria

Passed away 03/08/2000

## **AM (Alfred) Waski**

– Member No 269.  
of: Parklea Garden Village, NSW

# The Wooden Wonder – contd

*(Continued from page 2)*

field beside the shed in which it had been built.

The first Mosquito sortie was made on September 20, 1941, when a single aircraft made a reconnaissance flight over France. At home, the Mosquito night fighter, carrying A.I Mk IV airborne radar, began to take over from the Bristol Blenheim. By late 1942 the Mosquito was becoming operational in ever increasing numbers, and its unique qualities of very high speed and long range were clearly ideal for a particular mission then being planned.

It had been decided that an attack should be made on the German Gestapo headquarters in Oslo, Norway, which contained records of members of underground resistance organizations. Such a mission would, if successful, help protect those who were supplying Britain with secret information. Therefore, on September 25, 1942, Mosquitos carried out a long-range attack on the HQ, accurately bombing the building and then returning home at high speed.

The basic fighter Mosquito introduced into squadron service in 1942 was the N.F.Mk.II, equipped primarily as a night-fighter and used for home defense alongside the Bristol Beaufighter. Its armament comprised four 20 mm cannon in the front fuselage belly and four 0.303 in. Browning machine-guns in the extreme nose. It carried A.I. Mk.IV or A.I. Mk.V "arrowhead" radar and a G-45 machine gun. Its matt-black overall finish, incidentally, reduced its maximum speed by 16 mph. Power was provided either by two Merlin 21 engines giving 1,280 hp for takeoff and 1,480 hp at 12,250 feet, or two Merlin 23 engines giving 1,390 hp for takeoff and the same maximum power at 12,250 feet.

On the night of May 28-

29, 1942, Mosquito N.F.IIs scored their first "probable," and in the following three years Mosquito night-fighters racked up a score of approximately 600 enemy aircraft over the British Isles, and also destroyed 600 flying bombs in a two-month period. They later operated in the bomber support role, their

task being to defend the main heavy bomber streams over enemy territory. Of the 466 Mark II Mosquito fighters produced, some of the later aircraft had day-fighter finish and, with



the AI radar removed, operated over Malta, Italy, Sicily and North Africa from the end of 1942 onwards.

Operational experience with the Mosquito II in its day-fighter and intruder roles led to the development of the F.B.VI, a potent fighter-bomber which came into

*(Continued on page 16)*

# The Wooden Wonder – contd

(Continued from page 15)

service during the early months of 1943. It had been discovered that the Mosquito was able to accommodate a much greater warload than that for which it had been designed, and thus the Mark VI, with a strengthened wing for external loads which later became known as the "basic" wing. It carried a full complement of cannon and machine-guns, two 500-lb. bombs in the rear half of the bomb bay (the front half containing the cannon breeches) and two 500-lb bombs under the wings. Actually, the full 2,000-lb bomb load was only carried by the Mark VI Series 2, which took advantage of the 1,620 hp available from the Merlin 25 for takeoff. The first 300 machines being F.B.VI Series 1 Mosquitos with Merlin 21s or 23s and carrying two 250-lb bombs internally.

Later, in mid-1943, the Mosquito FB Mk VI was becoming operational. As well as the usual RAF duties, it was used by Coastal Command as an anti-shipping aircraft, armed with eight 60-lb rocket projectiles. More unusual weapons carried by some Mosquitos included a 57 mm cannon for ground at-



tack (this devastating gun was capable of destroying any armored vehicle), and the 4,000 lb 'block-buster' bomb. Even with this bomb on board, the Mosquito could out fly most German night fighters, and on numerous occasions it attacked far-off Berlin and German V1 flying-bomb sites.

An entirely separate line of development from the Mosquito N.F.II produced a series of night-fighting variants, which were primarily used for home-defense pur-

poses. The first of these was the N.F.XII, plans to produce the N.F.VI with Merlin 21s and the "basic" wing, and the N.F.X with Merlin 61s and the "basic" wing, having been abandoned.

The Mosquito N.F.XII became the first British aircraft to carry centimetric AI radar. This form of radar

introduced the spinning-dish scanner with greatly improved performance compared with the earlier "arrow-head" type, but it resulted in some singularly unattractive nose contours on the aircraft in which it was carried. The centimetric radar supplanted the four machine guns in the fuselage nose, reducing the armament to four 20-mm Hispano cannon. To expedite its service debut, the Mosquito XII was based directly on the Mark II and ninety-seven machines were converted by the installation of the new radar.

Of the Mosquitos built in Canada, the F.B.26 was one of the chief variants, the design of which was based upon that of the F.B.VI. With the same armament as its British counterpart, it had Packard Merlin 225 engines and weighed 21,473 lb. The sole F.B.24 was similar but had Packard Merlin 69s, while the F.B.21, of which only three were built, had Packard Merlin 31 or 33 engines. Australian production was also based initially on the fighter-bomber, the F.B.40 being similar to the F.B.VI but having Packard Merlin 31 (the first 100 production machines) or 33 (last seventy-eight) engines. One F.B.40 was re-engined with Packard Merlin 69s and redesignated Mosquito F.B.42, but no production of this version was undertak-



en.

No fewer than twenty-seven different versions of the Mosquito went into service during the war years, and some of the most spectacular operations of the air war stood to its credit. The Mosquito carried phenomenal loads over extremely long distances, performing feats out of all propor-

tion to the specification originally envisaged by its designers. In short, the Mosquito was an outstanding warplane on every count.

Mosquitos were active on D-Day, and right up to the end of the war. Others were license built in Canada and Australia. Production did not end in Britain until late 1950.

## The CO's comments on Staff Officers

- Did well as Father Christmas
- I have heard my senior staff describe this officer as a typical rugby forward – no speed, no brains, but will push like hell.
- This officer has failed to reach the low standard he set for himself
- Willing – has much to learn – with small capacity
- Borders on the brilliant, needs careful watching!