

MANUFACTURE OF MOSQUITO AIRCRAFT DURING WORLD WAR 2 FOR SERVICE IN NEW GUINEA

By Arthur S Edwards FIE Aust, AACE, CCE Emeritus. A member of the original engineering team charged with getting this remarkable aircraft into production and into service.

ABSTRACT:

During WW2, various fighter aircraft were available to the Allies, in Europe the best known were the Spitfire and the Hurricane, and in the South West Pacific it was the Kitty Hawk and the Beaufighter.

Then a new Aircraft in the form of the De Havilland Mosquito, a twin engined all timber (except for the engines which were Rolls Royce Merlins) aircraft capable of being used as a bomber or a fighter came into service in Europe.

INTRODUCTION:

With a top speed of over 400 mph and a ceiling in excess of 35,000 ft, no German fighter could get near it. In Europe, it operated with near impunity making two bombing raids over Berlin each night with change of crew and with an overall loss rate of 0.65% as compared to the Lancaster's minimum 20% loss rate often as high as one in two.

It was against this background that General Macarthur SPCSWPA – (Supreme Commander South West Pacific Area) took over the defence of Australia at the request of our Prime Minister John Curtin in 1942. Macarthur decided he wanted an aircraft, which could climb much faster than the two at his disposal to intercept the Japanese.

Thus, the order was given to put the Mosquito into production in Australia and to give it the necessary authority Macarthur gave the project No2 priority Aircraft Production.

Note 1: Aircraft statistics and service Ref: The Hardest Victory Denis Richards 1994 RAF Bomber Command in the Second World War Chpt.24 Retrospect Page 294.

In early 1942 the decision was taken to put the Mosquito aircraft into production in Australia. The author was flat out studying a compressed engineering course at the Sydney College of Engineering at the direction of the manpower authority, not known at this stage to be posted to the newly set up Engineering Team being formed for this purpose upon successful completion. I was determined to do well.

Note 2: I will rely on the following ref for early sequence of events: Mosquito Monograph David Vincent a History of Mosquitoes in Australia and RAAF Operations. Chap 1 page 7. "At the inaugural Meeting of the Aircraft Advisory Committee, held on 13 January 1942 'it was noted that the company had despatched two of its officers abroad at its own expense to investigate production'. At the seventh meeting of the Committee Mr David McVey, Secretary Department of Aircraft Production, advised that on the 23 February he had sent a memorandum to the Department of Air 'stressing the view that no time should be lost in making arrangements for the construction of these aircraft'

Thus, the project was underway, albeit subject to many delays and did not for all practical purposes get under way until the second half of 1942.

However, this enabled time to set up an Engineering Production Office in the De Havilland offices on the corner of Missenden Road and Parramatta Road, Camperdown, Sydney NSW. This office comprised of engineers, some in RAAF Officer uniform and some civilian, one specialist mathematician, draftsmen in RAAF uniform, sergeants rank and two female tracers for tracing master plans onto linen, and end of Nov 1942 junior engineers fresh from College, total 66 men under the control of Chief Engineer Ray James.

In addition, two complete sets of parts sufficient to assemble two complete aircraft were ordered from England, but as this was a time of maximum activity by German U Boats, a goodly number of these parts, which were to be used as templates for jigs and fixtures, were lost at sea necessitating local design to fill the gaps.

My initial duties involved design of jigs and fixtures for production of parts and the design of simple connections lost at sea. Then I was provided with a Standard 10 motor vehicle and instructed to visit the subcontractors, fuselages at Beales the piano people at Camperdown, wings all in one piece at General Motors Holden at Pagewood, tail assemblies at Butler Air Transport at Mascot – full assembly of complete aircraft on two production lines at Bankstown Aerodrome.

Note 3: At the next meeting held the following week Mr McVey stated that, in anticipation of the project being proceeded with, approval had been given ---- that the necessary fuselage jigs, spar glue presses, spar assembly jigs and main wing assembly jigs be ordered immediately. "The Air Staff had advised that they were satisfied with the operational characteristics of the DH 98 but ----- felt that any planning for the manufacture of this type of aircraft should not proceed until there was some assurance of the likelihood of complete satisfactory manufacture. In the light of the subsequent history of Mosquito production in Australia, this was a very farsighted statement, however at this time it was based solely on a comment made by the Air Ministry, which implied structural weaknesses in the aircraft in tropical conditions --- failure of the wing main spar. Mosquito Monograph David Vincent.

Nevertheless, production proceeded. The first six aircraft crashed, four over Bankstown failing to pull out of a dive (wing broke off) and two collided over Stanmore killing RAAF test pilots. De Havilland head office in England claimed inferior workmanship by Australians on the wing spar, which was all in one piece from wingtip to wingtip, and laminated for strength, however as it turned out unsuitable design for tropical conditions was the cause. Engineers/ mathematicians redesigned the wing spar locally and no more problems arose.

Production continued throughout 1943, 1944 and 1945 until sufficient aircraft were produced for active service and to equip all OTUs in Australia (Williamstown etc. were fully equipped after the war).

Some unpleasantness arose within the team – civilian personnel were required to work from 8am to 6pm six days/week, whereas RAAF personnel worked 9am to 5pm before returning to base. This made me determined to join RAAF Aircrew when I turned 18 in June 1943, however the manpower authorities refused a release and that put an end to that after a second visit to Wolloomooloo RAAF recruiting centre – I tried to enlist as a Navigator, however after passing the medical I was graded for pilot training, but all came to naught.

Occasionally, I would return to my home town on a Saturday night via one of two expresses, the Melbourne Express or the Riverina Express, alighting on the wrong side of the tracks at Cootamundra at about midnight and walking across to a little goods train which terminated in Temora, going to sleep and waking up next morning and walking home. As I had no money (my salary was two pounds fifteen shillings per week of which two pounds went on board & lodging, six shillings on a weekly train ticket and the balance on personal sustenance and entertainment) so it was necessary to hide up on a rack in the centre of the carriage and hope to not get caught by the conductor.

Returning on Sunday night to Sydney by dogbox mail train, sometimes cuddling up to buxom country girls who boarded the train at Harden, Murrumbah or other station, cuddling up under a blanket.

I made one of these trips straight after my 17th birthday to go to the local police station and apply for a driver's licence (I had been driving Dad's car and wheat trucks since age 12 and the local sergeant knew me) Asked what I wanted, I said "I would like a driver's licence please" The sergeant typed out the particulars and said "that will be ten shillings please" and so I became a licensed driver.

How this relates to the Mosquito production is as follows: After the main assembly jigs had been in use for some time, guide holes began to elongate with wear making for difficult assembly on line, and other faults developed, so as I was the youngest member of the team with engineering training and a driver's licence, I was made an inspector responsible for visiting the subcontractors and ensuring that timely repairs were made to the Jigs and other equipment to ensure their continued serviceability, this included the main assembly lines at Bankstown aerodrome.

Inspection duties together with some design of Jigs and Fixtures, basic bits and pieces became the pattern of my service throughout 1943, 1944 and 1945. Occasionally, I would move away from my desk to talk to one of the other Junior Engineers and in no time, Ray would be on my back. Eventually I decided to front him in his office and ask why he was riding me? He replied, "You are the only one worth worrying about – one of these days you will make a damn fine engineer". We missed the end Pacific War celebrations, as we were hard at work building Mosquitos to equip OTUs throughout Australia, which extended into 1946. A total of 230 aircraft were built.

Note 4: for a history of individual Mosquitos, which saw active service with the RAAF ref: MOSQUITO MONOGRAPH by David Vincent. Available from The Australian War Memorial Library Canberra ACT.

After the team disbanded, Ray James became Chief Engineer for Nestlé's Post War Reconstruction program and he rang me up and offered me a job, which I happily accepted. Among other duties I handled all the calculus problems relating to the design of the machinery where there were two or more variables in the Equation.

Arthur S Edwards FIEAust CCE Emeritus 2003-03-23