
A7 – Aermacchi MB-326H



Aermacchi MB-326Hs A7-025, A7-021 and A7-097 of Central Flying School at RAAF East Sale, shown in their Roulettes aerobatic team colour scheme. Source: Alan Flett collection



Four Aermacchi MB-326Hs, A7-002, A7-005, A7-008 and A7-011, of Central Flying School, RAAF East Sale, that also formed part of the RAAF's Telstar aerobatic team between 1967 and 1970. Source: RAAF



Aermacchi MB-326H A7-003 was delivered to the RAAF in 1967 and was flown by Central Flying School, however, was lost in a crash near RAAF East Sale on 7 March 1968. Source: RAAF

One of several 'new generation' jet trainers of the era, the Aermacchi MB-326 first flew in December 1957. During a production run of nearly twenty-five years, 776 were built, 502 of them under licence, including in Australia for the RAAF. This made the MB-326 the most produced post-World War II Italian military aircraft.

In the 1960s, the RAAF was looking for a replacement for its Vampires and Winjeels, in an attempt to establish an all-through-jet pilot training syllabus, a system which was gaining favour with air forces around the world. It meant that trainee pilots would start on a jet, eliminating the need for a basic piston-engined trainer in the *ab initio* phase. The concept proved to be less than successful, and was quickly dropped by most air forces including Australia.

Having evaluated several jet trainers, including the BAC Jet Provost, Canadair Tutor, Fuji T-1 and Saab 105, the Aermacchi MB-326H (its Australian designation) was selected in August 1965 to replace the aging and dated Vampire jet trainer. The Macchi—as it quickly became known—featured a tandem cockpit (arguably much better for advanced flying training) that reflected the new and improved cockpit of 1960s generation aircraft. It was considered similar in layout to the the Royal Australian Navy's (RAN) Mirage III and RAN's A-4 Skyhawk fighters.

The initial order was for seventy-five aircraft for the RAAF—later increased to eighty-seven—with a further ten aircraft added for the RAN. Like many aircraft selected by the RAAF during this time, these were produced in conjunction with Australian industry with the Commonwealth Aircraft Corporation (CAC) as prime contractor. CAC was also responsible for local production of the Macchi's Rolls-Royce Viper turbojet engine.

The RAAF's MB-326Hs were serialised A7-001 to A7-072, A7-079 to A7-083 and A7-088 to A7-097, while the RAN's were N14-073 to N14-078 and N14-084 to N14-087. When the Navy Macchis were transferred to the RAAF in 1983 with the demise of the RAN Fleet Air Arm carrier borne fixed-wing element, they received the RAAF A7 serial prefix.

The RAAF's first Macchi flew in Italy in April 1967 and was shipped to Australia for reassembly by CAC and handed over to the RAAF in October 1968. The first twenty Australian Macchis were assembled from predominantly Italian components, with the remaining seventy-seven having a much higher Australian content. The ninety-seventh and last was delivered in September 1972.

The Macchi was a delight to fly and quickly proved to be a far more capable advanced pilot training aircraft than the Vampire. First deliveries were to



Aermacchi MB-326H A7-060 in the colours of No 2 Operational Conversion Unit, at RAAF Williamtown, New South Wales, circa 1972. Source: Alan Flett collection



Six Aermacchi MB-326Hs of Central Flying School, with A7-068 in the front, in their distinctive 'fanta can' colour scheme at RAAF Fairbairn, Canberra. Source: Alan Flett collection

the Central Flying School (CFS) at East Sale, where instructors learn their trade. CFS quickly adopted the Macchi as the RAAF formation aerobatic team's (the Telstars) aircraft and then the RAAF's best-known display team, the Roulettes. The Roulettes operated the Macchi from 1970 to 1989 when it was replaced by the Pilatus PC-9/A.

After CFS, Macchis were delivered to No 2 Flying Training School (2FTS) at RAAF Pearce, Western Australia in 1969, where they were operated in the advanced pilot training role. Pressure to increase numbers through pilot training for the war effort in Vietnam and the soaring cost of fuel saw the Macchi used as an all-through trainer, albeit very briefly. The RAAF's philosophy of all-through jet pilot training lasted for only two courses before reverting to basic training on the piston-engined Winjeel, followed by advanced training on the Macchi.

Several aircraft were allocated to the Aircraft Research and Development Unit and the ten RAN aircraft were used for lead-in A-4 Skyhawk transition training and pilot development.

The Macchi's main operator was 2FTS at Pearce until the final pilots' course in 1991. In addition, the Macchi was flown in the lead-in-fighter role by No 2 Operational Conversion Unit, No 5 Operational Training Unit, and Nos 25, 76, 77 and 79 Squadrons.

The Macchi came with two sizes of wingtip tanks: the training role thirty-gallon 'small tippers' and the larger, seventy-gallon 'big-tippers' for ferrying. In the end and due to the geographic size of Australia, the longer range, and more versatile, big-tippers became the norm, with just a few of the small tippers remaining in the fleet.

From 1989, the Pilatus PC-9/A (see entry A23 in the third series) replaced the Macchi in the advanced pilot training role. The remaining Macchis were transferred to the lead-in-fighter role, serving with Nos 25, 76 and 79 Squadrons in that role until replaced by the BAE Systems Hawk 127 (see entry A27 in the third series) in 2000.

The Macchi suffered a number of losses early in its RAAF service, largely due to a series of engine fires caused by high-pressure fuel leaks. These resulted in several fatal accidents and a number of ejections. Lack of pilot experience on the aircraft resulted in several safe ejections from inverted spins. Unfortunately, one aircraft was lost and its crew tragically killed when the canopy was inadvertently opened in flight. The fuel leak/engine fire problem reared its head again in the late 1980s with several more aircraft lost, fortunately with safe ejections.

Over its service life there were a number of operational accidents from low flying/controlled

flight into terrain, low-level aerobatics, a few mid-air (at CFS/Roulettes and No 76 Squadron) and several engine flameouts caused by icing. The most notable mid-air occurred in March 1988 when two Roulettes collided (No 4 with a TV camera on board hit Roulette lead) during flying display practice for the 1988 Bicentennial Air Show. In total, some twenty-six Macchis were lost in its more than three decades of service.

Fatigue life management became a major issue with the Macchi, requiring extensive input from the RAAF, Australian industry and the Defence Science and Technology Organisation. This collaboration resulted in an extensive Life Of Type Extension (LOTEX) programme in the early 1980s covering much of the airframe. The fatal crash involving the loss of a wing by A9-076 in late 1990 prompted a significant review and overhaul of the RAAF

airworthiness management system and resulted in a re-winging programme for twenty-seven Macchi aircraft in the early 1990s with new wings supplied by Aermacchi.

By the early 1990s the Macchis were flying only in the vitally important lead-in fighter trainer role but the fatigue issues substantially reduced the number available (only nine in 1992 and twelve in early 1993 when thirty were needed) and severely compromised the RAAF's training syllabus. Imposed 'G' limits further restricted the aircraft's usefulness'.

A lengthy evaluation period saw the BAE Systems Hawk ordered in June 1997 with deliveries starting in 2000 from both British and local production. The Macchi's last public appearance was at the 2001 Australian International Airshow at Avalon with retirement following shortly afterwards.



The RAAF's Roulettes aerobatic team of five Aermacchi MB-326Hs, flying in close formation over Ninety Mile Beach near RAAF East Sale, Victoria, circa 1990s. Source: RAAF



Aermacchi MB-326H A7-081 of No 25 Squadron and based at RAAF Pearce, Western Australia, in its overall grey scheme off the WA coast, circa 1990s. Source: Aviation Heritage Museum of WA via Mike Mirkovic

TECHNICAL DATA: Aermacchi MB-326H

DESCRIPTION:

Advanced pilot and lead-in-fighter trainer.

POWER PLANT:

One 11.12kN (2500lb) Rolls-Royce Viper 11 Mk.22 turbojet.

DIMENSIONS:

Span 10.57m (34ft 8in); length 10.67m (35ft 0in); height 3.71m (12ft 2in).

WEIGHT:

Empty 2236kg (4930lb); loaded 4300kg (9480lb).

PERFORMANCE:

Max speed 806km/h (501mph); initial climb 1370m (4500ft)/min; service ceiling 13 411m (44 000ft); max range with big tip tanks 1512km (940 miles).