



Mirage Enthusiasts Blogs



One Team For Life

Blog 5. Dual Seat Mirage – Canopy Failures.

26 Oct 23. Mike Nixon

What a collection of stories! I'm sure there are many more out there. My final (I promise) contribution is the story of my high speed dual canopy burst in 1976. I was fortunate to enjoy a relatively SOP flying career (few emergencies and no ejection). This canopy incident was my most exciting event!!

Best wishes to all.

This is the tale, as I recall it, of my experience of a shattered canopy in a Mirage at high speed and high altitude.

On Monday 13th December 1976, I launched from Amberley in Mirage A3-102 for a transit home to Williamstown. Four pilots had travelled up to Amberley in two duals (2-seater Mirages) for the weekend, to attend an important event in Brisbane. We were asked to return to Williamstown early in Monday, as the aircraft were needed to fly in the 2OCU training program.

Having always enjoyed the high speed performance of the Mirage, I considered a supersonic run for the return flight. The straight-line distance is about 300 nm, but a dogleg totalling about 350 nm would be required to be legally supersonic off the east coast. Accurate fuel planning data was not available in the flight manual for such a profile, but I knew from experience flying Butterworth-Tengah (a similar distance), that 820 Gal would be ample. The route and timings were planned, the flight plan submitted and I briefed the flight to the other guys. I had Dave Freedman (RIP much later) in my back seat, and I don't recall who were in the other dual.

We launched as a pair on a beautiful clear Queensland morning and climbed away to the south-east. Our route coasted out around Byron Bay, then turned to parallel the coast, keeping Australia on the right. The briefed profile was a standard dry climb to FL450, which we reached just off the coast. As we



Mirage Enthusiasts Blogs



One Team For Life

turned south, we went to max AB and unloaded to rapidly accelerate through transonic in a descent to between FL300 and 350, smoothly pulling the nose up to hit the 500 KIAS supersonic climb profile. The aim then was to maintain a steady, shallow climb holding a constant 500 KIAS, with Mach progressively increasing from around M1.2.

Everything was proceeding smoothly, with the coastline moving rapidly behind us on our right. My number 2 was slowly inching ahead of abeam - slightly better performance from his aircraft. Somewhere a little past Coffs Harbour, we had reached FL490 with a Mach of 1.9, still climbing and accelerating, when there was an almighty bang!! A couple of expletives then a radio call (in the blind) to No 2. I could hear nothing on the radio or intercom due to the noise level. I took the standard immediate action for all Mirage emergencies - "Cut the AB and slow down". I simultaneously popped the speedbrakes and lowered the nose, while having the presence of mind to leave the throttle at full dry - recalling this was mandatory above M1.6. We slowed relatively quickly, so I pushed the nose down further and headed for what I estimated would be a good recovery altitude of 10,000 ft.

By this time, my No 2 had rejoined with us and was following us down. Poor old Dave, in my rear seat didn't know what was happening. He could hear nothing, and while I was somewhat protected by the front windscreen, Dave had copped a load of 500 knot perspex shrapnel. The clear ejection blast shield between front and rear cockpits had been sheared right off. Both of Dave's visors were shattered and he suffered some minor cuts to his face. Once he had gathered his senses, he saw that we were in a steep dive, so he pulled back on the stick. I was very relieved to feel this and pushed it back forward. This, in turn, gave him some reassurance!

We eventually levelled off at 10,000 ft and 280 to 300 knots seemed like a comfortable speed, with remaining shards of canopy perspex wobbling in the breeze either side of me. We still had about 150 nm to go, and fortunately fuel wasn't a problem. I jinked in a bit closer to the coast and continued south for home base. The noise still prevented radio/intercom reception, but fortunately I had my No 2 to look after things, with hand signal comms.



Mirage Enthusiasts Blogs



One Team For Life

We didn't discover until after landing that both our face blind handles had been torn out of their housings and were draped over the top and rear of the ejection seats. The seat pan handles would have worked, but in all likelihood, the flapping face blind would have snagged the drogue, necessitating a manual separation. Cockpit indications were all normal, but the engine had suffered significant damage from ingested perspex, unbeknown to us at the time. I positioned for a straight-in approach onto runway 30, hitting the numbers and hoping for a good brake chute, as I didn't want to go anywhere near the barrier!

After this incident, all duals were Mach limited for some time, and ugly strengthening strips were added to each side of the canopy.

A photo of Dave, with his facial after effects, appears in a 77 SQN history book - "Swift to Destroy", I think. Our bird, A3-102 (Daphne) is now on display at Fighter World.

There was discussion afterwards as to whether an incident such as this caused the loss of a course student (Ken Dale) during the syllabus Mach run off Williamtown in 1971, in another dual A3-109. From memory, the aircraft simply disappeared from radar during the acceleration, with no radio calls and no wreckage ever found. I was interested to read in Pete Taylor's first Mirage book that A3-105 suffered a similar canopy fail at Mach 2 on its second acceptance test flight in 1967. It appears that whatever corrective action was taken after that

first incident was ineffective, which may have contributed to the loss of A3-109 and Ken Dale?



Mirage Enthusiasts Blogs



One Team For Life

17 Nov 23. Marty Susans

Those damn Dual canopies caused much grief in the RAAF, and presumably in other Air Forces. Seemingly a poor design which was not up to the task, Dual canopy failures created several dangerous incidents which perhaps we didn't take seriously enough.

From memory, we had four Dual canopy failures, with possibly a fifth off the coast of Willy. Most were associated with high Mach numbers, but speed was not the only factor.

This was my experience -

In Dec '69, I was tasked to fly the 3 Sqn dual, A3-107, from Butterworth to Tengah to convey the Commander FEAF, an RAF Air Vice Marshal (Sir Neil Wheeler as I recall) for Christmas drinks with the troops at Butterworth. Flight Sergeant Bushy Smith ENGFIT was in the back seat to turn the aircraft around at Tengah, and Pete Ring was in company in the 75 Sqn dual as a spare.

We were aware that there had been some dual canopy failures in the RAAF, and some restrictions were in place, so we selected a flight profile which minimised the pressure on the canopy for this VIP flight. Nevertheless, during the climb out from Butterworth at 350 kts, the canopy suddenly disappeared and there was silence from the back seat. No longer having mirrors to see behind, I feared that Bushy might have inadvertently snagged a black and yellow handle. However, after slowing down, Ringo reported that my back-seater was still there, minus his helmet, covered in blood, and with his seat drogue chute streaming behind the fin.....Right!

We tippy-toed back to base landing off a straight-in approach, and I was greatly relieved when the drag chute grabbed on deployment, as I did not relish the thought of a barrier engagement with two open cockpits. Bushy was assisted from the back seat with his face covered in dried blood from perspex cuts, but otherwise unharmed, and very relieved to be back on firm ground.



Mirage Enthusiasts Blogs



One Team For Life

The CO, Ted Radford, was none too pleased when an RAF Dual Lightning arrived a couple of hours later with his nibs on board.

It was clear from the perspex fragments on the floor of the cockpit that the canopy had imploded despite our precautions; but why had the canopy frame left the aircraft? The gunnies, lead by Dave Penna, soon discovered that the canopy jettison cable had been impacted by perspex debris, triggering a jettison. Several months later the canopy frame was recovered from the ulu, confirming our analysis of the incident.

Thank goodness that this incident did not occur over the middle of the peninsula on the return flight to Butterworth with the 2 Star in the back!

I met up with Bushy many years later - he was still smiling!

17 Nov 23. Bob Richardson to Geoff Talbot/Max Loves.

I wanted to ensure you both saw Marty's report below of yet another dual canopy failure. (And as I recall Max you were involved in the final dual acceptances from GAF, along with Stu Fisher? Was he flying the GAF test where the canopy failed?)

I hadn't heard of the below incident...

17 Nov 23. Geoff Talbot

Greetings all -

Yes. we (GAF) had a canopy failure – I think, on the first production dual from Avalon. The pilot was Stew Fisher, and the back seater, Noel Jenkinson. All systems were normal and Noel as a Flight Test Engineer, having overseen/organised all of the single cockpit aircraft flight testing, had duly earned the right for a back seat production flight in the first two seater. All went well until at about M1.3-4, the canopy exploded – apparently both



Mirage Enthusiasts Blogs



One Team For Life

inwards and outwards. There were no injuries. They slowed up and RTB. From memory, the aircraft internals were fairly well contaminated with granulated perspex. There were no injuries. As a result, a speed /altitude restriction was imposed until the problem was rectified (a much strengthened canopy).

Further from Geoff Talbot

The following is the sum-total of my knowledge of Mirage canopy failures. Most of them have just come to light (by Marty Susans).

The in-service failures were not known until now. Following the GAF production failure, a speed/altitude restriction was imposed and observed until the canopy was strengthened by GAMD, when normal ops were re-introduced. Somehow, I doubt that there were five

failures overall, if there were we would have heard much more about the problem and suffered public damnation of the aircraft!