

Almost a Fighter Pilot

All of us have dreams which remain unfulfilled. That's just the way it is. Many of us have imagined ourselves as cricket stars only to find ourselves working a desk job, others may have wanted to become filmstars but ended up doing something utterly unglamorous. I must confess, I have been lucky. I have always, always, dreamt of being a fighter pilot and though I never had the skills (awful in Mathematics !) to join either the Air Force or the Naval Air Arm, I have somehow managed to fly more than a dozen sorties in some of the greatest fighter jets ever built. My friends say I have subverted journalism to live out a dream. Others say I have managed to produce pretty interesting television documentaries. I think the truth lies somewhere in between.

The first time I was invited to fly on fighter jets was during the Kargil war. Mirage 2000s no less. The Army, it seems, had been stealing the thunder as far as press coverage was concerned, and the Air Force, quite rightly, felt that it was time to explain the role played by their aircraft in India winning the war. But, like so many things, the Air Force proposal had to do the rounds of the Defence Ministry. Finally, the late Pramod Mahajan, then the Information and Broadcasting Minister, pushed through the file after convincing Defence Minister George Fernandes that this should be considered a priority as well. Pramod insisted a Doordarshan crew must also be accommodated on sorties and, sure enough, a DD cameraman flew to Adampur with us where the Mirages had been forwarded deployed. Clueless about the size of fighter cockpits, he landed up with a gigantic video camera more appropriate for the cargo hold of an Il-76 ! And so, that was that. We



Vishnu Som in cockpit of F/A-18F Super Hornet at Farnborough 2006.

ended up getting what was a world class exclusive - three sorties on Mirage 2000s, the first of which was on 31 July 1999, a few days after the war officially ended, but bang on my birthday. Talk about a birthday gift.

And as it turned out, this wouldn't be the last time I got a ride on a fighter. In fact, in the last 11 years since my Mirage flights, I have flown multiple sorties, often on different variants of the the F/A-18 Hornet, the F-16 Falcon, the JAS-39 Gripen, MiG-35, MiG-29, the Indian Navy Sea Harrier and prototype of the Su-30 MKI. Many of these sorties featured on my documentary series, the *Jet Set* which aired a few years ago and other news reports on NDTV 24x7.

Different people have reacted differently to my accounts of these flights. Some Air Force professionals view these as the joyrides of someone who is patently not a pilot and ask 'What does he really know ?' Others, though, are curious to learn of my experiences, often about my interactions with the executives and test pilots of some of the world's leading fighter aircraft manufacturers. While I am not a pilot, aviation is a serious interest and so, these experiences are a little bit more than the

stories of someone in the backseat of an 80 million dollar roller coaster though, admittedly, far less profound than what a fighter pilot would have had to offer.

When executives at SAAB-Gripen phoned me recently, I thought they would be inviting me to a press conference linked to the Indian Air Force's gigantic 12 billion dollar M-MRCA tender. All the leading contenders brief the press regularly on developments on the platforms which they have pitched to the IAF. Instead, I was asked, "Vishnu, we were wondering if you would be

interested in flying a sortie on the Gripen NG prototype." Straight to the point. Typically Swedish. No unnecessary talk about the Delhi weather. It took a moment for this to sink in. Quite clearly, this would be quite special, different in a sense from what I had done in the past. I was being offered a sortie on the only flying prototype of a state-of-the-art next generation fighter, a valuable asset not just for SAAB-Gripen but a national asset for Sweden. In a few weeks I would be the first and, thus far, the only civilian, to have flown on the jet.

In fact, by the time the visit to Linköping in Sweden ended, I had been allowed to land the jet twice from the rear cockpit in addition to flying the prototype through a series of high g manoeuvres at a safe altitude. I can hear the sceptics saying "Oh, be serious." Its true, I assure you ! Whats more, I was a witness to supercruise, the ability of this fighter to fly beyond the speed of sound without the use of the afterburner.

The pilot in command of my flight, Fredrik Munchler is Gripen's demonstration pilot, someone who clearly loves his job. At the apex of a loop after a 5 g vertical pull-up, Fredrik, in that typical matter-of-fact Swede way



Nearer camera, Gripen NG prototype with Vishnu in the backseat, forming with Gripen D over the Swedish countryside.

of talking tells me, “It is true. They pay me to do this.” What I wouldn’t do to trade jobs !

Anyway, this wasn’t the first time that I had flown on the Gripen. A few years ago, I had flown out of Linköping, the Gripen development facility, in the JAS-39 C/D but the difference in the two jets was obvious to even me, a novice. With its new GE414G engine, the Gripen strains at the leashes on the runway, edging forward despite the brakes and blasts off, more than takes off, once the brakes are released. In handling too, the jet is care-free pushing the 9 g threshold quite easily. Fredrik tells me the Gripen NG can easily be touted a 10g fighter, since it can pull those loads without any real difficulty.

Supercruise on this flight took place at about 23,000 feet. Our jet, carrying 2 IRIS-T wingtip-mounted air-to-air missiles accelerated through the sonic barrier using afterburner for just a few seconds. Fredrik quickly came off the heater and we were super cruising, which was totally undramatic. Fredrik tells me he can sustain this till fuel runs out at this altitude and can travel faster without burner if we are at a higher altitude. Denying that super-cruise can’t be achieved with a warload, Fredrik says they do it all the time with 4 air-to-air

missiles, a pretty standard fit for air superiority operations. He also points out the NG prototype is “overweight”, and once it loses a few hundred kilos, the supercruise performance of the fighter will appreciably improve.

After a sortie lasting about 45 minutes, in which we also flew in formation with a JAS-39D which was filmed by camera people on an SK-60 trainer (see picture above) Fredrik and I turned away for some low altitude runs after which he handed me controls. Throttle and stick response on this fighter is instantaneous and the set-up of the man-machine interface in the cockpit is truly impressive.

The left hand MFD had been configured to provide a repeat of the pilot’s head up display symbology over a wide-angle video underlay of the skies and terrain around us. SAAB’s artificial horizon symbology is quite distinctive and extremely intuitive. The aeroplane you are flying is figuratively placed at the centre of a hemisphere along a dotted line if you are in straight and level flight. Once you pull up, the symbology changes and the dotted line forms a reverse ‘U’ as you progressively climb. On top of the ‘hemisphere’ a large ‘X’ appears atop the pole and if you fly down, the dotted lines form a ‘U’ till you pass the straight

dotted line which you align yourself to if you want to regain level flight. Its tough to explain in words but very easy to understand when you see it.

Soon enough, it was time to land and Fredrik asked me if I was confident enough to land the jet. He had stick and throttle priority up front so there was no real danger. Engaging ILS, we flew towards Linköping in pretty marginal weather. With no HUD at eye level, I kept my focus squarely on the left hand MFD where a targeting cue linked to the ILS appeared. With gentle inputs on the sensitive control stick, I had to place the velocity vector (essentially the plane) directly over the targeting cue and keep it there. As we lost altitude progressively, and turned into finals, Fredrik engaged autothrottle and, in a little while, lowered the undercarriage prompting a change in the HUD symbology. The targeting cue became a tiny dot now and the runway appeared in the distance, the threshold marked by a small U. Steering inputs needed now were more pronounced to keep the cue at the centre of the velocity vector. With a few hundred feet to go, the cue disappeared and Fredrik told me to place the velocity vector on the spot I wanted to touch down. He also repeatedly told me to keep looking down at the MFD, not get distracted by the terrain

coming up on all sides ! Now gliding over the runway, I attempted to flare to which Fredrik said `don't flare, just touch down" which I did. Touchdown was at about 140 knots. Fredrik said "mine" and manually engaged brakes, the Gripen coming to a halt in a few hundred metres.

It was as simple as that, an incredible feeling to do the real thing, for someone who spends hours landing jets on Microsoft Flight Simulator X on my home PC! But the Gripen sortie was not over yet. We refuelled in a few minutes without switching off the engine, returned to the runway and blasted off again for another sortie, quite similar to the first one.

There are lot of interesting features of the Gripen NG. For me, the lasting impression after this flight was the simplicity of its operations. For an untrained pilot to be able to land a fighter with such ease clearly indicates just how easy it is to fly the jet, a factor that the Gripen team says could really help out young, inexperienced pilots.

This wasn't the first time that I had seen the evolution of a fighter jet from an earlier variant. I have flown three sorties on different variants of the F-16, a Block 30, Block 50 + and Block 60 AESA-equipped bird.

My flight on an F-16 Block 30 was, in a sense, a sign of the changing strategic relationship between India and the United States. I was invited to fly with the US Air Force's *Black Widows* squadron at the Hill Air Force Base near Salt Lake City in the state of Utah. Way back in 1982-1983, members of the *Black Widows* squadron had trained pilots of the Pakistan Air Force to operate the jet. Now, after all these years, an Indian journalist was invited to fly the same jet at the same base at a time when the US is pitching a variant of the same fighter to India. How times have changed !

My pilot for the sortie Colby Edwards, call sign 'Thor', asked me what I wanted to see. Aware of the stunning performance characteristics of early generation F-16s, I told him I would like to "turn and burn". We took off at about 240 kilometres per hour, immediately climbing into a Vertical Charlie pushing 7 g, a truly exhilarating ride. In moments,

we were above a test range, one of the largest in the United States.

The cockpit of the Block 30 is very basic, mono-chromatic displays in MFD which are small in comparison to the large, increasingly touch-screen MFDs that one comes across in contemporary fighters. Rear seat controls had been disabled though, so I did none of the flying.

It was time to return home soon enough though - we had clearly been burning a lot of gas with all these tight manoeuvres and bursts of acceleration. As we headed back, we flew through some stunning valleys with some outstanding ski slopes.

A few years later, I would have an opportunity to fly on a UAE F-16 Block 60 at the Bangalore Air Show and if I was asked to describe it in two words, it would have to be "video game." The difference between this jet and the Block 30 fighter I had flown earlier could not have been more stark. This was, essentially, a brand-new jet. Equipped with the APG 80 AESA radar, the Block 60 features sensational sensor fusion, something showcased to me on the sortie. There are a lot of things that the Americans have going for them in the M-MRCA race and the fact that they have fully operational, integrated AESA radars is one of them.

On this sortie, my pilot set up the right MFD to display a comprehensive tactical picture by interweaving the air to air and air to ground picture, essentially tracking targets both in the air and on



After his flight, Vishnu and Lockheed Martin test pilot. the land. The left MFD was slaved to the FLIR system. During the flight, we picked up an F-18 on radar heading towards us on a reciprocal heading. In moments, we were able to track the jet on the FLIR well before it was within visual range. Absolutely incredible and all, fully developed technologies in service with an Air Force.

For all the differences which have traditionally existed between Western and Russian aircraft, there are areas of great commonality. Unlike in the past, where crew comfort and cockpit ergonomics were not really a priority, the new generation MiG-35 offers an extremely modern, fully hands on throttle and stick (HOTAS) cockpit with MFDs of the same quality as the best of the Western fighters.

My MiG-35 sortie at the Bangalore Air Show came a week after I had flown a sortie on the MiG-29UB trainer at the Gromov Flight Centre at Zhukovski near Moscow.

About a day or two prior to the show beginning, MiG got in touch with me



Vishnu in the backseat of a UAE Air Force F-16 Block 60 at Yelahanka.



Buddy-buddy refueling of a Super Hornet pair.

confirming the possibility of a sortie. I didn't want to look a gift-horse in the mouth particularly since Ratan Tata's upcoming sortie in an F-16 at the Bangalore Air Show had generated enough attention in the media.

At the onset, let me just say that while the MiG-35 sortie was a high, having the opportunity to sit down, eat lunch and have a couple of drinks with the great test pilot Pavel Vlasov (a Hero of the Russian Federation) and Mr. Byntin, the Chief Designer of the MiG-35 was wonderful. In fact, I had had the opportunity to meet Pavel in Moscow as well, also at a lunch shortly after he flew the MiG-29KUB at its media debut. Incidentally, the actual first flight of the KUB of which I have footage took place two days prior to the media debut so the Russians, no novices, knew the thing flew before they brought in the international media !

Anyway at Yelahanka, my pilot would be Mikhail Belyaev who spoke reasonable English though with a heavy accent. We both realised the importance of keeping our conversation to a minimum ahead and during the flight so that we could get the pre-flight basics right. Later on, I would discover that Belyaev was an absolute delight, supremely confident as a pilot with a sense of humour to match.

Before the flight though, there was a small matter of the flight overalls. I am 6'2" and the Russian flight overalls didn't quite fit so we went to plan 'B' and I pulled out my own overalls which Boeing had given me after an F-18 sortie. As we approached the *Fulcrum*, a senior Communications person at Boeing (whom I have worked with extensively in the past) came up to me a touch irritated. "Vishnu, you'll fly just about anything won't you?" she asked. She had obviously noticed my Boeing

flight overalls (which didn't of course say 'Boeing' anywhere). I let go a sheepish grin. She already knew the answer.

We were now next to the *Fulcrum* and I was given my bone dome and a cloth head cover (typically Russian) just before I got into the jet.

The Russian pilots helmet is the real deal ! This one was compatible with the IRST system. It was considerably more heavy than the American/French/British helmets I have worn in the past. It was also much more comfortable. In some of the American helmets, the sun visor was attached to the outside portion of the helmet. On the Russian ones, it is located inside ... and you need to push a release on either side of your eyes with both your hands to bring it down. It fits perfectly with the oxygen mask and the clarity is perfect. Belyaev later told me, "We take our helmet to Americans and tell them 'this is helmet for fighter planes. Your helmet meant only for small scooter!'" I must also confess, the Russian flight gloves (black leather) are trendier than the heat resistant and loosely fitting American or European flight gloves I have worn elsewhere !

The MiG-35 cockpit is considerably larger than the F-16 cockpit. The first thing I noticed on being strapped in was the quality of the cockpit. This cockpit was far removed from what one had seen in Russian fighters in the past. There was no clutter in the cockpit and the new, broader canopy on the MiG-35 gives you a roomier feel as compared to the MiG-29 UB I had flown on earlier. There are 3 huge MFDs in front of the pilot and a small one that serves as the HUD repeater. Forward vision on the HUD repeater, clarity and depth perception was outstanding. I feel the unit was far better than similar systems on some of the other fighters.

Prior to the flight, Mikhael asked me what I wanted to do. I was consistent with what I had told the other pilots - 'Mikhael, the F-16 pilot took me to 8 g. Can we do the same?' Prompt came the reply - 'No problem, we do 8g, Cobra and tail slide. OK?' I could only mumble a muted "da" in reply.

Anyhow, engine startup was like the other jets. I had been briefed on the emergency O₂ system and the position of the intercom switch. As we rolled down the taxiway, my focus was on the MFDs in front of me - the INS display on the extreme right, engine parameters in the centre and the artificial horizon, AOA, airspeed indicator and the g meter on the extreme Left. I wanted to use the metric system for my airspeed and altitude and this had been set for me with a button push prior to the flight.

The take off run on the MiG-35 feels like a 747 compared to the F-16! It feels slower, much more refined and the difference between a single engine and two engines is perceptible. Mikhael veered left at low altitude on take off and then went vertical, did a half loop and rolled out into the direction of our heading. We had done about 4.5 g but I felt almost nothing. The oxygen flow in the MiG-35 was outstanding, very easy to inhale, no real pressure on the lungs.

Mikhael then went into a lengthy explanation of the INS system pointing out our heading and some of the symbology on the unit ... he then said 'You pilot, Vishnu' and I took control, did a sharp bank to the right which he corrected by telling me to head in the direction of the indicator on the INS display. A short while and a few loops later, Michael asked if I was interested in seeing a *Cobra* manoeuvre. No guesses on what my answer was. There is a button on the Master Caution panel on the front right on the pilot which says *Cobra*. That button has to be pushed before the manoeuvre can be done since the angle of attack limiter has to be overridden. What made the *Cobra* manoeuvre all the more enjoyable was the knowledge that this was a non-TVC aircraft. Mikhael said "Cobra now" and yanked hard on the stick. The nose pitched right back and then he pushed the nose hard forward as we briefly entered a negative g scenario.

Like in the case of the tail slide, the ground rushes at you awfully quick but there is immense power in this jet and we soon leveled out. At this stage Mikhael demonstrated the stability of the jet by violently moving the stick around its axis with absolutely no impact on the forward motion of the jet.

Over the next several minutes, we pushed some serious 'g' going right up to 8.2 g for which the Russians later gave me a certificate. With fuel running low, we decided to do a 'touch and go' and land immediately afterwards. As we lifted off after touching down, Mikhael decided to show off - plain and simple. He said 'Ok Vishnu, now we do military style landing' so he yanked hard and left, gaining altitude as we flew parallel to the runway in the opposite direction. We pulled into a violent 6 g left bank, lowering undercarriage and levelling out pretty much on top of the runway before making a perfect touchdown albeit at considerable speed ! It was brilliant, the most incredible landing I have experienced, the end to a fantastic ride on the Russian top gun.

My first experience with the F/A-18 was when I personally witnessed, over a period of a week, the end result of Hornet bombing runs on the outskirts of Kabul in 2001. We were camping in a bombed-out cement factory on the outskirts of the Afghan capital in a place called Charikhar. Kabul was still under the control of the Taliban and air attacks targeting the Bagram Air Base had just about begun. The base was a few kilometres away from where we were staying and every evening at about 5 pm, Hornets operating off the deck of the US carriers would come in for high altitude laser guided bomb drops and so every evening, almost on the dot, we would see the outline of F-18s flying very high, tossing bombs, a dust cloud on impact, followed by the sound of the impact.

One of the pilots involved in those early operations was Steve Walborn, callsign 'Wimbo,' whom I had the pleasure of flying with in a Hornet quite a few years later. This was from the US Naval Air Station in Lemoore in California, one of the biggest facilities of the US Navy. This base supports hundreds of strike aircraft of the US Navy



Cheers! Vishnu waves from backseat of US Navy Super Hornet.

deployed on aircraft carriers in the Pacific ocean. At any one stage there are more than 100 fighters at this base, many of them F-18 Super Hornets.

My sortie with 'Wimbo' in the Super Hornet was across a test range over the Sierra Nevada mountains in California. Coincidentally, the Hornet I flew was the very same Hornet I had flown in at the Farnborough air show a year earlier. There would be two other Hornets which would formate with us, one of which would refuel us mid-air. But before refuelling, Wimbo showed me a few things which aviation freaks like me dream about - two jets going head to head at a closure rate of a thousand knots before turning hard to engage each other in mock air combat.

Buddy-refuelling the big jet was really interesting. Inching up to the refuelling drogue released off the centre line tank of the refueller Hornet and then engaging the drogue even in a gentle turn was spectacular to watch from the rear seat..

Of all the fighters of this generation I have flown on (Generation 4 plus), the F/A-18 Hornet is the most battle-tested platform. APG-79 AESA equipped versions of the Super Hornet have been doing duty off American carriers for a few years now often as force multipliers for non-AESA equipped birds. This is a tough as nails, fully evolved jet which sets new US Navy benchmarks for reliability and ease of maintenance.

For me though, the highlight of the sortie turned out to be something utterly unexpected. As our formation headed back towards Lemoore, one of the pilots called out "Raptor, Raptor." I asked Wimbo what "Raptor" meant. He laughed and replied "You heard it right Vish. It means F-22." And then, to my

left at about 11 o'clock, I saw the sinister shape of an F-22 stealth fighter as it did a gentle victory roll and went on its way. Thats right, I got intercepted by a stealth fighter, possibly another first for an Indian civilian wannabe pilot! Nobody in the formation seemed to know what was lurking, certainly not my AESA equipped bird - we had the radar on alright ! Lets hope the Sukhoi T-50 FGFA works out OK for the Indian Air Force ! And if it does, then rest assured, I will be waiting for that phone call from the boffins at Sukhoi if not the Indian Air Force. Lets see if I can continue to ride my luck !

Vishnu Som

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(Vishnu Som has flown with Air Forces around the world, the UN in Congo, the Northern Alliance in Afghanistan and Chief Test Pilots of several fighter manufacturers. He has catapulted off US Navy carriers and has experienced arrested landings as well. He has survived a missile attack when the IAF Mi-8 he was travelling in North Gujarat was targeted by Pakistani SAMs shortly after the Atlantique episode in 1999 and been winched off the deck of an Indian Navy submarine. He has also flown extensively in the Siachen area onboard Indian Navy Cheetah helicopters.)

