

Pulwama - From Bluster to a Whimper

Immediately after the Pulwama suicide attack on 14 February 2019, in which a young Kashmiri lad blew himself up killing 40 Indian para-military troops, a cacophony of accusations were hurled against Pakistan. In a purported phone call, the caller claiming to be a representative of the Jaish-e-Muhammad (JeM) – an internationally proscribed terrorist organisation – was said to have owned up the bombing. Calls for revenge grew by the hour, and it was not long before the Indian Prime Minister Narendra Modi allegedly discovered incriminating links and vowed to teach Pakistan a lesson. It seemed that Modi saw punitive action against Pakistan as a key to a landslide victory in the upcoming elections and was, thus, completely blinded to the dangers of escalation of hostilities between the two nuclear-armed neighbours. In all likelihood, Modi also believed – or was made to believe – that Pakistan did not have the gumption to take on the might and stamina of the Indian military, seemingly buttressed by its madcap media and the rightist supporters.

The Indian repression in Kashmir has seen no let up for over seven decades, with the last ten years having been particularly bloody. Thousands of killings, mass arrests, rapes, kidnappings, use of pellet guns to blind and maim protesters, and gross human rights violations have been the Indian government's despicable methods to respond to the Kashmiris' right of self-determination. That the right has been enshrined in numerous UN resolutions cuts no ice with an intransigent India. It was in the backdrop of these circumstances that 20-year old Adil Ahmed Dar, who had been humiliated, tortured and illegally detained, decided to take law into his own hands and square off with the so-called law enforcers. Driving a car packed with about 80-100 kilos of explosives, Dar rammed a bus laden with policemen of the Central Reserve Police Force, killing 40 of them. A phone call was opportunely received by Indian intelligence agencies soon after, claiming that JeM had carried out the bombing. The Indian media stirred up a storm in no time, and every Indian bayed for Pakistani blood. Hints of an imminent 'surgical strike,' by India – fake and farcical though the previous one in 2016 had been – began to make the rounds. The die had been cast, and there was no going back. India failed to provide evidence of Dar's contacts with anyone in Pakistan, either by way of tapped phone calls, physical contact with any Pakistani agents, or material found on his person or from his home indicating any complicity. All that was known about Dar was that he was a home-grown Kashmiri youngster with no outside contacts whatsoever, and that he had been radicalised by the spate of brutalities by the Indian law enforcing agencies. Acting as the judge, jury and executioner, and pandering to the frenzy created by the irresponsible media, Modi declared that Dar had been trained and supported by Pakistani agents. Retribution was, thus, the only option to deter any more 'mischief' by Pakistan, Modi blustered. It was made clear that India would decide the time and place to administer exemplary punishment to Pakistan.



At 0130 hours (all times PST), on the morning of 26 February, a flight of six IAF Mirage 2000 configured for strike, along with two tied escorts and another four of the same type as reserves, took-off from their home station at Gwalior. Escorted en route by several more Su-30MKI, the sizeable formation sneaked in from a south-easterly direction for a stand-off attack on a seminary at Jabba village near Balakot town, close to the international border. The

Mirage 2000s, which had taken-off from quite a distance, were supported by an Il-78 in-flight refuelling tanker. Two ERJ 145 'Netra' Airborne Early Warning and Control System (AEWCS) provided surveillance support to the strike package. At about 0245 hours, six Mirages carrying one 900 kg Israeli-origin Spice 2000 bomb each, lobbed them in the autonomous GPS-assisted delivery mode, and broke off immediately. With the bombs' stand-off range of over 60 km, there was no need to cross into Pakistani territory, as safety of their aircraft was of greater concern, than any qualms about international censure for violating Pakistan's airspace. In the event, the aircraft did ingress about 10 km into Azad Kashmir, ostensibly to drive home a point that India did not consider it as disputed territory. Traversing about 40 km, five bombs fell in a forested area, a few hundred meters from the intended target, and decimated nothing more than a few pine trees.^[1]

It was propitious that the bombs did not hit the seminary, as it housed a boarding facility for over 200 students aged 8-15 years. The seminary is one of thousands of similar facilities in the country where young children memorise the Holy Quran, a not uncommon practice amongst the faithful.

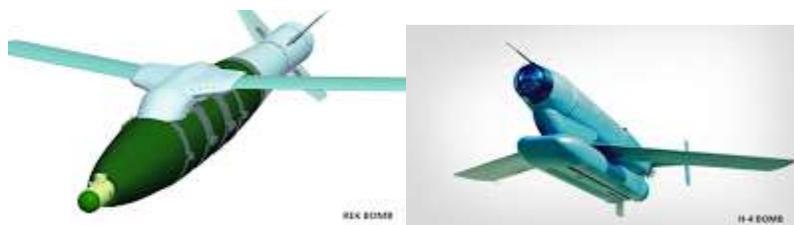


F-16 and JF-17 fighters on patrol were promptly directed to intercept the intruders, but were restrained by the prevalent rules of engagement from crossing over into enemy territory. Mercifully, there was no loss of lives or property at Balakot as the IAF mission had failed completely. There have been speculations about the cause of the failure, but the most plausible one was proffered by three members of the Australian Strategic Policy Institute (ASPI) viz, Marcus Hellyer, Nathan Ruser and Aakriti Bachhawat. The trio posited that there was a mismatch between the target elevation sensed by the GPS and the orthometric elevation (above mean sea level) as given on aeronautical charts. High resolution satellite images of the bomb impact craters provided by European Space

Imaging clearly show that all the bombs missed their targets by similar distances, and in the same direction, indicating a mission planning miscalculation. Apparently the orthometric elevation was in error (less than actual), causing all the bombs to overshoot. PAF's former Gp Capt Parvez Mahmood, who has extensive experience of interpreting satellite imagery, is of the opinion that, "determining a precise 3D point on Earth requires satisfying a lot of variables, so errors similar to the one in the Balakot strike are not unusual." The option of delivering the bombs in the electro-optically guided mode was not possible due to complete cloud cover and heavy rain in the area for several days. In any case, it was a riskier option as the bombs had to be guided through data link all the way till impact, and would have entailed IAF aircraft getting into the lethal range of Beyond Visual Range (BVR) missiles of PAF's interceptors.

Immediately after the failed Indian strike, Pakistanis clamoured for revenge as expected, and Prime Minister Imran Khan duly promised it. The dilemma of escalation weighed heavily on the political and military leadership, and there was consensus that the response had to be as measured and controlled as was possible. Even the number of bombs planned for delivery were to be in equal measure. The PAF was well-prepared for a whole range of targeting options, and it settled for a stand-off attack similar to the IAF's, with the important difference that it would be against military targets in the Poonch-Rajauri-Naushera Sector in Indian Held Kashmir (IHK).

The IAF stood guard on the night of 26 February when the PAF's riposte was expected. Extensive Combat Air Patrols (CAP) were flown by the IAF, with surveillance support from ground radars, as well as AEWCS. When the PAF did not show up till sunrise of 27 February, the IAF eased off from its highest alert state, and waited for the following night. A pair each of Su-30MKI and Mirage 2000I[2ii] were patrolling in IHK area. PAF's deception worked splendidly when its strike package of four Mirage 5PA/IIIDP of No 15 Squadron and two JF-17 of No 16 Squadron, duly supported by a big swarm of escorts and patrolling fighters[3iii] (a mix of F-16A/B and JF-17), cluttered the scopes of IAF's ground radars at 0920 hours. Working at the rear of the fighter package were PAF's SAAB Erieye AEWCS aircraft, and the DA-20 Falcon in which electronic warfare wizards sat ready with their arcane tricks.



Two vintage – but still quite capable – Mirage 5PA, each armed with one H-4 stand-off bomb[4iv, along with two JF-17, each armed with two Mk-83 Range Extension Kit (REK) bombs[5v, headed towards their respective targets in southern-western IHK. It was a bright and clear morning, with excellent visibility. Each Mirage 5PA was followed by its control aircraft, a Mirage IIID, which was to steer the H-4 after launch through data link, while the JF-17s' Mk-83 REK were to be launched in the autonomous 'fire and forget'

mode. With the H-4 having a range of over 120 km, and the Mk-83 REK having at least half of that, the bombs offered safety to the launch aircraft as these could be delivered from well inside own territory, and the aircraft could then break off. The Mirage IIID control aircraft, however, had to continue flying towards the target, refining the H-4 bomb's flight path till impact. The bomb can be steered with great accuracy, as the high resolution image of the target seen by the bomb's seeker head is constantly relayed to the control aircraft. Since the purpose of the mission was essentially to demonstrate that Pakistan had the resolve, as well as the capability of responding in kind, it was decided that there was no compelling need to pick the front door of a brigade commander's office, or the air shafts of soldiers' bunkers. General area bombing of open spaces in military garrisons near the Line of Control (LOC) in IJK was, therefore, agreed upon.^[6vi] It was expected that this 'abundance of restraint' would prevent mass carnage in the Indian military garrisons, which could otherwise lead to a chain of escalatory actions, and spiral into a very dangerous all-out war under a nuclear overhang.

When the PAF struck the garrisons within 36 hours of IAF's abortive air strike at Balakot, it came like a 'shot across the bow' and had the desired sobering effect on the Indian military commanders.¹ General Bipin Rawat, the Indian Chief of Army Staff, was forced to take a pause from his regular harangue about sorting out Pakistan. Unsurprisingly, he has not uttered any more threats to Pakistan, ever since.



PAF's approaching strike force had, meanwhile, rung frantic alarms on the Indian air defence radars, and patrolling fighters were directed to intercept them. Struggling to sift through the degraded communications environment, IAF fighters were unable to understand the instructions of their air defence controllers. An F-16 pair led by Sqn Ldr Hasan Siddiqui of the elite Combat Commanders' School, was vectored towards two approaching IAF fighters flying in an extended trail formation. The very long range at which the adversary aircraft appeared on the F-16 radar scopes suggested that these were big targets, most likely Su-30MKI. After sampling the target data and confirming valid firing parameters, Hasan let go an AIM-120C (AMRAAM)^[8vii] at 0936 hours, and promptly announced 'Fox Three,' the brevity code for an active radar-guided missile launch. Missile flight data fed back to the F-16 fire control computer in real-time, seemed to indicate that the missile had made its mark. Whether the Su-30 had met a violent end, or the aircrew had been able to kinetically defeat the missile, or the missile had simply timed-out and self-destructed, remains moot. Hard evidence by way of aircraft wreckage or details of aircrew casualties has not been available so far. Debris of the AIM-120C missile was, however, picked up and displayed on Indian television in a ludicrous tri-services press conference, as the IAF brass unsportingly complained about PAF using F-16s in what was actually a telling response to its own aggression.

Soon after the shoot-out, all hell broke loose in the Indian camp, as revealed by radar and VHF radio monitoring. In the ensuing confusion, the Terminal Air Defence Unit at

Srinagar Air Force Station reported a slow speed radar contact heading towards it. As leaked reports suggest, the contact was taken for a hostile Unmanned Aerial Vehicle, and the Chief Operations Officer ordered it to be shot down. At 0940 hours, an Israeli-origin Spyder surface-to-air missile was launched, but its target turned out to be an IAF Mi-17 V-5 helicopter belonging to the Srinagar-based No 154 Helicopter Unit. The helicopter crashed near Budgam, and six aircrew, along with a civilian on the ground, lost their lives in a case of morale-shattering fratricide.

Meanwhile, higher in the skies, the sole Su-30 remaining in the area flew helter-skelter, something quite baffling, considering that these are multi-crew fighters endowed with very powerful radars, and were armed to the teeth with an array of four R-77 active radar-guided BVR missiles, and four R-73 infra-red seeking dogfight missiles each. The Su-30 abruptly called 'Bingo' (low on fuel) and exited the area at high speed after only 25 minutes of flight, despite having an endurance of at least two hours while on routine air patrols. As per radio monitoring, it transpired that the two Su-30s had earlier failed to synchronise their data links and had been unable to provide any mutual support by way of radar data sharing.

In the ongoing fracas, the leader of the Mirage 2000 formation on patrol also called out that his airborne intercept radar, along with that of his wingman, had gone bust. It is noteworthy that the PAF F-16s had picked up tell-tale transmission 'chirps' of the apparently serviceable Mirage 2000 radar on their threat warning systems, a short while earlier. In the desperate situation that was developing, an IAF radar controller was heard calling out to the leader, "Confirm you can employ your missiles without the radars?" On hearing a reply in the negative, the controller pulled back the Mirage patrol well out of the active zone, and ordered ground scrambles to tackle a full squadron strength of menacing PAF fighters.



Five MiG-21 Bison of No 51 Squadron were, meanwhile, scrambled successively from Srinagar to boost up IAF's diminishing presence in the air. A senior pilot, Wg Cdr Abhinandan 'Nandu' Varthaman, was vectored towards a patrolling pair of PAF fighters. Flying low and masked by the Parmandal Range, Abhinandan had tried to pull a surprise by abruptly popping up from behind the hills. Apprehending PAF's snooping capabilities, Abhinandan had even switched off his Identification Friend or Foe (IFF) transponder. He also kept his radar controller posted about his ground position by reporting it in pre-arranged codes. However, Abhinandan remained oblivious of the fact that unlike ground based radars, the high flying PAF fighters had no line of sight issues, and could clearly see him on their radars. Before he could get his bearings right, Abhinandan's MiG-21 was hit by an AIM-120C missile launched from an F-16 flown by Wg Cdr Nauman Ali Khan, the Officer Commanding of No 29 'Aggressor' Squadron, and also the overall mission leader. Radio monitoring



revealed that Abhinandan (callsign 'Alpha One') was being frantically warned by his ground control about the danger he was getting into. “Nandu, flow cold; Nandu, if you hear me, flow cold,” is how a desperate female controller called the unresponsive pilot in high-pitched screams.^[9viii] Fully conscious, but half-deaf by then, Abhinandan soon ran into trouble. At around 1000 hours, he was seen to be coming down by parachute near Sandar village in Bhimber District, about five km from the LOC inside Azad Kashmir. Not unexpectedly, he got an unsavoury welcome at the hands of locals who had mobbed him. Later, during his brief confinement, Abhinandan stated that while he was looking for the target on the MiG-21 radar display, his aircraft was hit, and he managed to eject just as it went out of control.^[10ix]

It has to be noted that at no stage did Abhinandan claim shooting down an F-16, something deceitfully attributed to him after his repatriation by none other than the Indian Defence Minister, Nirmala Sitharaman. The false claim has been repeated *ad nauseam* by the IAF, and parroted by the Indian media in a furtive effort to redeem some respectability, after a disastrous showing by the world’s fourth largest air force. All four of the unfired missiles were recovered from the MiG-21 wreckage, and displayed to the media by the Pakistan’s Inter Services Public Relations, exposing Sitharaman’s brazen claim.^[11x]



Abhinandan’s effusive compliments to the Pakistan Army about being ‘a very professional service’ – as well as praise for the delicious tea served to him at a custodial facility, which he slurped with relish – earned him enough ‘brownie’ points in Pakistan. His countrymen, however, were evidently not amused by his capers. Abhinandan was discourteously seen off by the Islamabad-based Indian Air Advisor at the border crossing point of Wagah, and in a

frosty reception, was not even saluted by the Indian guards as he set foot in his country. It is not too far-fetched to imagine that on return from captivity, Abhinandan was presented with a *fait accompli*: claim downing an F-16, or face disciplinary action for ‘unpatriotically fraternising with the enemy.’ If such was indeed the case, it is possible that a straight-talking Abhinandan may be averse to towing the official line, and explains why the ‘hero’ continues to be hidden from the media and the public on grounds of ‘security.’

According to a report by senior staff writer Lara Seligman of the prominent US *Foreign Policy* magazine (4 April 2019), “a US count of the F-16s with Pakistan found that all the fighter planes were present and accounted for, and none of them were

missing.” The report clearly contradicts India’s claim that the IAF had shot down a PAF F-16. Seligman writes that, “the count, conducted by U.S. authorities on the ground in Pakistan, sheds doubt on New Delhi’s version of events, suggesting that Indian authorities may have misled the international community about what happened that day.” In the same report, Vipin Narang, an Indian-origin US associate professor of political science at Massachusetts Institute of Technology, and a member of the MIT Security Studies Program states, “As details come out, it looks worse and worse for the Indians. It looks increasingly like India failed to impose significant costs on Pakistan, but lost a plane and a helicopter of its own in the process.”

That the US has completely disregarded the frivolous Indian complaints also reinforces the Pakistani contention that the F-16s were used legitimately for self-defence. Soon after the Indian protest, the US State Department’s deputy spokesman Robert Palladino shrugged it off by curtly stating that, “as a matter of policy, we don’t publicly comment on the contents of bilateral agreements involving US defence technologies.” Later on 28 April, *The Indian Express* quoted a US official as saying, “Soon after we were informed by the Indian side about Pakistan using F-16 aircraft on February 27, we informed the Indians that we will not be sharing any information on the subject as it is a bilateral matter between US and Pakistan.” The apparent US indifference to the Indian complaint can also be seen as a clever marketing ploy for US military hardware, which had yet again demonstrated its cutting edge.

Rather than complain about PAF using F-16s in combat, the IAF needs some stern introspection about its questionable performance. Having the initiative, as well as some of the world’s best fighters like the Su-30MKI and Mirage 2000I in its inventory, it failed to deliver in a situation where it could have done what the plucky PAF actually did. The fig leaf of ‘technical asymmetry’ is now being shoddily used to cover up IAF’s embarrassing dysfunction at the operational and tactical levels. What the IAF needs to reflect on is the hard fact the PAF is well-trained, very vigilant, and endowed with a strong fighting spirit.

With zilch to show for, the proper course of action for Air Chief Marshal Birender Singh Dhanoa, the IAF air chief, would have been to step down. Instead, he has deplorably leagued up with the discomfited BJP government and the Bollywood-inured media, which continue to churn out nothing but lies and fanciful claims. It would indeed be a travesty if the IAF air chief gets dignified with the prestigious *Sarvottam Yudh Seva* medal, for ‘distinguished service of most exceptional order during war, conflict or hostilities.’



It is of great concern that Modi’s military advisors, particularly the Air Staff, were unmindful of the fact that grave risk of escalation is inherent in the cavalier use of air power, whose most significant attribute is its vast offensive capability. In the aerial encounter of 27 February, there was a high probability of several more IAF aircraft being shot down, given PAF’s definite edge in BVR air combat. The conflict was, thus, clearly fraught with the likelihood of tit-for-tat intensification to a point of no return. That the two nuclear powers were on the brink of a terrible catastrophe is something which needs serious reflection, especially for the initiator of the conflict – in this case Mr Modi, who seemed to have coolly run an election campaign on the wings of the IAF.

Tailpiece: The Indian Prime Minister’s whimper (quoted in *India Today*, 3 March 2019) that, “if we had the Rafale, things would have been different,” begs a question: “Why did you step in the ring if you weren’t prepared, Modi jee?” Clearly, the Indian Prime Minister miscalculated Pakistan’s resolve and ability to pay back promptly, and in kind.

- [1] The sixth bomb is said to have failed to release.
- [2] Upgrade of the older Mirage 2000H to the Mirage 2000-5 standard is underway, and not all aircraft had been modified by February 2019. Those aircraft utilised for the air combat mission were the modified Mirage 2000I armed with MICA missiles, while those used for bombing a day earlier included the unmodified Mirage 2000H.
- [3] Two pairs of fighters escorted the strike package, while four sections of 4-ship fighters each, patrolled along the LOC. The F-16s were armed with 4xAIM-120C-5 and 2xAIM-9M missiles, while the JF-17s were armed with 2xSD-10 and 2xPL-5 missiles.
- [4] The H-4 stand-off weapon consists of a 2,000 lb (900 kg) bomb integrated with an automatically deployable wing unit, an electro-optical guidance unit, and control fins.
- [5] The Mk-83 REK consists of a 1,000 lb (450 kg) bomb integrated with an automatically deployable wing unit, an inertial guidance unit aided by GPS, and control fins.
- [6] Targeting was planned in proximity of HQ 10 Brigade in Poonch and HQ 120 Brigade in Rajouri with 2xMk 83 REK bombs each, and in proximity of logistics and ammunition depots in Narian and Naushera with 1xH-4 bomb each.
- [7] In naval parlance, ‘a shot across the bow’ signifies a warning shot to a ship. It has been learnt that the Commander Northern Command, Lt Gen Ranbir Singh and Commander 16 Corps, Lt Gen Paramjit Singh had left after a meeting at Rajouri Brigade HQ only minutes before the bombing.
- [8] AMRAAM stands for Advanced Medium Range Air-to-Air Missile.
- [9] ‘Flow cold’ means avoiding a head-on, high rate-of-closure approach. By turning away, the missile’s no-escape zone can be drastically shrunk, and the missile can be defeated kinetically.
- [10] The downed MiG-21 tail number was CU2328. It was configured with four missiles under the wings, and an under-fuselage drop tank.
- [11] Clearly recognisable despite the considerable crash damage, these missiles included 2xR-73 dogfight missiles, and 2xR-77 BVR missiles.

Frequently Asked Questions

Q 1. What was the confusion about the number of downed IAF pilots on the day of the shooting?

A1. The soldiers of two co-located Pak Army Units, near the place of the IAF pilot's parachute landing, rushed to apprehend him. After his arrest, both Units reported to their higher formations, that a pilot had been captured. The higher formations in turn reported the same to GHQ, which understood the two reports to be independent, and hastily announced the capture of two pilots. The report was later retracted, but in the interim a lot of confusion prevailed.



Q2. The Indians claim that the missing rocket motor in the debris of one of the MiG-21 R-73 missiles (extreme right in picture) indicates that it may have been fired at the PAF F-16. The Indians claim that the missile's Guidance and Control Unit was later retrieved from the ground by Pak Army, and then displayed with the rest of the missiles to give the impression that it was actually found in the MiG-21 wreckage. What do you have to say?

A2. A keen observer of the MiG-21 wreckage would note that the rocket motor of the missile in question (rectangle 2) is stuck on the missile launcher rail, as it did not get dislodged on impact with the ground. As such, all the missile parts could not be put together and displayed. The pictures below make it quite clear that all parts of the missile were available in the wreckage.



[Courtesy Michael Sheldon and Kanish Karan of DFRLab]

Q3. What were the Indian senior officers trying to prove by displaying a part of the AIM-120C during a press conference?

A3. The Indian senior officers were trying to bring it to the notice of Americans that PAF had employed the F-16s and AIM-120C missiles in contravention of the purchase agreement with them. The Indians were apparently under the impression that these missiles had been purchased at over \$500,000 a piece only to shoot down non-existent Taliban fighter aircraft, and that their use against India was not fair play.



Q4. It was disclosed during the Inter Services Public Relations (ISPR) press conference that F-16s were not employed in the conflict. What do you have to say about that?

A4. Please refer to Q/A6.

Q5. Why haven't you disclosed the maximum range of the AIM-120C, as well as the ranges at which these missiles were fired? That would have made reconstruction of the air combat a lot more easier to understand.

A5. A simple answer is that I do not want to go to jail!

Q6. Since air combat is a highly technical subject, wouldn't it have been better to have a PAF fighter pilot alongside, during the ISPR press conferences pertaining to the conflict?

A6. I couldn't agree more on this point. I am reminded of the old adage, 'Fighter Pilots do it Better.'

Note: Revised 21 June, 2019. Some additional details of air combat included.
