

# INDIAN AIR FORCE CANBERRA OPERATIONS DURING THE 1965 INDO-PAKISTAN WAR

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Sixty years ago, the Indian Air Force (IAF) witnessed its watershed moment: a full-fledged war between India and Pakistan in September of 1965. Despite it having previously seen combat during the 1948 Kashmir War, UN Operations in Congo in 1960 and Operation Vijay in 1961, the war of 1965 would be the first where the IAF would be pitted against the Pakistan Air Force (PAF), a comparable force in terms of professionalism and capability.

Although several books have been published regarding air operations by both India and Pakistan during the war, including their respective Canberra bomber campaigns, there is a need to objectively analyse the role and contribution of the aircraft during the conflict. This paper aims to provide an overall perspective on the rationale behind the procurement of the English Electric Canberra, the expected method versus the reality of employment of the platform in combat, the lessons learnt, and how it shaped future utilisation of the platform.

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## BACKGROUND

### *The Need for a Jet-Bomber*

In the immediate aftermath of independence, India was offered the World War II surplus B-25 Mitchell and Avro Lancaster (by the USA and UK respectively), but the offer was not pursued.<sup>1</sup> During the 1948 Kashmir War, the Royal Indian Air Force (RIAF) was pressed into action, and the need for a bomber was reappraised.<sup>2</sup> The RIAF repurposed a number of C-47 Dakota transport aircraft into makeshift bombers, carrying out ‘blind bombing’, without any aiming method or equipment, by rolling out bombs from the aircraft’s cargo hold.<sup>3</sup> With the help of Hindustan Aeronautics Limited (HAL), the RIAF resurrected a modest fleet of Consolidated B-24J Liberators, by refurbishing a few abandoned airframes at Chakeri, Kanpur.<sup>4</sup>

In the early-1950s, the IAF underwent a wave of modernisation. The IAF realised that the refurbished B-24Js and makeshift C-47s would not suffice and there was a need to procure modern jet-powered bombers. The two options evaluated were the Soviet Ilyushin Il-28 [North Atlantic Treaty Organisation (NATO) reporting: ‘Beagle’] and the British English Electric Canberra. The USSR reportedly offered the Beagle at a fraction of the Canberra’s cost, but it was categorically rejected as being unsuitable for meeting the Indian requirements. Subsequently, India became the third largest operator of the Canberra, after the UK and the USA, procuring a total of up to 118 airframes from 1957 to 1975.<sup>5, 6, 7</sup>

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1. “India’s Reclaimed Bombers: The B-24 Liberator—Indian Air Force,” *Bharat-Rakshak*, <https://www.bharat-rakshak.com/iaf/aircraft/past/b24/>. Accessed on June 25, 2025.

2. Pradeep Barua, *The State at War in South Asia* (Lincoln: University of Nebraska Press, 2005), pp. 163–164.

3. n. 1.

4. *Ibid.*

5. Barry Jones, *English Electric Canberra and Martin B-57* (Ramsbury: The Crowood Press Ltd., 1999), pp. 128–130. ISBN 978-1-86126-255-4.

6. “IAF Aircraft Database—Types, Serial Numbers, Fates,” *Bharat-Rakshak*, <https://www.bharat-rakshak.com/indianairforce/database/aircraft/>. Accessed on April 27, 2025.

7. Lorne J. Kavic, *India’s Quest for Security: Defence Policies, 1947–1965*, 2019 reprint (Berkeley, CA: University of California Press, 1967), p. 104. ISBN 978-0520331594

The Canberra was considered to be obsolete by the time it entered the IAF's service. Interceptors such as the F-86E/F and the F-104A, both of which were to be operated by the PAF, were capable of intercepting the Canberra.<sup>8</sup> Bomber tactics were evolving as bombers either flew even higher and faster, or flew low level penetration strikes. Despite the evolving situation, the Canberra offered one crucial strength—the ability to carry large quantities of ordnance across an exceptional combat radius.<sup>9</sup>

The bomber-interdictor variant of the Canberra [B(I)58] was operated by three squadrons of the IAF: No.5 Squadron 'Tuskers', No.16 Squadron 'Cobras', No. 35 Squadron 'Rapiers'.<sup>10</sup> The Photo Reconnaissance (PR) variants (PR.57 and PR.67) were operated by the No. 106 Squadron 'Lynxes'.<sup>11</sup> No. 6 Squadron 'Dragons', operated a flight of Canberras in the maritime strike role from 1972 to some time until 1992. The Canberra had its own Operational Conversion Unit (OCU), known as the Jet Bomber Conversion Unit (JBCU). Pilots and navigator-bombardiers earmarked to fly the type were trained at the JBCU before being posted into operational squadrons. A Canberra squadron had 17 aircraft [16 B(I) aircraft and one Type Conversion Trainer], while the JBCU had four trainers and four B(I)s.<sup>12</sup>

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8. Satyajit Lall, *1971 Strategy, Campaign, Valor* (India: Sabre & Quill Publishers, 2024), pp. 8, 96 and 102. ISBN 978-8119509942. Also see <https://armstransfers.sipri.org/ArmsTransfer/CSVResult>

9. *Ibid.*, p. 96.

10. "No. 5 Squadron," *Bharat-Rakshak IAF Aircraft Database—Units*, <https://www.bharat-rakshak.com/indianairforce/database/units/5+Sqn>. Accessed on June 25, 2025. "No. 16 Squadron," *Bharat-Rakshak IAF Aircraft Database—Units*, <https://bharat-rakshak.com/indianairforce/database/units/16+Sqn>. Accessed on June 25, 2025. "No. 35 Squadron," *Bharat-Rakshak IAF Aircraft Database—Units*, <https://www.bharat-rakshak.com/indianairforce/database/units/35+Sqn>. Accessed on June 25, 2025.

11. "No. 106 Squadron Lynx," *Bharat-Rakshak IAF Aircraft Database—Units*, <https://www.bharat-rakshak.com/indianairforce/database/units/106+Sqn>. Accessed on June 25, 2025.

12. Inputs from Air Commodore Krishan Kumar Badhwar (Retd), AVSM, VrC. and from Group Captain Johnson Chacko (Retd). "Jet Bomber Conversion Unit (JBCU)", *Bharat-Rakshak IAF Aircraft Database—Units*, <https://www.bharat-rakshak.com/indianairforce/database/units/TTU>. <https://www.bharat-rakshak.com/indianairforce/database/units/JBCU>. Accessed on June 25, 2025.

**When India procured the Canberras, Pakistan sought to procure one squadron of light bombers from the USA, to keep up with India.**

The Canberra also performed Banner Target Towing (BTT) duties starting 1979, when No. 6 Squadron received six Canberra TT.418 aircraft for this role. No. 1 TTU (Target Towing Units) and No. 2 TTU which were flying the C-47s, were reequipped with the B(I)58 in June 1985 and November 1987 respectively. In 1992, all these were merged to form No.1 Target Tug Unit at Agra, performing BTT duties, until it was disbanded in 1997.<sup>13</sup>

***Pakistani Canberras***

When India procured the Canberras, Pakistan sought to procure one squadron of light bombers from the USA, to keep up with India. During a visit to the USA in 1958, President Ayub Khan, along with Air Vice Marshal (AVM) Asghar Khan, Commander-in-Chief (C-in-C), PAF, held meetings with American representatives to finalise the purchase. When presented with the B-57, AVM Asghar Khan considered it to be “obsolete” and was not enthusiastic about purchasing it (which interestingly mirrored the Indian assessment of the British Canberra), but the Americans insisted that it was the only type available for the PAF.<sup>14</sup> Pakistan purchased 26 new Martin B-57 Canberras (24 B-57B and 2 B-57C variants), all airframes entering service by 1960.<sup>15</sup>

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13 “No. 6 Squadron Dragons,” *Bharat-Rakshak IAF Aircraft Database—Units*, <https://www.bharat-rakshak.com/indianairforce/database/units/6+Sqn>. Accessed on June 25, 2025. “Target Towing Unit (TTU),” *Bharat-Rakshak IAF Aircraft Database—Units*, <https://www.bharat-rakshak.com/indianairforce/database/units/TTU>. Accessed on June 25, 2025. Also see Anchit Gupta, “The Partridge That Fooled the PAF: The IAF’s Aerial Ghost,” *IAF History*, May 20, 2025, <https://iafhistory.in/2025/05/20/the-partridge-that-fooled-the-paf-the-iafs-aerial-ghost/>. Accessed on June 25, 2025.

14 Yawar Mazhar and Usman Shabbir, *Eagles of Destiny: Volume 2—Growth and Wars of the Pakistani Air Force 1956–1971* (Solihull: Helion & Company, February 3, 2023), ch. 1, pp. 6–7. ISBN 978-1804510179.

15 *Ibid.*, Appendix: Tail numbers of aircraft that served with Royal Pakistan Air Force and Pakistan Air Force, p. 63. Chapter 1, p. 7. Also see <https://armstransfers.sipri.org/ArmsTransfer/CSVResult>

### *Operation Desert Hawk*

The Rann of Kutch is a salt marsh region that lies in the regions of Gujarat (India) and Sindh (Pakistan).<sup>16</sup> This region was mostly divided between Sindh province and the State of Cutch, but the British had never fully geographically explored it.<sup>17</sup> At the time of partition of India, Sindh opted to join Pakistan, while the Cutch State remained with India.<sup>18</sup> Pakistan had been using Kutch as a flashpoint with India, claiming 9,000 sq km of northern Kutch.<sup>19</sup>

**In January 1965, through Operation Desert Hawk, Pakistan stoked the Rann issue. The operation was live practice for the Pakistani military to gauge the level of preparedness and willingness of the Indian military to escalate hostilities.**

Pakistan pursued the Sindh dispute militarily, to support its position in the Kashmir conflict, which it planned to launch later. In January 1965, through Operation Desert Hawk, Pakistan stoked the Rann issue. The operation was live practice for the Pakistani military to gauge the level of preparedness and willingness of the Indian military to escalate hostilities. Pakistan was also observing how the USA and the UK would react and whether they would support Pakistan, despite it having instigated the conflict.<sup>20</sup>

Hostilities intensified between both India and Pakistan, but a British mediated ceasefire was reached, and both sides agreed for an International Court of Justice arbitration to the dispute on June 30, 1965.<sup>21</sup> During the Kutch standoff, IAF Canberras flew a series of photo recce sorties over the disputed

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16. "The Royal Talpurs and the Heritage of Sindh: Historical Background," Talpur.org, <https://talpur.org/>. Accessed on June 25, 2025.

17. Sarah Ansari, "Identity Politics and Nation-Building in Pakistan: The Case of Sindhi Nationalism," in Roger D. Long, Yunas Samad, Gurharpal Singh, and Ian Talbot, eds., *State and Nation-Building in Pakistan: Beyond Islam and Security* (London: Routledge, 2015), ch. 5, p. 102. ISBN 978-1317448204

18. Air Marshal Bharat Kumar, PVSM, AVSM (Retd), *The Duels of the Himalayan Eagle: The First Indo-Pak Air War (1–22 September 1965)* (Gurgaon: IMR Media in association with Indian Air Force, 2015), ch. 1, p. 13. ISBN 978-8186857274.

19. *Ibid.*, pp. 14-18.

20. *Ibid.*, and also see G. M. Hiranandani, *Transition to Triumph: History of the Indian Navy, 1965–1975* (New Delhi: Spantech & Lancer, 2000), ch. 3 ISBN 978-1897829721.

21. Kumar, n. 18, pp. 16-18.

area, despite very low visibility due to the pre-monsoon winds dispersing salt laden particles up to 4,000 ft in the air.<sup>22</sup>

As of 1963, IAF squadrons dedicated less than 50 per cent of their total flying effort towards training. That year, pilot intake had risen to 350 pilots and the total combat squadron strength increased from 23 in 1962 to 32 in 1965.<sup>23</sup> The sudden expansion forced the IAF to emphasise training over operational flying. Experienced pilots were posted to training establishments for extended tenures.<sup>24</sup> Little emphasis was given to night flying, with only the Canberra crews being fully operationalised for night flying.<sup>25</sup>

By September 1965, the IAF had 81 Canberras in service, of which 67 were in active duty, with the remaining under maintenance or at the Aircraft Storage Depot at Sullur (Coimbatore). From 1957 to 1965, the IAF had lost 8 Canberras for various reasons [five B(I)58, two PR.57 and one T.54].<sup>26</sup> One of these losses was due to a Pakistani F-86F on April 10, 1959, over West Pakistan.<sup>27</sup>

### *Comparing the Canberras*

The Canberra could carry up to 8,000 lb (3.82 tons) of ordnance, mostly bombs, but it could not perform bombing and interdiction roles in a single mission profile. The usual combat load for the Canberra (at least in the IAF) was 6x H.E. M.C. Mk.13 (1,000 lb.) bombs or 2x4,000 lb bombs. In the 'Pathfinder' role, the Canberra could carry up to 24x4.5" flares and/or 2x 2,000 lb Target Indicator (TI) bombs. The external, wing-mounted pylons

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22. Ibid., p. 19.

23. Ibid., pp. 40-41. Also see Anchit Gupta, "IAF's Combat Fleet: The 80-Year Journey to 42 Squadrons," *IAF History*, July 9, 2023, <https://iafhistory.in/2023/07/09/iafs-combat-fleet-the-80-year-journey-to-42-squadrons/>. Accessed on July 8, 2025.

24. Kumar, n. 18, p. 41.

25. Ibid.

26. "IAF, IA and IN Aircraft Losses Database", *Bharat-Rakshak IAF Aircraft Database—Accidents*, accessed July 8, 2025, <https://www.bharat-rakshak.com/indianairforce/database/accidents/listing.php?qacid=41&qt=TY>.

27. Mazhar and Shabbir, n. 14, ch. 2, pp. 22-23. "The Canberras in the 1965 War," *Bharat-Rakshak*, <https://www.bharat-rakshak.com/iaf/history/1965war/book/the-canberras-in-the-1965-war/>. Accessed on June 25, 2025.

could carry either a pair of 1,000 lb bombs or a pair of SNEB rocket pods, each carrying 18 Type-23 rockets<sup>28</sup>

But in the 'interdictor' configuration, the aircraft could carry only one gunpack (4×20 mm Hispano Mk.V cannons, 530 rounds per gun) under the belly. Only the rear bay could function with 2×1,000 lb bombs. The external loads remained the same. It took the ground crew around 48 hours to make a 'semi-permanent' modification on a single airframe. Aircraft would be prepared in advance for one of the roles, based on the squadron's war-time role and the number of gunpacks available in the squadron. The Canberra could carry wingtip drop tanks for additional endurance, but this reduced performance at high altitudes. These tanks were seldom used as there were limited tanks in the IAF's inventory.

The B-57 is an improved, licence-manufactured variant of the EE Canberra. Some of the key changes included replacing the Rolls Royce Avon engines with the Wright J65 engines, the 'goldfish bowl' canopy replaced with a tandem, fighter-style canopy, traditional bomb bays replaced with smaller bays with rotating bay-doors. The British 'Blue Study' and 'Green Satin' systems and 'Orange Putter' tail warning radar were replaced with the American-made APW-11 bombing air radar guidance system and the APS-54 RWR (Radar Warning Receiver); there was an addition of four pylons per wings; and last, but not the least, 2× 20 mm M39 cannons were installed internally on each wing.<sup>29</sup> There are recorded instances from both the 1965 and 1971 Wars of how the PAF's B-57s have used them to simultaneously strafe at ground targets during dive bombing to 'amplify' damage.<sup>30</sup>

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28. Lall, n. 8, p. 96. Also see Kumar, n. 18, p. 39.

29. Bill, Gunston and Peter Gilchrist, *Jet Bombers: From the Messerschmitt Me 262 to the Stealth B-2*. (UK: Osprey Publishing Company, 1993), pp. 150-151. Also based on inputs from Air Marshal Vikram Singh (Retd), author of *Because of This: A History of the Indo-Pak Air War of December 1971*.

30. Ibid.

## THE WAR COMMENCES

Although the IAF commenced combat operations starting September 1, 1965, the Canberras weren't employed until September 6.<sup>31</sup> While the Pakistanis claim that the Canberras were present in Chhamb that evening, there is no evidence to back their claims.<sup>32</sup>

As war was officially declared on September 6, the Canberras were deployed for providing Close Air Support (CAS). Ten Canberra sorties were flown into the XI Corps' area of operations in Chhamb.<sup>33</sup> Two planned strikes against a Pakistan Army Corps Headquarters (HQ) in Gujrat had to be abandoned as the target was not acquired, and, in both cases, the Canberras dropped their bombs over open areas and returned.<sup>34</sup>

That afternoon, the PAF launched coordinated air strikes against various Indian forward air bases, retaliating to which the IAF launched strikes against Pakistani air bases. No.5 Squadron struck Sargodha and its satellite air bases—Bhagtanwala, Murid and Chota Sargodha. The first strike was launched at 2345 hrs. Strikes continued well into the early morning of September 7.<sup>35</sup> During a strike on Mianwali, one of the Canberras also fired upon an enemy convoy, but its outcomes were unknown.<sup>36</sup>

No. 35 Squadron launched a 10 aircraft strike against Mauripur (Karachi). They were to take off from Pune, strike Mauripur and recover to Agra, with Jodhpur as an alternative. Over Karachi, the package couldn't detect the target due to low cloud cover. One of the Canberras jettisoned its ordnance in the Arabian Sea, just off Karachi Harbour. The last Canberra spotted the

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31. Gunston and Gilchrist, n. 29.

32. Ibid. Also see Kumar, n. 29, p. 61.

33. History Division, Ministry of Defence, Government of India, "Chapter IX: The Air War," *Official History of the Indo-Pak War, 1965*, p. 254, <https://www.bharat-rakshak.com/archives/OfficialHistory/1965War/Chapter09.pdf>. Also see Kumar, n. 18, p. 107.

34. Ibid. Also see V. C. Goodwin, *Combat Diary of a Tusker, Bharat-Rakshak IAF History: 1965 War*, <https://www.bharat-rakshak.com/IAF/history/1965war/goodwin/>. Accessed on July 8, 2025.

35. Sameer Joshi, "1965 Sargodha Attack: How IAF Hit Pakistan's Most Protected Base, Destroyed 10 Aircraft," *ThePrint*, September 9, 2019, <https://theprint.in/defence/1965-sargodha-attack-how-iaf-hit-pakistans-most-protected-base-destroyed-10-aircraft/288878/>. Accessed on April 28, 2025. Also see Kumar, n. 18, p. 154.

36. Goodwin, n. 34.

target and performed a bombing run, but no bombs were dropped as they had a hang-up. Except for the aircraft that jettisoned its load (that recovered at Agra), all aircraft recovered to Jodhpur due to fuel shortage. After that mission, No. 35 Squadron moved its operations from Pune to Agra for the rest of the war.<sup>37</sup>

Mauripur was home to both the B-57 squadrons of the PAF. In retrospect, until September 6, Mauripur based 22 of the 25 B-57B/Cs (with two B-57s and the lone RB-57F based at Peshawar), but when war was declared, the B-57 fleet was split between Mauripur (14x B-57) and Peshawar (10x B-57 and 1x RB-57F).<sup>38</sup>

There was only one Canberra squadron in the Eastern Sector (No.16 Squadron) which was based at Kalaikunda (KKD). The squadron was moved there during the 1962 Sino-Indian War, and remained in KKD even after the war ended.<sup>39</sup> On September 5, all but four aircraft of No. 16 Squadron were moved to Gorakhpur. Two each of bomber and interdicator configured aircraft were retained at KKD in case of the need to strike East Pakistan.<sup>40</sup>

Unlike the Western Sector, there were no air strikes against IAF bases in the East on September 6.<sup>41</sup> The IAF still decided to strike East Pakistan, and its first target was Chittagong airfield. Indian intelligence was unable to estimate the exact location of the PAF's lone fighter squadron in the East (No. 14 Squadron PAF). On the evening of September 6, executive orders to strike were received but this intelligence gap led to delays in mission planning and execution.<sup>42</sup>

Two interdicator Canberras (armed with 2x 1000 lb bombs on their wing pylons) were to carry out the strike.<sup>43</sup> The strike was led by Wing Commander

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37. Kumar, n. 18, pp. 152-154. Inputs from P.V.S. Jagan, author of *The India-Pakistan Air War of 1965*. Also see n. 51.

38. Mazhar and Shabbir, n. 14, ch. 2, p. 20.

39. <https://www.bharat-rakshak.com/iaf/history/1965war/book/chapter05-2/>

40. Kumar, n. 18, p. 256.

41. Mazhar and Shabbir, n. 14, ch. 2, p. 34.

42. "Chapter 5: Missed Opportunity—War in the Eastern Sector," *Bharat-Rakshak IAF History: 1965 War*, <https://www.bharat-rakshak.com/iaf/history/1965war/book/chapter05-2/>. Accessed on April 28, 2025. Also see Kumar, n. 18, p. 256.

43. Ibid.

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PM Wilson (with Squadron Leader ON Shankaran as his navigator, flying ac/no IF-918) with Squadron Leader RK Karve (and Flying Officer GCS Rajwar as his navigator) as No. 2 in the formation.<sup>44</sup> The route plan was KKD—Lighthouse south of Calcutta—direct across the Bay of Bengal to Lighthouse south of Chittagong—Chittagong air base. The time gap between the two aircraft was 10 minutes to avoid possible fighter opposition over Chittagong. The No. 2 aircraft was to orbit the Chittagong lighthouse until called

in; if there was heavy opposition, the mission was to be abandoned. The objective was to render the Chittagong airfield's runway inoperable.<sup>45</sup>

Wilson's Canberra was planned to appear over the target approximately at 0530 hrs (local time). Despite arriving over the target in poor weather and the bombs finding their target, the bombs failed to explode. The second Canberra was called to follow up, this time successfully triggering explosions.<sup>46</sup> Two F-86 Sabres were scrambled from Tejgaon to intercept them at 0537 hrs (local time), however, the Canberras egressed undetected. During the intercept attempt, one of the Sabres (piloted by Flight Lieutenant A.T.M. Aziz) cartwheeled into the ground, killing the pilot.<sup>47</sup> Despite the effort, the mission was considered unfruitful, owing to the massive intelligence gap.<sup>48</sup>

No. 14 Squadron PAF received permission to retaliate at 0625 hrs (local time) and by 0632 hrs, 5 Sabres, led by Squadron Leader Shabbir Hussain

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44. Ibid. Also see Anchit Gupta, "For Pete's Sake: The Man Indian Air Force Can't Stop Loving," *IAF History*, July 17, 2022, <https://iafhistory.in/2024/07/07/for-petes-sake-the-man-indian-air-force-cant-stop-loving/>. Accessed on April 29, 2025. Also see Kumar, n. 18, p. 257.

45. n. 33, ch. 9, p. 257. Also see Kumar, n. 18, p. 257.

46. <https://www.bharat-rakshak.com/iaf/history/1965war/book/the-canberras-in-the-1965-war/#:~:text=First%20flown%20in%201949%2C%20it,bomber-interdictor%2C%207%20TMk;https://www.bharat-rakshak.com/iaf/history/1965war/book/chapter05-2/>

47. Mazhar and Shabbir, n. 14, ch. 2, p. 35.

48. n. 33, ch. 9, p. 257.

were airborne, towards KKD.<sup>49</sup> At 0640 hrs Indian Standard Time (IST), the strike caught KKD by surprise. Armed with just machine guns, the Sabres managed to strafe the airfield and return to base without any losses of their own.<sup>50</sup> While the PAF claimed anywhere from 10-15 Canberras and 2 Hunters and about 6 other aircraft damaged, only two Canberras and four Vampires were destroyed.<sup>51</sup>

Eventually, by September 11, a politico-military decision was taken to cease war efforts in the East due to the fear of excessive collateral damage, and by September 14, all operations on the Eastern Sector were ceased.<sup>52</sup>

### *All Eyes on West Pakistan*

The Canberras continued to operate in the Western Sector—providing Close Air Support (CAS) and Battle Air Interdiction (BAI), as well as conducting Offensive Counter Air (OCA) operations against PAF air bases. Throughout this, strikes against Sargodha and its satellite airfields of Chhota Sargodha, Chak Jhumra, Bhagtanwala, Murid, and other airfields at Akwal, Dab, Gujrat, Pasrur, Risalewala and Mianwali continued almost on a nightly basis.<sup>53</sup>

On September 8, Chandigarh was activated for Canberra operations. There was an incident when a bomb slipped off the wing pylon of a Canberra and slid across the runway into the high grass area. The bomb was found in the morning and defused. A similar incident was repeated on the night of September 9-10, but the bomb was found immediately.<sup>54</sup> By September 9,

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49. Mazhar and Shabbir, n. 14, ch. 2, pp. 34-35.

50. Ibid.; <https://www.bharat-rakshak.com/iaf/history/1965war/book/chapter05-2/>

51. <https://www.bharat-rakshak.com/indianairforce/database/accidents/listing.php?cur=50&qyear=1965&qt=YR&qunit=&qacid=AL>; History Division, n. 33, ch. 9, p. 257. Also see Mazhar and Shabbir, n. 14, ch. 2, p. 35. John Fricker, *Battle for Pakistan: The Air War of 1965*. (UK: Littlehampton Book Services Ltd., 1979), p. 117; Kumar, n. 18, p. 269.

52. <https://www.bharat-rakshak.com/iaf/history/1965war/book/chapter05-2/>

53. Fricker, n. 51, p. 134.

54. Kumar, n. 18, p. 165.

No.35 Squadron had relocated to Agra and was operating in tandem with No.5 Squadron and the JBCU.<sup>55</sup>

On September 10, Canberras of No.5 Squadron (along with Hunters and Mysteres) took part in CAS missions against Pakistani armour in the Khem Karan Sector.<sup>56</sup> The Canberras were to fly as four sections. The plan was such that the first Canberra section would fly over Halwara, rendezvous with the Hunters which would be taking off from the said airfield. The Hunters would escort the first formation in and out of Khem Karan, using Ferozepur as the Initial Point (IP); when one formation was done striking, the Hunters would escort them back to the IP and rendezvous with the next formation and escort it, until all the sections had completed their missions.<sup>57</sup>

Around 1500 hrs, 'Red-2' of the first section made a 'Mayday' call—a bird hit had destroyed the navigator's plexiglas window, injuring him. The pilot reported an Air Speed Indicator (ASI) failure. The pilot, in a hurry to jettison the bombs, forgot to open the bay door (releasing live bombs from their racks, onto the belly of the aircraft). He also made a very rough landing approach, skidded beyond the crash barrier, tearing it. It stopped almost 300 yards into the runway overshoot area. However, both the pilot and navigator were safe, and the live bombs did not explode due to impact.<sup>58</sup>

The first two sections aborted the mission, and the Hunters escorted the third section into battle, which ended up spending more time than expected, because the formation was jumped by PAF F-86 Sabres. The Sabres did not pursue the attack or engage with the Hunter escorts. Because of this delay, the fourth section went into Khem Karan unescorted.<sup>59</sup> Despite the quagmire, the Canberras flew a total of 14 sorties in Ferozepur, Kasur, and Khem Karan areas. The aircraft must have destroyed/knocked out approximately 50 Pakistani tanks and trucks. In a separate incident, two Canberras, escorted

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55. Ibid., pp. 164-165.

56. <https://www.bharat-rakshak.com/iaf/history/1965war/book/chapter06/>.

57. Kumar, n. 18, p. 178.

58. n. 27; Inputs from P.V.S. Jagan, author of *The India-Pakistan Air War of 1965*; Kumar, n. 18, p. 178.

59. Ibid.

by four Gnats, were pounced upon by a pair of Sabres, but no engagements occurred.<sup>60</sup>

While some sources claim that after the Halwara incident, No.35 Squadron was withdrawn from combat, the claim is untrue. The squadron continued to fly missions until the end of the operations.<sup>61</sup> The same night, Sargodha, Risalewala, Multan, Nawabshah, Wegowal and Chak Jhumra were struck.<sup>62</sup>

After Pakistan's failed attempt to para-drop saboteurs into Indian air bases, the Canberras started conducting armed patrols, carrying out patterns over air bases, as a last line of defence against any threats. Not much is available on these missions, but there at least two interesting incidents that are known:

- At dusk of September 10, a No.5 Squadron Canberra was about to open fire on an Indian An-12 over Agra. The pilot mistook the An-12 for a PAF C-130. The attack was aborted when the pilot visually identified the aircraft. This error occurred because 230 Signal Unit (SU) at Amritsar failed to inform the Canberra of the incoming An-12.<sup>63</sup>
- On September 12, amidst rumours of Pakistan re-attempting another para drop, a single Canberra set up a patrol over Halwara and Ambala from 0015 hrs to 0630 hrs. However, it was a false alarm.<sup>64</sup>

### ***Strike on Peshawar***

Located along the Pakistan-Afghanistan border, Peshawar is the farthest air base from India, and was deemed the safest from the IAF's air strikes. Thus, the PAF had stationed half of its B-57 fleet [10x B-57B/C and 1x RB-57F Electronic Intelligence (ELINT) aircraft] and a squadron of F-86F Sabres at Peshawar.<sup>65</sup> Apart from the air base, PAF HQ was also located there. The idea to strike Peshawar had been on the drawing boards since

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60. Ibid.

61. n. 27; No. 35 Squadron, Indian Air Force, *The Epic Journey: The Saga of the 35 Squadron Air Force* (35 Squadron IAF, 2018), ch. "Roles Assigned to the Squadron," sub-sec. "1965 Indo-Pak War"; n. 33, ch. 9, p. 64.

62. Kumar, n. 18, p. 182. Also see Ibid.

63. Goodwin, n. 34.

64. Kumar, n. 18, p. 132.

65. Mazhar and Shabbir, n. 14, ch. 2, pp. 20-21.

the beginning of the war, but the clearance to strike wasn't secured until September 12, 1965.<sup>66</sup>

The initial plan was to employ four Canberras to conduct high altitude bombing of Peshawar using the 'Blue Study' system.<sup>67</sup> However, the aircrew planners involved were extremely sceptical about the plan. After much discussion, clearance was given for an eight aircraft strike. It was planned for a low level ingress to avoid/delay detection by the PAF and maximise the chances of mission success. This plan was given clearance.<sup>68</sup>

Ten aircraft were ferried from Agra to Chandigarh on the evening of September 13 (call signs Tiger India, the TI aircraft, followed by Victor 1 through Victor 9, the strike aircraft. Victor 9 was the back-up aircraft for the mission), with the first aircraft arriving at Chandigarh at 2200 hrs. All the Canberras except Victor 9, landed safely. Victor 9 experienced a broken undercarriage. The aircraft landed, but rendered the final 200 yards of one end of the runway unusable, however, the mission was a GO with the remaining length of runway.<sup>69</sup>

This mission was targeting the lone runway, the bomb dump, Air Traffic Control (ATC) tower and Bulk Petroleum Installation (BPI) of the Peshawar air base, PAF Officers' Mess and PAF HQ. The crew were 'weapons-free' to engage other targets of opportunity within the attack window.<sup>70</sup> Tiger India took off at 0016 hrs IST on September 14, followed by Victor 1 after a four minute interval at 0020 hrs IST. Thereon, the remaining aircraft would take off within one minute intervals after Victor 1. The aircraft flew at low level [under 300 ft Above Ground Level (AGL)] along a predetermined path (see Fig 1 for full information), maintaining complete radio silence.<sup>71</sup>

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66. Kumar, n. 18, p. 186.

67. "The Night Raiders: Good Morning Peshawar", *Bharat-Rakshak*, September 15, 2015, <https://www.bharat-rakshak.com/iaf/history/1965war/canberras-over-peshawar/>, accessed on July 8, 2025.

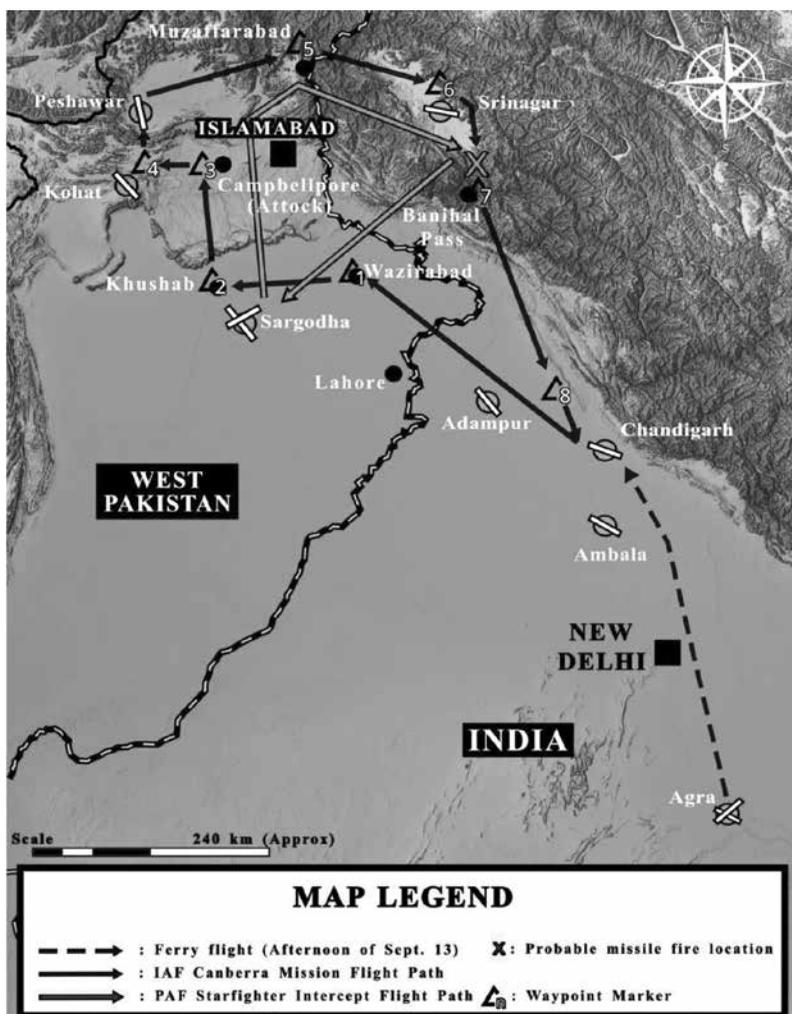
68. Ibid.

69. Ibid.

70. Ibid.

71. Ibid.

**Fig 1: Map Showing the Planned Route of the Canberra Raid on Peshawar on the Night of September 13-14, 1965**



**Map Cartography:** Arjun Prakash Iyer (author).

As per the Pakistani sources, around midnight (local time), Air Defence HQ of Pakistan detected a package of aircraft nearing the border, identified as 12-15 Canberras, with 8 of them being 'decoys'. It wasn't until the formation

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reached north of Sargodha, that the Pakistanis realised that their target was not Sargodha.<sup>72</sup> This was likely because of the complex flight path, and because another formation of three Canberras, taking off from Ambala, was to strike Kohat air base simultaneously.<sup>73</sup> The Kohat mission struck the build-up area east of Runway 05 and the POL.<sup>74</sup>

Despite last minute changes due to the flares and TIs undershooting the target by 500 yards, and height readjustments from 7,000 ft to 8,000 ft to match the error as well as avoid enemy ack-ack, all the Canberras dropped their ordnance on target.<sup>75</sup> The Pakistani Ground Control Intercept (GCI) scrambled and vectored an F-104A Starfighter (piloted by Squadron Leader Mervyn Middlecoat) to intercept the Canberra formation. Tailing the egressing Canberras, he spotted the Victor formation over the Banihal Pass. Middlecoat fired an AIM-9B Sidewinder at one of the Canberras (Victor 7). However, the missile exploded prematurely. Middlecoat didn't pursue the attack further and all the Canberras returned to base safely by 0245 hrs.<sup>76</sup>

The Canberras managed to cause damage to one end of Runway 17, the aircraft dispersal area and the BPI.<sup>77</sup> In a turn of fate, one of the 4,000 lb blockbusters fell short of the dispersal area where the B-57 Canberras were lined up, wing tip to wing tip. The blast impact was reduced because of loose soil, as the fuses of the 4,000 lb bombs were set to explode 100 ft

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72. Fricker, n. 51, p. 136.

73. Kumar, n. 18, p. 207; n. 33, ch. 9, p. 263; Ahluwalia, n. 67.

74. Kumar, n. 18, p. 207.

75. n. 33, ch. 9, p. 246; Ahluwalia, n. 67; Goodwin, n. 34.

76. n. 33, ch. 9, p. 263. Mazhar and Shabbir, n. 14, ch. 2, p. 38. Mazhar and Shabbir, n. 14, ch. 2, p. 38. "Chapter 6: The Lull - Air Operations (September 8th to 14th)", *Bharat-Rakshak*, June 9, 2013, <https://www.bharat-rakshak.com/iaf/history/1965war/book/chapter06/>, accessed on July 10, 2025. Ahluwalia, n. 67.

77. n. 33, ch. 9, p. 263.

above the ground.<sup>78</sup> The raid had destroyed the PAF HQ Officers' Mess, crew room and a civilian flying club, resulting in considerable damage.<sup>79</sup> From this point, Peshawar was also struck on a nightly basis until the end of the war.

**The Canberras managed to cause damage to one end of Runway 17, the aircraft dispersal area and the BPI.**

### **CANBERRA OPERATIONS IN THE LATTER HALF OF THE WAR (SEPTEMBER 14-22)**

On the morning of September 14, a strike package of Canberras, with escort from Gnats of No. 2 Squadron, were bounced by a formation of PAF Sabres. Wing Commander Bharat Singh [Commanding Officer (CO), No. 2 Squadron] managed to shoot down a Sabre.<sup>80</sup> On September 15, a Canberra operating from Chandigarh experienced a hydraulic failure and performed a belly landing at Chandigarh with the bombs in the bomb bay still intact). That evening, another Canberra collided with the stricken Canberra during take-off roll, badly damaging both airframes. However, there was no collateral damage or loss of life.<sup>81</sup> A four aircraft formation was called upon to provide CAS in the Ugoke area of the Sialkot Sector. They were escorted by Gnats from Pathankot, that observed at least three tanks set ablaze by the Canberras and several others knocked out/immobilised.<sup>82</sup>

On the night of September 16, No. 16 Squadron reentered combat operations, flying its first mission on the Western Front, against Sargodha. Whilst returning from the raid, Wing Commander Wilson's Canberra was chased by a Starfighter, however, all the aircraft managed to make it back to base.<sup>83</sup> This could have been the incident wherein Flight Lieutenant

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78. Mazhar and Shabbir, n. 14, ch. 2, p. 38.

79 n. 76; Kumar, n. 18, ch. 12, p. 207.

80 n. 76.

81. Kumar, n. 18, pp. 216-217.

82. Ibid., p. 217; n. 61.

83. n. 27; Kumar, n. 18, p. 218.

Amjad Hussain managed to get on the tail of a Canberra but was unable to shoot it down because of a short-circuit in the weapon selection switch.<sup>84</sup>

On September 18, Canberras, escorted by two Gnats, provided CAS in the Lahore Sector.<sup>85</sup> On September 19, two Canberras, with two Gnats as escorts, conducted battle air interdiction in the Pasrur Sector. Details of the target struck are not known, however, fires were confirmed immediately after the strike.<sup>86</sup> On September 20, four Canberras, escorted by two Gnats, struck ground targets in the Pasrur Sector during the day.<sup>87</sup> At night, the Canberras attacked the Sargodha air base. They also struck the Chawinda railway station, where they damaged railway lines and roads within the target area.<sup>88</sup>

The night of September 21-22 would mark the last of the Canberra raids of the war. A six aircraft formation struck Sargodha. This mission was to be the first (and perhaps the last) time that the IAF employed the 'Blue Study' bombing system in an actual combat scenario.<sup>89</sup>

The 'Blue Study' refers to a high-altitude blind bombing system that was designed in the aftermath of World War II as a means to accurately deliver bombs from greater heights, during bad weather as well as night. This system revolves around a pair of beacons, called 'Cat' and 'Mouse'. As soon as the aircraft takes off from its base, it has to fly on a flight path shaped like the 'arc' of a circle, which is centred around the 'Cat'. At a predetermined point along this arc, the 'Mouse' is programmed to send a signal that transitions the aircraft from an arc flight path to a straight flight path, towards the target. The 'Mouse' can also be used for automatic bomb release—once the aircraft is over the target, corresponding bombing computers toggle open/

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84. Mazhar and Shabbir, n. 14, ch. 2, p. 38

85. Kumar, n. 18, p. 222.

86. *Ibid.*, p. 230.

87. *Ibid.*, p. 238.

88. n. 33, ch. 9, p. 265.

89. Kumar, n. 18, p. 240.

close the bay doors and drop bombs, however a regular 'manual' release can also be executed.<sup>90</sup>

In this mission, only the TI aircraft was guided by the 'Blue Study'. However, at the time of transitioning between the arc to the straight path, the 'Mouse' beacon failed to pick up the aircraft. This problem was compounded by the thick cloud cover at 18,000 ft. over Sargodha, forcing the pilot to perform a visual drop of the flares on the target from 12,000 ft. The flares undershot the target, and as soon as they did, ack-ack fire opened up. The TI bombs also failed to explode.<sup>91</sup>

The IAF lost its first and only Canberra of the war that night, when Flight Lieutenant MM Lowe's and Flight Lieutenant KK Kapur's Canberra was intercepted by a Starfighter (piloted by Squadron Leader Jamal A. Khan) and shot down with an AIM-9B Sidewinder near Fazilka, Punjab. Flight Lieutenant Lowe managed to eject and was captured by the Pakistan Army, whilst Flight Lieutenant Kapur's mortal remains were found inside the wreckage of the Canberra.<sup>92</sup>

As part of the Mutual Defence Assistance Programme (MDAP), the U.S. government supplied Pakistan two AN/FPS-20 air search radars and two AN/FPS-6 height finding radars in 1960.<sup>93</sup> They were positioned at Sakesar and Badin, for coverage of the Northern and Southern Sectors respectively.<sup>94</sup> The radar sites at Badin and Sakesar were defended by 16 guns each.<sup>95</sup>

On September 19, two interdicator Canberras were to strike the Sakesar radar complex, but the raid was aborted as the target could not be sighted

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90. Locksley Percival Fegredo, *Memoirs of an IAF Technical Signals Officer* (1950s series), *Bharat-Rakshak IAF History: 1950s*, <https://www.bharat-rakshak.com/iaf/history/1950s/locksley-fegredo/>. Accessed on July 19, 2025.

91. Kumar, n. 18, pp. 240-241; Goodwin, n. 34.

92. n. 27; Inputs from Wing Commander Joseph Thomas (Retd), VM.

93. Stockholm International Peace Research Institute, *SIPRI Arms Transfers Database*, updated March 10, 2025, <https://armstransfers.sipri.org/ArmsTransfer/CSVResult>. Accessed on May 2, 2025.

94. Mazhar and Shabbir, n. 14, ch. 2, p. 21.

95. Kumar, n. 18, p. 45; n. 33, ch. 9, p. 246.

due to poor weather.<sup>96</sup> The situation became difficult on the same day, as a Pakistani F-86 shot down an Indian Beech 18 chartered aircraft, which was transporting the then Chief Minister of Gujarat Shri Balwantraji Mehta and his family near Bhuj.<sup>97</sup> The intercept was vectored by the Badin radar complex. Thus, the radar was to be destroyed.<sup>98</sup>

On September 21, a six aircraft formation took off from Agra. The first four were bombers and the last two were interdictors. The first four aircraft completed their runs. This was followed by the interdictors, flying two minutes apart. The first interdictor, flown by Wing Commander Wilson, successfully destroyed the radar antennae, which led the second interdictor to hold fire.<sup>99</sup> Simultaneously, as all the Canberras were egressing, a formation of Sabres was returning to Hyderabad (Pakistan) after attacking Gadra road. However, they were not directed to intercept the Canberras.<sup>100</sup> Later that evening, Radio Pakistan openly announced the destruction of the Badin radar by the Indian Canberras, describing the events in a particularly detailed fashion, and admitted that the strike was by far one of the most successful of the entire war.<sup>101</sup>

Although very little information is available regarding the Canberra Photo Reconnaissance (PR) missions, there are a few that are recognised. On September 5, a Canberra PR.57 (escorted by four Gnats and two MiG-21s providing top cover), reconnoitred the Jaurian Sector after a Mystere attack on Pakistani armour. That same day, Squadron Leader JM Nath reconnoitred

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96. *Ibid.*, p. 265; Kumar, n. 18, p. 230.

97. VT-COO, *Bharat-Rakshak IAF Aircraft Database—Aircraft*, <https://www.bharat-rakshak.com/indianairforce/database/aircraft/VT-COO>. Accessed on May 3, 2025,

98. Air Commodore Prashant Dikshit (Retd), “16 Squadron & Badin Radar Raid,” *The Tribune*, updated September 16, 2018, <https://www.tribuneindia.com/news/archive/columns/16-squadron-badin-radar-raid-653654/>. Accessed on May 3, 2025.

99. Anchit Gupta, 2025, “For Pete’s Sake: The Man Indian Air Force Can’t Stop Loving”, *IAF History*, April 20, 2025. <https://iafhisotry.in/2024/07/07/for-petes-sake-the-man-indian-air-force-cent-stop-loving/>, accessed on July 10, 2025; n. 41; Kumar, n. 18, pp. 233-234.

100. “Chapter 8: The Rest of the War (15–23 September),” *The India-Pakistan Air War of 1965 project, Bharat-Rakshak IAF History*, <https://www.bharat-rakshak.com/iaf/history/1965war/book/chapter08/>. Accessed on May 3, 2025.

101. Mazhar and Shabbir, n. 14, ch. 2, p. 39. Gupta, n. 44.

the Ichogil Canal in the Lahore Sector.<sup>102</sup> On September 18, Squadron Leader JM Nath conducted a PR mission over key Pakistani radar installations, including Badin, which helped plan the strike mission of September 21.<sup>103</sup>

## CONCLUSION

The English Electric Canberra was the last of the true dedicated bomber aircraft operated by the IAF. The Canberra operations of the 1965 War provide several key insights into the actual combat potential of the platforms and of how the IAF utilised them in a real combat scenario:

1. **An Effective Procurement Decision:** The decision to induct the Canberra instead of the Il-23 Beagle, in retrospect, allowed the IAF to avoid reduced offensive strike range and actual combat utility issues. This could be understood from the PAF's experience with the type. The PAF experienced this issue first-hand in 1967, when it received up to 12 Harbin H-5 bombers from China. The PAF found them to be difficult to fly and retired them before the 1971 War.<sup>104</sup>
2. **Role of the Canberras:** The Canberras were used in various capabilities within the wide spectrum of air to ground warfare—from Close Air Support (CAS) to Battle Air Interdiction (BAI) to Suppression/Destruction of Enemy Air Defences (SEAD/DEAD), but were mostly used in Offensive Counter Air (OCA). Canberras struck the same targets over and over again. Even the Pakistanis noted that most of the IAF's attention was towards airfields like Sargodha and its satellite airfields, Mianwali and Peshawar, whereas Mauripur, Dacca and Rawalpindi were rarely/never struck at all.<sup>105</sup> The limited strategic freedom the politico-military diktats laid down had drastically curtailed the utilisation of the Canberras' full combat potential.

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102 *1965 INDO-PAK Air War: Documentary*, Press Information Bureau of India (PIB India), YouTube video, approx.13:55-14:49, published ca. 2015, [https://youtu.be/Y6mPJm\\_I-X8](https://youtu.be/Y6mPJm_I-X8). Accessed on May 2, 2025. Kumar, n. 18, pp. 93-95.

103. <https://www.tribuneindia.com/news/archive/columns/16-squadron-badin-radar-raid-653654/>; Kumar, n. 18, p. 233.

104. Mazhar and Shabbir, n. 14, ch. 3, p. 56.

105. Fricker, n. 51, p. 187.

**The decision to induct the Canberra instead of the Il-23 Beagle, in retrospect, allowed the IAF to avoid reduced offensive strike range and actual combat utility issues.**

**3. Tactics Employed and Their Effectiveness:** The IAF Canberras mostly used Medium Altitude Level Release (MALR) tactics, staying clear of PAF's Anti-Aircraft Artillery (AAA), but this safety came at the cost of accuracy.<sup>106</sup> The IAF lost only one Canberra over the enemy air space due to an interceptor, whereas the PAF lost three aircraft due to enemy AAA.<sup>107</sup> The

Pakistani B-57s performed dive bombing attacks, which, coupled with the Short-Range Aid to Navigation (SHORAN) and the 'rotating' bomb bay doors, were more accurate in dive bombing, and that made them more vulnerable to AAA. Despite these limitations, the IAF utilised the Canberras successfully to keep the PAF's offensive air operations at bay, by mounting consistent, day and night strikes against Pakistani targets.

When it was introduced, the 'Blue Study' was regarded as a revolutionary bombing system, but had become obsolete by 1965.<sup>108</sup> The 'Orange Putter' on the other hand, was considered to be a life-saver by many Canberra crews, but was highly prone to misidentifying radar clutter as enemy radar emissions, which was common to early active tail warning radar systems.<sup>109</sup> For example, during Operation Vijay (1961), a Canberra allegedly picked up an airborne radar emission, which was falsely identified as a Portuguese F-86D Sabre Dog—but the Portuguese had never deployed any radar equipped interceptor in Goa.<sup>110</sup>

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106. Mazhar and Shabbir, n. 14, ch. 2, p. 39.

107. "Appendices," *The India-Pakistan War of 1965* project, *Bharat-Rakshak IAF History*, <https://www.bharat-rakshak.com/iaf/history/1965war/appendices/>. Accessed on July 8, 2025.

108. Inputs from *Air Commodore Krishan Kumar Badhwar (Retd), AVSM, VrC*

109. "Canberra: Photo Reconnaissance Marks PR.57 and PR.67", *Bharat-Rakshak*, April 12, 2015, <https://www.bharat-rakshak.com/iaf/aircraft/past/canberra-chapter03/>, accessed on July 10, 2025.

110. Satyindra Singh, *Blueprint to Bluewater: The Indian Navy, 1951–65* (New Delhi: Lancer International, 1992), ch. 12.

1. **Utilisation in Later Wars:** In retrospect, the Canberras were more or less used in the same fashion during the 1971 War, but were given more freedom to strike targets of opportunity. The attack on Karachi's oil refineries and the strikes against Mauripur, especially the one on December 5, 1971, destroying one RB-57F and T-33A aircraft on the ground, are examples of how the Canberra continued to remain a potent platform in the IAF's service.<sup>111</sup>
2. **Impact on Future Strategy:** The Canberra's utility overrides the then contemporary perspective of the Canberra being considered obsolete by contemporary global standards. The Canberra would eventually play a role in shaping the IAF's offensive air strategy for the remainder of the 20th century, influencing the decision to procure the SEPECAT Jaguar as the Deep Penetration Strike Aircraft (DPSA) in 1979. Yet the Canberra could never be fully replaced in service—the bomber and reconnaissance variants of the Canberra were in service in 1998 and 2007 respectively, with the latter also briefly contributing to the Kargil conflict.

In summary, the Canberra fleet of the IAF dropped over 1,050,000 pounds (~460,000 kg) of munitions on enemy targets, playing a pivotal role in keeping Pakistan's war machinery on a defensive footing during both day and night, thereby positively influencing the outcomes of the IAF's air operations.

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111. Anchit Gupta, "How the Indian Air Force and Navy Made Karachi Halwa," *IAFHistory*, November 22, 2023, <https://iafhistory.in/2024/02/03/how-the-indian-air-force-and-navy-made-karachi-halwa/>. Accessed on July 31, 2025. Lall, n. 8, Annexure 15, p. 626. *Ibid.*, Annexure 8, p. 605.

