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INDO-ISRAEL DEFENCE COOPERATION: STRENGTHENING BONDS

ANIL GOLANI AND ANU SHARMA

INTRODUCTION

There has been a considerable upswing in India-Israel bilateral relations, spurred by numerous diplomatic and high-level visits from both sides in the past few years. India and Israel established diplomatic relations on September 17, 1992. The tricennial diplomatic relations between India and Israel have further strengthened the ties which were primarily based on defence and security cooperation. In the year 2022, India and Israel celebrate the 30-year anniversary of this bilateral relationship for which they jointly launched a commemorative logo. The logo has an amalgamation of the Star of David and the Ashoka Chakra from the Indian flag in their respective colours. It also features the number 30, portraying the 30th anniversary of this relationship. In the initial years after the establishment of diplomatic relations, ties between the nations thrived at various levels, including, economic, military, agricultural and political. Both nations visualise themselves as isolated democracies facing cross-border conflicts and threats to their security which led them to transform this cooperative relationship

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into a strategic imperative. In this context, this paper will analyse the bilateral relations between India and Israel in the past three decades. It will also assess how this bilateral relationship has transformed into a mutually beneficial strategic one, while highlighting its nuances.

Fig 1



India recognised the state of Israel in the year 1950, and in the first few years following their independence from the United Kingdom, both countries moved in diverse directions, from 1950 to 1992. During this period, India established itself as one of the prominent leaders of the Non-Aligned Movement (NAM), maintaining proximate relations with the Arab nations and the then Soviet Union. On the other hand, Israel developed close ties with the US and Western Europe. Secondly, India's considerable Muslim population also acted as a hurdle in developing its relations with Israel during the initial years after the independence of both nations. There was a fear amongst the Indian ruling elite that developing proximity with a Jewish state might radicalise its Muslim population. At present, there is an Israeli Embassy and two Consulates in India which comprise one of the largest Israeli diplomatic missions in the world. Furthermore, the steady growth and

consistent strategic relations have resulted in a spectacular transformation of this bilateral partnership in the past three decades. In this context, this paper will discuss in detail the contours of the India-Israel bilateral relationship with a specific focus on the defence partnership between the two nations.

The full diplomatic relations between India and Israel were established only in 1992. In the initial years, due to its uncertain future, several Asian nations, including India and China and several Arab nations, refrained from developing full diplomatic relations with Israel. In 1956, during the Suez Canal

crisis, India emerged as the first non-Arab nation to recognise the Palestinian Liberation Organisation (PLO) as the single legitimate representative of the Palestinian people. In 1975, the Indian government permitted the PLO to open an office in New Delhi. Following this, India recognised the state of Palestine in 1988. New Delhi also opened its first representative office in Palestine in 1996. One of the reasons cited for this has been the ideological divide during the Cold War era which forced nations like India to maintain a distance from Israel. Furthermore, caution about hurting the Arab sentiments as well as the growing affinity between Indian and Palestinian leaders—Mrs Indira Gandhi and Yasser Arafat—during the 1970s, led India to endorse and espouse the Palestinian cause. Added to this was also the fact that during the Cold War, India's inclination towards the Soviet Union and Israel's leanings towards the United States pushed these nations in opposite directions. After the collapse of the Soviet Union and the economic liberalisation of India in 1991, under the leadership of then Indian Prime Minister P.V. Narasimha Rao, New Delhi decided to follow a more pragmatic foreign policy. The relationship between the two nations since then has soared to new heights and resulted in an impermeable sheen that preserves it, despite the many

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challenges. With various factors facilitating the bilateral relations, including the ancient civilisational connect, a similar demographic profile, maturing democracies having gained independence amidst difficult circumstances as well as having fought wars to protect their territorial integrity, the two nations have various common factors that segue this friendship.

Added to this is the fact that both India and Israel are facing troubles due to their respective hostile neighbourhoods, which has led them to have a shared vision for peace in their regions. Built upon this strong foundation of mutual trust and understanding, strategic relations between India and Israel have had a nascent beginning with the establishment of the defence section in the Indian Embassy in Tel Aviv in 1995. Faced with similar threats of rising Islamic extremism and hostile neighbours, the burgeoning defence industry in Israel and the emergent needs of the Indian military establishment made this partnership fortuitous, eventually leading to Israel becoming the second biggest exporter of defence equipment to India, after Russia. Since the establishment of diplomatic relations, India is increasingly becoming a key player in Israel's political, commercial and strategic realms. This is further strengthened by the Israeli perception of the treatment of Jews in India i.e., Indian Jews were never persecuted. Since then, both India and Israel have developed a multifaceted strategic partnership. In the past three decades, India and Israel signed various deals and agreements in the defence and technology sector as well as cooperation in the science, technology and agricultural sectors. It will be correct to say that India has been reticent about its ties with Israel, carefully balancing these with its staunch support for the Palestinian cause, its energy security issues as well as concerns related to its large Muslim population. Even though the diplomatic relations were established in 1992, the high-level visits between the two nations happened in 1997 with Ezer Weizman becoming the first Israeli president to visit India. It is also significant to mention here the military support which India received from Israel during the Kargil War (1999). From India, the first high-level visits took place in the year 2000. In the same year, the then Indian Foreign Minister, Jaswant Singh visited Israel which

eventually led to the formation of a joint anti-terror commission between the two nations. This was followed by the visit of Israeli Prime Minister Ariel Sharon in the year 2003, making him the first ever Israeli prime minister to visit India.¹ However, the key to these visits and budding relations between the two nations remains defence and security. In terms of Indo-Israel economic relations, since 1992, the joint trade and economic relations between the two nations have advanced swiftly, increasing from US\$ 200 million in 1992 (consisting mainly of diamonds), to US\$ 6.35 billion (excluding defence) in 2021. It is important to note here that the balance of trade has been in favour of India.²

Even though the defence and strategic relations between India and Israel were picking up pace, the change in leadership in India in the early 2000s resulted in a stall in this relationship, with Indian support again titling in favour of Palestine. Interestingly, in January 2008, India launched an Israeli spy satellite, underscoring the technological convergence between the two nations. At the domestic level in India, the opposition to having a full-fledged relationship with Israel at that time was largely confined to the left-leaning section of the Indian political system.³ So, in the due course of time, the relations between India and Israel moved from hardcore security and defence issues to more developmental schemes such as agriculture, water management and infrastructure development. Interestingly, water and agriculture have emerged as the important aspects of this bilateral partnership. This was also highlighted during Prime Minister Narendra Modi's visit to Israel in 2017. With this background, the sections below will discuss in detail India's relations with Israel in the domains of defence and strategic cooperation.

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1. Karan Manral (ed.), "29 Years of India-Israel Relations: Some Key Points", *The Hindustan Times*, January 30, 2021, at <https://www.hindustantimes.com/india-news/29-years-of-india-israel-relations-some-key-points-101611989248491.html>. Accessed on April 28, 2022.
 2. "India-Israel Bilateral Economic Relations", Ministry of External Affairs, March 14, 2022, at <https://www.indembassyisrael.gov.in/pages?id=nel5a&subid=7ax9b>. Accessed on May 1, 2022.
 3. P. R. Kumaraswamy, "Three Decades of Indo-Israeli Relations", *ISAS Briefs*, February 14, 2022, at <https://www.isas.nus.edu.sg/papers/three-decades-of-indo-israeli-relations/>. Accessed on April 28, 2022.

INDIA-ISRAEL DEFENCE COOPERATION

Israel is the second-largest defence supplier to India, after Russia. Israel's role in support of the Indian armed forces during the Kargil War in 1999 is much appreciated. Israel's actions during this time helped in strengthening the India-Israel defence partnership. For India, the credibility of Israel as a reliable defence partner was reinforced during the Kargil War of 1999 when it supplied the Indian Air Force (IAF) with the Unmanned Aerial Vehicle (UAV) 'Searcher' and surveillance systems for the Jaguar and Mirage squadrons.⁴ Israel was instrumental in integrating the Phalcon radar on the IL-76 platform, giving India its first Airborne Warning and Control System (AWACS) platform. Following this, Israel assisted in upgrading India's ageing MiG fighters and supplying small arms. Gradually, this military cooperation expanded to various other areas such as border management, avionics, missiles and anti-missiles, radars and surveillance. Israel has successfully carved out its niche in high-technology, specialised inventories and skills and counter-terrorism management. This has become a mutually beneficial relationship wherein Israel has emerged as a major defence supplier for India, with the latter having emerged as the largest market for Israel's arms exports. India and Israel have developed a versatile defence and security partnership, with a growing focus on joint development and production. At present, India-Israel defence cooperation has diversified to other areas of space, counter-terrorism and cyber security, however, the basis of this successful strategic partnership remains the Israeli arms sales to India.

An important pillar of India-Israel bilateral relations at present is defence trade which is further deepened with the Israeli companies seeking to develop long-term partnerships through New Delhi's 'Make in India' efforts to encourage indigenously produced arms and ammunition under joint ventures. Being one of India's topmost arms suppliers, the Israeli arms

4. Harsh V. Pant and Ambuj Sahu, "Israel's Arms Sales to India: Bedrock of a Strategic Partnership", *ORF Issue Brief*, no. 311, September 2019, at https://www.orfonline.org/research/israels-arms-sales-to-india-bedrock-of-a-strategic-partnership-55101/#_ednref16. Accessed on May 1, 2022.

sales to India amount to more than \$1 billion annually. This raises the significance of India as a consumer of the Israeli defence industry as well as strengthening the strategic ties between the two nations. One of the factors for New Delhi's push to establish a self-reliant defence industry is the swift rise in the security challenges faced by India which demand constant availability of military equipment for its army, navy and air force as well as other associated law enforcement agencies. This is also due to the escalation of threats emanating from cross-border terrorism and the aggressive and expansionist behaviour of its neighbouring nations, increasing New Delhi's threat perceptions. Another common factor between the two nations is the economic motivation of having a robust defence industry to enable transfer of indigenously developed weapon systems to help in earning valuable foreign exchange, thereby reducing the import bills. This, in turn, could initiate the subsidisation of the nation's annual defence budget. In the past few years, India-Israel defence collaboration has become a significant aspect of the enhancing strategic partnership between the two nations. The defence cooperation related to arms trade in addition to technology transfers and licensed production has become an important dimension of this strategic partnership. In the past eight years, Israel's share in the Indian defence sector has increased swiftly, with Indian arms imports from Israel increasing by almost 175 per cent from 2015 to 2019. This makes Israel the second-largest supplier of major arms to India.⁵ In 2017, for the first time, the Indian Air Force took part in the Blue Flag exercise at the Uvda air force base in the south of Israel where top Garud commandos and Hercules C-130J-30 aircraft of the Indian Air Force were deployed. The growth of defence cooperation is signalled by the use of Israeli technology in the fields of missiles, air defence systems, UAVs and many more arenas pertaining to the military.

5. Pieter D. Wezeman, et al., "Trends In International Arms Transfers, 2019", *SIPRI*, March 2020, at <https://www.sipri.org/publications/2020/sipri-fact-sheets/trends-international-arms-transfers-2019#:~:text=The%20volume%20of%20international%20transfers,%2C%20France%2C%20Germany%20and%20China>. Accessed on February 11, 2022.

The Israeli Heron is the MALE UAV primarily employed for intelligence, surveillance, target acquisition and reconnaissance purposes. It is a high-endurance UAV which can soar up to the height of almost 35,000 ft. for beyond 45 hours.

UNMANNED AERIAL VEHICLES

India needs material and technical support in specialised avionics, airborne radars, electronic warfare equipment, Surface-to-Air Missiles (SAMs), and Unmanned Aerial Vehicles (UAVs), etc. apart from other equipment in which Israel can be helpful to India. One such example of this is of the Israeli high technology company Elbit Systems, dealing in wide-ranging defence, homeland and security programmes initiating a collaborative effort with Adani Defence in Hyderabad for the manufacture of the Hermes drones in 2018.⁶ The 50,000-sq ft. sophisticated facility is the foremost Israeli venture outside its territory for manufacturing the Hermes 900 Medium Altitude Long Endurance (MALE) UAV. Elbit System's other co-venture with Alpha Design Technologies was also initiated—this Israeli enterprise is associated with Bharat Electronics Limited (BEL) for developments in the electronic warfare and electro-optics sectors.⁷

The Israeli Heron is the MALE UAV primarily employed for intelligence, surveillance, target acquisition and reconnaissance purposes.⁸ It is a high-endurance UAV which can soar up to the height of almost 35,000 ft. for beyond 45 hours. It has a visual Line-Of-Sight (LOS) range of 350 km and a Beyond-Line-Of-Sight (BLOS) range of 1,000 km.⁹ In the case of the Heron

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6. "Adani Defence and Aerospace and Elbit Systems Inaugurate India First Private Unmanned", *Adani Defence and Aerospace*, December 14, 2018, at <https://www.adanidefence.com/newsroom/media-release/Adani-Defence-and-Aerospace-and-Elbit-Systems-inaugurate-India-first-private-Unmanned>. Accessed on February 12, 2022.
 7. Seth J. Frantzman, "New Joint Ventures Hint at 'Burgeoning Relationship' Between Israel and India", *Defence News*, February 18, 2020, at <https://www.defensenews.com/industry/2020/02/18/new-joint-ventures-hint-at-burgeoning-relationship-between-israel-and-india/>; "Israel India's Natural Airspace Partner", *Air Asia*, May 6, 2020, at <https://airpowerasia.com/2020/05/06/israel-indias-natural-aerospace-partner/>. Accessed on February 11, 2022.
 8. "Heron Multi-Role MALE UAS", Israel Aerospace Industries, 2019, at <https://www.iai.co.il/p/heron>. Accessed on May 4, 2022.
 9. Ibid.

UAV, for BLOS manoeuvres, the visual feed is relayed to the control room through Satellite Communication (SATCOM).¹⁰ Considering that in the case of India, that faces threats from its adversaries on both its eastern and western fronts, the use of such drones for intelligence gathering provide efficiency with their requisite equipment. Furthermore, an all-purpose UAV like the Heron can provide an edge in India's harsh weather conditions in its northern sector. The order for 16 of these drones was placed by India with Israel in 2009 and the same were delivered in 2012-13 at an estimated value of US\$ 239 million. In 2016, the Indian government also approved the multi-million dollar plan to acquire the Heron TP-XP variant, using a varied payload.¹¹

Another UAV, the Searcher, is a multi-mission tactical UAV for surveillance, reconnaissance, target acquisition, artillery adjustment and damage assessment.

In February 2019, New Delhi was in discussions to buy the Heron-1 long-endurance reconnaissance UAVs from Israel.¹² Another UAV, the Searcher, is a multi-mission tactical UAV for surveillance, reconnaissance, target acquisition, artillery adjustment and damage assessment. The Searcher is skilled in real-time information gathering and data transmission along with the ability to fly continuously for around 20 hours within the range of 300 km.¹³ The stealth capabilities—which include reduced radar detection and a silent gasoline engine—of the Heron UAV make it a desirable platform. Israel Aerospace Industry (IAI) has also signed a Memorandum of Understanding (MoU) as part of the strategic partnership with India's Hindustan Aeronautics Limited (HAL) and Dynamatic Technologies Limited for its 'Make-in-India'

10. Ibid.

11. Manu Pubby, "Govt Approves \$400 Million Plan to Procure Armed Heron TP Drones from Israel," *The Economic Times*, July 14, 2018, at <https://economictimes.indiatimes.com/news/defence/government-approves-400-million-plan-to-procure-armed-heron-tp-drones-from-israel/articleshow/48906195.cms?from=mdr>. Accessed on May 4, 2022.

12. "India Set to Buy 50 Israeli Heron-1 Long-Endurance Reconnaissance UAVs in Reported \$500 Million Deal", *Military Aerospace Electronics*, February 26, 2019, at <https://www.militaryaerospace.com/unmanned/article/16711574/india-set-to-buy-50-israeli-heron1-longendurance-reconnaissance-uavs-in-reported-500-million-deal>. Accessed on May 5, 2022.

13. "Searcher Mk III: Tactical UAS", Israel Aerospace Industry, at <https://www.iai.co.il/p/searcher-mk-iii>. Accessed on May 4, 2022.

UAVs.¹⁴ Furthermore, an agreement was also signed between HAL and Elbit Systems for the joint development of a Vertical Take-off and Landing (VTOL) rotary UAV of the 2,000-kg class.¹⁵

SENSORS AND OTHER EQUIPMENT

India has acquired numerous sensors from Israel for Intelligence, Surveillance and Reconnaissance (ISR) purposes for its naval aircraft and vessels. They are majorly the EL/M-series radars¹⁶ developed and produced by ELTA Systems with IAI. These are primarily utilised for ground surveillance, versatile air search operations and fire control radars. India had also imported key naval radars from Israel in the past decade which include the EL/M 2248 MF-STAR and EL/M-2221 Search Track and Guidance/Gunnery Radar (STGR). The EL/M 2248 MF-STAR is a digital Active Electronically Scanned Array (AESA) multi-function radar to be used for maritime surveillance.¹⁷ Furthermore, in 2013, the Indian government permitted acquisition of four more radars to be deployed on the INS *Visakhapatnam* (Project-15B) destroyer.¹⁸ Similarly, in 2016, India also acquired the multi-function radar for its indigenously built Kolkata-class (Project-15A) destroyer.¹⁹ In this, the EL/M-2221 STGR is important—it is a fire control radar that directs the

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14. "IAI Enters Strategic UAV Collaboration with HAL and DTL at DefExpo", Israel Aerospace Industries, February 5, 2020, at <https://www.iai.co.il/iai-strategic-uav-collaboration-with-hal-and-dtl>. Accessed on February 11, 2022.
 15. "MoU Between HAL and Elbit Systems ISTAR Division, Israel Signed", Hindustan Aeronautics Limited, February 5, 2020, at https://hal-india.co.in/MoU%20Between%20HAL%20and%20Elbit%20Systems%20ISTAR%20Division,%20Israel%20Signed/ND__290. Accessed on February 12, 2022.
 16. The ELM-2084 is an Israeli ground-based mobile 3D advance technology Active Electronically Scanned Array (AESA) radar from the family of Multi-Mission Radar (MMR) produced by ELTA which is a subsidiary of Israel Aerospace Industries.
 17. "ELM-2248 MF-STAR: Multi-Function Digital AESA Radar", Israel Aerospace Industries, at <https://www.iai.co.il/p/elm-2248-mf-star>. Accessed on May 5, 2022.
 18. PTI, "Defence Ministry Clears Purchase of Military Items Including Israeli Anti-Missile Radars", *The Economic Times*, February 13, 2013, at <https://economictimes.indiatimes.com/news/politics-and-nation/defence-ministry-clears-purchase-of-military-items-including-israeli-anti-missile-radars/articleshow/18486237.cms?from=mdr>. Accessed on May 6, 2022.
 19. Rear Admiral Sushil Ramsay (Retd), "Project 15B – Multi-Mission Destroyers on the Roll", *SP's Naval Forces*, April 2016, at <https://www.spsnavalforces.com/story/?id=432>. Accessed on May 6, 2022.

warhead to air or sea-based targets.²⁰ From 2015 to 2017, India imported the EL/M-2221 STGR radar for developing the INS *Kolkata*, INS *Shivalik* and Kamorta class frigates, consistent with deploying the Barak-8 SAM missiles.²¹ Another EL/M-2032 is a multi-mode aerial fire control radar intended for attack operations in air-to-air and air-to-sea combat.²² In 2016-18, 9 EL/M 2032 were imported from IAI to be utilised in the indigenously produced Tejas Light Combat Aircraft (LCA) Mk-I.²³ The AWACS EL/M-2075 Phalcon is considered to be India's first 'eyes in the skies' kind of technique for its air force. This was first inducted in 2009 and two more of these were ordered in 2020, worth US\$ 1 billion, from IAI.²⁴ The Phalcon is utilised for ISR information gathering in the BLOS range against incoming missiles or aircraft in the skies.

India and Israel are also cooperating in developing various targeting and ISR systems. For instance, the Indian Air Force has procured the Litening 2 and Litening 4 advanced targeting pods to be installed on the Mirage 2000s, Su 30s, Jaguars and LCA Mk 1As. Furthermore, this system is also compatible with India's newest acquisitions, the Rafale fighters. Another significant acquisition of the Indian Air Force from Israel is the software defined radios provided by Rafael (Israel) for the Indian Air Force's network-centric operations.²⁵ Rafael has also invested in the Astra Rafael Company in the form of a joint venture, located in Hyderabad. In 2020, IAI and Bharat Electronics Limited (BEL) signed an MoU to launch a new technical and maintenance support centre for India's air defence systems.

20. "EL/M-2221 STGR Radar", at <https://www.deagel.com/Sensor%20Systems/ELM-2221/a001229>. Accessed on May 7, 2022.

21. A K Sachdev, "Indo-Israel Defence: Cooperation and Future Prospects", *Indian Defence Review*, vol. 35.1, January-March 2020.

22. "ELM-2032: Multimode Airborne Fire Control Radar", Israel Aerospace Industries, at <https://www.iai.co.il/p/elm-2032>. Accessed on May 7, 2022.

23. Harsh V. Pant and Ambuj Sahu, "Israel's Arms Sales to India: Bedrock of a Strategic Partnership", *ORF Issue Brief No. 311*, September 2019, at https://www.orfonline.org/research/israels-arms-sales-to-india-bedrock-of-a-strategic-partnership-55101/#_ednref16. Accessed on May 1, 2022.

24. Rajat Pandit, "Ladakh Stand-off: India to Order 2 More Israeli 'Eyes in the Skies' for \$1 Billion", *The Times of India*, August 27, 2020, at <https://timesofindia.indiatimes.com/india/india-to-order-2-more-israeli-eyes-in-sky/articleshow/77774435.cms>. Accessed on May 7, 2022.

25. *Ibid.*

Israel's UVision, responsible for the manufacturing of loitering munitions, has also signed a joint venture agreement with the Indian company Aditya Precitech known as Avision to produce the Precision Attack Loitering Munition (PALM) Hero system. So, Israel's state-of-the-art defence and technological expertise can become the main pillar of India's drive for a self-reliant defence industry. The Indian Defence Research and Development Organisation (DRDO) and the Israeli Directorate of Defence Research and Development have also entered into a bilateral agreement to endorse the development of technologies for both military and commercial usage. As part of this agreement, the Indian and Israeli start-up companies will work together on technologies such as small UAVs and artificial intelligence.²⁶ HAL and Elbit have also signed an agreement for digital head-up displays. These systems will integrate new characteristics i.e., 'wide instantaneous' and 'total field of view' with negligible binocular disproportions.²⁷

Besides sensors, the combat squadrons of the Indian Air Force are also supported by the Israeli guided bombs, the SPICE-2000 and Griffin. The SPICE guidance kits advance the general missile warheads into deadly automated precision strike bombs. They can be adapted to diverse aircraft and can strike at a 60 km range. These are manufactured by Rafael Advanced Defence Systems, which make the SPICE-2000, the highly advanced bomb utilising the image-matching algorithm to strike at targets. The algorithm equates with the real-time electro-optic visions of the location of the mission with the previously fed information (in the bomb) related to the target which is obtained through surveillance. Once these images match, the SPICE automatically launches the warhead to the target with high precision. In the most recent example, Mirage-2000 fighter aircraft were equipped with the

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26. Moyoru Baba and Takeshi Kumon, "India, Israel Aim to Boost Ties through Defence Tech and Trade", *Nikkei Asia*, November 28, 2021, at <https://asia.nikkei.com/Politics/International-relations/India-Israel-aim-to-boost-ties-through-defense-tech-and-trade#:~:text=That%20follows%20an%20October%20agreement,bilateral%20FTA%20by%20June%202022>. Accessed on February 13, 2022.
27. "HAL Signs MoU with Elbit Systems for Digital Head-Up Displays for Fighter Planes", *Economic Times*, February 6, 2020, at <https://economictimes.indiatimes.com/news/defence/hal-signs-mou-with-elbit-systems-for-digital-head-up-displays-for-fighter-planes/articleshow/73981655.cms>. Accessed on February 12, 2022.

SPICE-2000 bombs that were used during the Balakot air strikes in February 2019.²⁸ The Indian Air Force also procured 100 SPICE-kits from Israel in the year 2008-09 and signed another multi-million dollar deal with Israel in June 2019 to acquire another consignment of these SPICE-2000 bombs.²⁹

Developed by IAI, the Griffin utilises the laser-guided element, especially in the case of combat aircraft to conduct high-precision strikes against ground targets.³⁰ It can take numerous courses to counter the air defence system of the adversary. It can also be launched from ground-based platforms.³¹ Loitering munition (or kamikaze/suicide) drones³² integrate the features of UAVs and these types of guided bombs. These munitions wander around the target area for some time before locking in on the targets to destroy them. One type of such equipment in use by the Indian Air Force is the Harop which is also known as the suicide drone. The Harop is an electro-optically guided weapon system that is considered to be the most suitable for striking down moving targets.³³ Its communication range is 200 km and it has an endurance capacity of more than nine hours in a single refuelling.³⁴ In February 2019, the Indian Air Force had inducted more than 50 Harop drones.³⁵ The Crystal Maze is an Indian version of the Air-to-Surface Missile (ASM)—the AGM-142A Popeye. This was jointly developed by the Israeli company Rafael and the American

28. Dev Goswami, "SPICE-2000: Know all About the Smart Bomb Indian Air Force Used for Balakot Airstrike", *India Today*, March 5, 2019, at <https://www.indiatoday.in/fyi/story/spice-2000-indian-air-force-balakot-airstrike-mirage-jets-1470988-2019-03-05>. Accessed on May 8, 2022.

29. "IAF inks Rs 300 crore Deal to Procure Spice Bombs from Israel", *The Economic Times*, June 7, 2019, at <https://economictimes.indiatimes.com/news/defence/iaf-inks-rs-300-crore-deal-to-procure-spice-bombs-from-israel/articleshow/69694463.cms>. Accessed on May 9, 2022.

30. "GRIFFIN III", Israel Aerospace Industry, at <https://www.iai.co.il/p/griffin-iii>. Accessed on May 9, 2022.

31. *Ibid.*

32. The loitering munition is a class of UAV designed to be employed with BLOS ground targets with explosive warheads. Read more at: Dan Gettinger and Arthur Holland Michel, "Loitering Munitions", Centre for the Study of Drone, Bard College, at <https://dronecenter.bard.edu/files/2017/02/CSD-Loitering-Munitions.pdf>. Accessed on May 9, 2022.

33. "HAROP: Loitering Munition System", Israel Aerospace Industry, at <https://www.iai.co.il/p/harop>. Accessed on May 10, 2022.

34. *Ibid.*

35. Anil Chopra, "Need to Prioritise IAF's Unmanned and Defensive Capabilities", *Indian Defence Review*, vol 37.1, January-March 2022, at <http://www.indiandefencereview.com/news/need-to-prioritise-the-iafs-unmanned-offensive-and-defensive-capability/>. Accessed on May 10, 2022.

The Barak-8 missile is driven by an indigenously developed rocket motor and control system for high manoeuvrability in the terminal phase. This is jointly developed by Israel Aerospace Industries and India's Defence Research and Development Organisation (DRDO).

company Lockheed Martin. It can be used to attack targets at a distance of 75-80 km on both land and sea with high accuracy. Due to its high range capacity, it allows the carrier aircraft to evade the adversary's air defence systems. In 2010, India imported 30 Crystal Maze missiles from Israel which were also utilised during the Balakot air strikes together with the SPICE-2000 precision-guided bombs.³⁶

MISSILES

Israel has also supported India in its Ballistic Missile Defence (BMD) and space satellite programmes.³⁷ Furthermore, India and

Israel have jointly developed the Barak-8 Medium Range Surface-to-Air Missile (MRSAM) air defence system. The Barak-8 missile is driven by an indigenously developed rocket motor and control system for high manoeuvrability in the terminal phase. This is jointly developed by Israel Aerospace Industries and India's Defence Research and Development Organisation (DRDO). Several other Indian and Israeli companies are involved in this project such as Rafael, Bharat Electronics Limited, Bharat Dynamics Limited and Larsen & Toubro.³⁸ So, it is clear that the partnership between India and Israel is quite crucial for India's future security and the success of its 'Make in India' initiative in terms of defence production; and it is also crucial for the success and accomplishment of both nations as well as taking full advantage of these military and commercial engagements which

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36. Priyarag Verma, "Decoding IAF's Lethal Arsenal that Destroyed Pakistani Terror Camps" *DNA India*, February 26, 2019, at <https://www.dnaindia.com/india/report-decoding-iaf-s-lethal-arsenal-that-destroyed-pakistani-terror-camps-2724402>. Accessed on May 10, 2022.
37. "Israel India's Natural Airspace Partner", *Air Asia*, May 6, 2020, at <https://airpowerasia.com/2020/05/06/israel-indias-natural-aerospace-partner/>. Accessed on February 11, 2022.
38. Rahul Singh, "IAF Inducts Barak 8 Air Defence System that can Hit Multiple Targets 70 km Away", *Hindustan Times*, September 9, 2021, at <https://www.hindustantimes.com/india-news/iaf-inducts-barak-8-air-defence-system-that-can-hit-multiple-targets-70km-away-101631198455089.html>. Accessed on February 14, 2022.

can further strengthen the India-Israel strategic partnership in the defence domain.

The Beyond-Visual-Range-Air-Air-Missile (BVRAAM) arsenal of the Indian Air Force also comprises the Rafael-produced missiles Python-5 and Derby.³⁹ The Python-5 is a full-sphere infrared air-to-air missile which can be fired in all directions and at certain angles.⁴⁰ It is a dual-use missile system which can also be fired from ground platforms and has exclusive Lock-On After Launch (LOAL) and Lock-On Before Launch (LOBL) features. Furthermore, the Python-5 has a unique capability to be compliant with the technologies of various types of aircraft. So, all these aspects make such technology and equipment very useful for the Indian Air Force, owing to its varied fleet which includes Mirages, Jaguars, MiG-21s, MiG-29s, Su-30s, indigenously developed Light Combat Aircraft (LCA) Tejas and, most recently, Rafales. Additionally, the Python-5 is supported by the Derby which is an active radar air-to-air missile. It can be used for both short ranges and Beyond Visual Range (BVR) interceptions. These were delivered to India in 2017 along with 150 Derby missiles which are now a significant component of India's air defence system. It should be noted here that it was a Derby that shot down the Pakistani patrolling drone following the Indian Air Force's air strikes at terror camps at various places in Pakistan and Pakistan Occupied Kashmir (POK). It destroyed the camps and eliminated a significant number of terrorists in February 2019.⁴¹

The partnership between India and Israel is quite crucial for India's future security and the success of its 'Make in India' initiative in terms of defence production.

39. "DRDO Conducts Maiden Trial of Python-5 Air to Air Missiles", Press Information Bureau, April 28, 2021, at <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1714563>. Accessed on May 8, 2022.

40. "Python-5 Air-to-Air Missile (AAM), Israel", *Air Force Technology*, June 28, 2021, at <https://www.airforce-technology.com/projects/python-5-air-to-air-missile-aam-rafael-israel/>. Accessed on May 8, 2022.

41. "Israeli Spyder Used to Shoot Down Pakistani Drone in Gujarat", *Business Standard*, February 26, 2019, at https://www.business-standard.com/article/news-ani/israeli-spyder-used-to-shoot-down-pakistani-drone-in-gujarat-119022600672_1.html. Accessed on May 8, 2022.

MILITARY EXERCISES: A FACTOR IN THE CONSOLIDATION OF THE RELATIONSHIP

Military diplomacy has long been one of the crucial components of international diplomacy and an effective methodology to promote bilateral and regional relationships. Military exercises between nations also form a part of this military diplomacy which nations take up in order to diversify their strategic relations with other nations, both bilaterally or multilaterally. In the past few years, India has also increased the pace of joint military exercises with both neighbouring and faraway nations in order to promote peace and stability in its neighbouring regions as a means to achieve long-term security as well as power projection at both regional and global levels. This has become one of the important objectives of the Indian foreign policy through which New Delhi is promoting intensification and consolidation of ties with its neighbours. It can also be said that through these military exercises, the militaries of collaborating nations promote professional communication and augmentation of operational knowledge, apart from strengthening bilateral relations. Thus, this provides an opportunity to enhance operational capability and interoperability between two militaries.

Exercise Blue Flag 2021: The 'Blue Flag' is a multinational military exercise hosting friendly air forces from around the world. This exercise saw the participation of the Indian Air Force with the host i.e., the Israeli Air Force. The exercise took place in Israel from October 13-28, 2021. The Indian Air Force contingent participated with five Mirage 2000s, two IL-78s and two C-17 aircraft. Apart from India and the host country, Israel, nations such as Germany, Italy, UK, France, Greece and the United States flexed their muscle in a volatile and troubled West Asian region to demonstrate consolidation. The noteworthy point here being that both India and Israel participated together in this exercise which had key points. First, it was the first ever deployment of the IAF Mirage 2000 in Israel; second, it was the first deployment of the French Rafale in Israel as also the first ever deployment of a British fighter squadron in Israel since the country gained independence in 1948. Third, it was the largest and the most cutting-edge exercise ever held

in Israel. Since the air forces came from different regions of the world with their own weapon systems, cultures, ethos and operating procedures, many of them were operating together for the first time. So, the challenge was to get everyone on the same page and to facilitate this, all the participating forces stayed at one location. According to Flight Lieutenant Aakash, a Mirage 2000 pilot of the Indian Air Force, who was also participating in the exercise, "Each air force has its own culture, both professionally and socially. Understanding how each force operates is a unique experience for us. We learn from other nations and they learn from us, that's how we manage to improve and become a better air force."⁴²

The theme of the exercise was to integrate fourth and fifth generation aircraft in complex operational scenarios. It is a technical requirement of air forces around the world wherein the nations cannot afford to use fifth generation fighters only. Therefore, there arises a need to mix the fourth and fifth generation aircraft which would enhance the operational capability of the force being deployed. With this aim, the 'Blue Flag' exercise, combined the two generation aircraft from different air forces in order to utilise the relative advantages of each platform in heterogeneous scenarios. According to Major General Amikam Norkin, the commander of the Israeli Air Force, "This exercise is ground-breaking in terms of technology, quality of training and the number of participating nations. It illustrates the partnership and strong bond between the nations' air forces and acts as a stepping stone towards regional and international cooperation."⁴³

The German Air Force chief visited Israel for three days during the exercise and also took part in a flypast over Jerusalem along with the Israeli chief, marking the first occasion for a German military aircraft to fly over Jerusalem after World War I. Furthermore, the Commander of the UAE Air Force, Major General Staff Pilot Ibrahim Nasser Mohammed Al Alawi also paid a historic visit to Israel to witness the exercise even though the UAE

42. Chaitali Bag, "Exercise Blue Flag 2021 in Israel Showing Muscle in the Mediterranean Region", *Aviation and Defence Universe*, October 26, 2021, at <https://www.aviation-defence-universe.com/exercise-blue-flag-2021-in-israel-showing-muscle-in-the-mediterranean-region/> Accessed on January 23, 2022.

43. *Ibid.*

Air Force was not participating. This signalled the emerging bonhomie in Arab-Israel relations. Also, the Indian External Affairs Minister S. Jaishankar and the Indian Defence Secretary Dr Ajay Kumar visited the Uvda air base, in Israel and interacted with the IAF contingent. After meeting with the IAF contingent, Dr Ajay Kumar mentioned, "Great to visit Uvda Air Base, Israel, and meet with the IAF contingent participating in the multinational Exercise 'Blue Flag.' Wonderful to see the professionalism and *josh* of the Indian air warriors, making India and the IAF proud."⁴⁴ India and Israel have had a long and fruitful defence relationship which is visible in the extensive defence and strategic relations between the two nations.

BEYOND ARMS TRANSFER

The strategic collaboration between India and Israel has increased considerably in the past two decades. This has moved from the areas of arms trade to space, counter-terrorism and intelligence sharing. This became visible when the Indian Space Research Organisation (ISRO), along with the Israel Space Agency (ISA) collaborated on various joint programmes as part of bilateral space cooperation. In January 2008, ISRO launched the TecSAR—the Israeli Synthetic Aperture Radar (SAR) satellite. This was followed by the launch of the RISAT-2, which is India's own IAI-assisted radar imaging satellite.⁴⁵

In January 2018, India and Israel had also signed a Memorandum of Understanding (MoU) on cyber security during Israeli Prime Minister Netanyahu's visit to India in 2018.⁴⁶ Through this MoU, both nations seek to promote collaboration in skill development and training programmes in the area of cyber security. Israel's thriving expertise in this sector can help Indian industries in developing cyber infrastructure. The large market for

44. Ibid.

45. N.A.K. Browne, "A Perspective on India-Israel Defence and Security Ties", *Strategic Analysis* 41, no. 4, 2017, pp. 325-335, at <https://www.tandfonline.com/doi/abs/10.1080/09700161.2017.1330934>. Accessed on May 5, 2022.

46. "List of MoUs/Agreements Signed During the Visit of Prime Minister of Israel to India (January 15, 2018)", Ministry of External Affairs, January 15, 2018, at https://mea.gov.in/bilateral-documents.htm?dtl/29356/List_of_MoUsAgreements_signed_during_the_visit_of_Prime_Minister_of_Israel_to_India_January_15_2018. Accessed on May 6, 2022.

cyber operations in India can help various upcoming start-ups. The MoU also visualises the promotion of business-to-business enterprises in terms of cyber security operations and organising high-level meetings between the two nations. For instance, Tech Mahindra (India) is collaborating with the Israel-based ELTA Systems to make cyber solutions available to the Indian government and other private organisations.⁴⁷ This discussion indicates the strategic cooperation between India and Israel, underlining the immense potential in this sector which can be utilised through collaboration between the two nations. Even though the arms trade remains the bedrock of the bilateral engagement, both India and Israel are gearing up for much wider convergence. At present, it can be said that the time is apt for India to utilise Israel's technological proficiency to modernise its indigenous defence industry.

CONCLUSION

Two nations that gained independence from colonial rule at the same time took four decades to establish diplomatic relations. While decades may appear to be too long in an individual's life, in the lifetime or history of nations their significance may not be as much as it is perceived to be. Nonetheless, the last century has seen a lot of churning in the comity of nations and three decades of diplomatic relations is indeed a milestone that needs to be commemorated. Despite Israel's alliance with the US and Europe in its formative years as a nation, and India's non-aligned policy, both countries remained democratic in their own ways and respected each other's outlook, without being judgemental. For the Jews, the independence of Israel was a vindication of their faith and resolve as it was for the Indians with their non-violent movement and the freedom struggle, leading to independence from colonial rule. Having established diplomatic relations in 1992, the Defence Wing at the Indian Embassy in Tel Aviv was started in 1995 with then Group Captain NAK Browne, who later became the Chief

47. "IAI/ELTA, Tech Mahindra Announce Cybersecurity Partnership", *Israel Defence*, March 10, 2018, at <https://www.israeldefense.co.il/en/node/35830>. Accessed on May 6, 2022.

of the Air Staff (COAS) in 2011. Facing hostile neighbours, having a diverse culture that becomes a melting pot, and strong and resilient democracies, both nations are intertwined by these bonds that have only strengthened over the years.

Israeli assistance to India during the Kargil War of 1999 further deepened the defence partnership, which today has culminated in Israel becoming the second largest exporter of arms to India: from integrating the Phalcon radar on the IL-76 platform to give India its first AWACS, to the drones, missiles, ranging and tracking pods, small arms, electronic warfare pods and equipment, the defence relations span the entire spectrum. In the recent past, cooperation in space, with the launch of satellites, has also taken place. Collaborations between Israeli companies and Indian public and private sector enterprises have been established for the 'Make in India' project for varied equipment and platforms. There has also been joint development and production of the Barak-8 MRSAM which has already entered service and is a part of the Indian armed forces' inventory. The Indian Air Force participated in the Blue Flag international exercise, hosted by Israel in October 2021 that saw many countries, from the US to Germany, France, UK, Italy and Greece, flexing their muscle in a show of solidarity in the troubled West Asian region. The Indian External Affairs Minister, S. Jaishankar and the Defence Secretary, Dr Ajay Prasad visited Israel during the exercise and interacted with the participants.

Indo-Israel relations have continued to grow and prosper ever since their inception in 1992. The defence cooperation between the two countries is an inalienable and strategic component of the relationship which will continue to flourish in the years ahead. Mutual participation in military exercises, which has just begun, will lead to greater transparency, understanding and building of trust that will go a long way in strengthening the defence cooperation between India and Israel.