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THE INDIA-ISRAEL DEFENCE AND SECURITY PARTNERSHIP AT 30

S. Samuel C. Rajiv



MANOHAR PARRIKAR INSTITUTE FOR
DEFENCE STUDIES AND ANALYSES

मनोहर पर्रिकर रक्षा अध्ययन एवं विश्लेषण संस्थान

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INTRODUCTION

India-Israel relations took on a new dimension after Prime Minister Narendra Modi's visit to Jerusalem in July 2017. Bilateral relations are on a strong footing, with strengthened cooperation in the defence sector, apart from robust people-to-people links. Israel, for instance, accounted for the largest number of foreign tourist arrivals (FTA) from West Asia during 2017-19, at nearly 200,000 visitors cumulatively for that period, followed by visitors from the United Arab Emirates (UAE), at about 180,000.¹

India-Israel bilateral trade, from around US\$ 500 million in 1995, peaked to around US\$ 6.7 billion in 2011-12 but dropped to US\$ 4.6 billion in 2020-21, in the wake of the pandemic. In 2021-22, bilateral trade increased to US\$ 6.9 billion, a growth of nearly 50 per cent. The bilateral trade, though, is more often described as made up of 'diamonds and defence', as these components are the defining characteristics of the relationship. Trade in HS Classification code 71, relating to natural or cultured pearls and/or precious stones, for instance, during the last five years accounted for 36.7 per cent of total trade (US\$ 9.5 billion out of a total cumulative trade of US\$ 25.8 billion during this period).²

¹ Ministry of Tourism, Government of India, 'India Tourism Statistics 2020', at <https://tourism.gov.in/sites/default/files/2021-05/INDIA%20TOURISM%20S-TATISTICS%202020.pdf> (Accessed February 10, 2022).

² Ministry of Commerce and Industry, 'Export Import Data Bank', at <https://tradestat.commerce.gov.in/eidb/default.asp> (Accessed April 30, 2022).

As for the volume of defence trade, A.K. Antony, the then Defence Minister, informed the Upper House of Parliament (Rajya Sabha) in May 2007 that ‘defence purchases’ from Israel during 2002-2007 were over \$5 billion.³ Prior to this, in August 2005, Deputy Defence Minister B.K. Handique told the Rajya Sabha that ‘the total value of the purchase contracts’ with Israel during 2002-2005, for purchase of ‘military hardware, equipment and ammunition’, was Rs. 11,882.54 crores.⁴ These amount to, perhaps, the two occasions when the Government of India informed Parliament of the financial value of India-Israel defence cooperation.

In recent times, as during 2016-20, India accounted for 43 per cent of Israel’s total arms exports, with Azerbaijan a distant second, accounting for 17 per cent.⁵ Israel was the eighth-largest arms exporter globally during this period, accounting for 3 per cent of global arms exports, after the US, Russia, France, Germany, China, the United Kingdom and Spain. During 2017-21, India’s share in Israel’s global exports fell to 37 per cent, followed by Azerbaijan (13 per cent) and Vietnam (11 per cent), respectively.⁶ Missiles and sensors overwhelmingly make up the quantum of defence exports from Israel. Since 2000, for instance, Israel has exported more than \$13 billion worth of defence equipment, as per the Stockholm Peace Research Institute (SIPRI) Trend Indicator

³ Rajya Sabha, ‘Defence deals between India and Israel’, Unstarred Question 4481, May 16, 2007, at <https://rajyasabha.nic.in/rsnew/Questions/QResult.aspx> (Accessed August 20, 2021).

⁴ Rajya Sabha, ‘Establishing chemical plants in Bihar by Israel’, Unstarred Question 1786, August 10, 2005, at <https://rajyasabha.nic.in/rsnew/Questions/QResult.aspx> (Accessed August 20, 2021).

⁵ Pieter D. Wezeman, Alexandra Kuimova and Siemon T. Wezeman, ‘Trends in international arms transfers 2020’, Stockholm International Peace Research Institute, March 2021, p. 2, at https://sipri.org/sites/default/files/2021-03/fs_2103_at_2020.pdf (Accessed August 25, 2021).

⁶ Pieter D. Wezeman, Alexandra Kuimova and Siemon T. Wezeman, ‘Trends in international arms transfers 2021’, Stockholm International Peace Research Institute, March 2022, p. 2, at https://www.sipri.org/sites/default/files/2022-03/fs_2203_at_2021.pdf (Accessed May 5, 2022).

Values (TIVs). Out of these, missiles and sensors make up 58 per cent of the volume.⁷

Russia, meanwhile, was India's biggest arms supplier during 2017-21, accounting for 46 per cent of the country's imports.⁸ During the previous five year period, 2012-16, India's arms imports from Russia stood at nearly 70 per cent of its total arms imports.⁹ France (18 per cent) and Israel (13 per cent), other than Russia, made up the top three arms suppliers to India during 2016-20.¹⁰ While India imported 18 per cent of its arms from France during this period, French exports to India accounted for 21 per cent of that country's total arms exports, ahead of Egypt and Qatar, at 20 and 18 per cent, respectively.¹¹ During 2017-21, French arms exports to India increased dramatically, accounting for 27 per cent of India's total imports, with the United States accounting for 12 per cent of India's arms imports, displacing Israel at the third position.¹²

STRENGTHENED PARTNERSHIP POST-2014

Prior to 2014, India's relations with Israel in particular and its approach towards the West Asian region in general, has been characterised as a 'fine balance', 'the delicate balance', and 'straddling fault lines'.¹³ In the

⁷ SIPRI, 'TIV of arms exports from Israel, 2000-2021' at <https://armstrade.sipri.org/armstrade/page/values.php> (Accessed May 5, 2022).

⁸ Pieter D. Wezeman et. al, no. 6, p. 6.

⁹ Ibid., p. 9.

¹⁰ Pieter D. Wezeman et. al, no. 5, p. 6.

¹¹ Ibid., p. 2.

¹² Pieter D. Wezeman et. al, no. 6, p. 2.

¹³ Harsh V. Pant, 'A Fine Balance: India Walks a Tightrope between Iran and the United States', *Orbis*, Summer 2007; Sushil J. Aaron, 'Straddling Faultlines: India's Foreign Policy towards the Greater Middle East', CSH Occasional Paper No. 7, August 2003, at <http://www.csh-delhi.com/publications/downloads/ops/OP7.pdf> (Accessed April 25, 2011); S. Samuel C. Rajiv, 'The Delicate Balance: Israel and India's Foreign Policy Practice', *Strategic Analysis*, 36 (1), January 2012, pp. 128-144; See also Elliot Jager, 'Limited Partnership', August 16, 2010, at <http://www.jewishideasdaily.com/content/module/2010/8/16/main-feature/1/limited-partnership> (Accessed April 25, 2011).

September 10, 2003 Delhi Statement on Friendship and Cooperation, signed when Prime Minister Ariel Sharon visited India – the first ever visit by an Israeli Prime Minister – India and Israel had pledged to enhance the frequency of political and business interactions.¹⁴

While there was significant political traffic, with cabinet ministers and state chief ministers visiting Israel prior to 2017, high-level political interaction was missing. The term ‘strategic partner’ was also conspicuously absent in major bilateral documents like the September 2003 Joint Statement. Senior Indian cabinet ministers on their part, highlighted the need not to advertise their close defence and security relationship.

To be sure, India’s high-level political interactions not just with Israel, but with other significant countries in West Asia like Saudi Arabia and Iran, were infrequent prior to 2014. India’s West Asia policy, wading through the regional geopolitical hotspots though, continued to expand the space for the pursuit of its national interests. India, for instance, engaged multiple regional players, even if these countries had inimical or non-existent relations bilaterally between themselves.

The Modi government built on the foundations of the robust India-Israel defence and security engagement and took it to a whole new dimension. Prime Minister Modi assumed office in mid-2014, in the wake of the significant electoral victory achieved by the Bharatiya Janata Party (BJP)-led coalition. The BJP has been at the forefront of advocating stronger ties between India and Israel and its leaders have repeatedly expressed appreciation for Israel’s muscular counter-terrorism and national security policies. Earlier in May 2006, as Chief Minister of Gujarat, Modi paid a successful visit to Israel, to attend a conference on agriculture technology.

¹⁴ Ministry of External Affairs, ‘Delhi Statement on Friendship and Cooperation between India and Israel’, September 10, 2003, at <https://mea.gov.in/bilateral-documents.htm?dt1/7730/Delhi+Statement+on+Friendship+and+Cooperation+between+India+and+Israel> (Accessed August 25, 2021).

Prime Minister Modi met with Prime Minister Netanyahu on the sidelines of the United Nations General Assembly (UNGA) in New York on September 28, 2014, the only second occasion when the Prime Ministers of India and Israel had met in the preceding eleven years. Netanyahu extended an invitation to Modi to visit Israel during this New York meeting. External Affairs Minister Sushma Swaraj in May 2015 – at a press briefing to highlight the achievements of the Modi government after a year in office, formally indicated that the Prime Minister would visit Israel, even though no specific dates had been agreed upon.¹⁵

Modi's meeting at the UNGA with Netanyahu was in the aftermath of 'Operation Protective Edge', the Israeli military action in the Gaza Strip, which began in July 2014. There was an unprecedented demand from the opposition in the Indian parliament for resolution critical of Israeli military action. The Government initially even refused to accept the demand for a discussion, with Minister Swaraj stating that the 'subject refers discourteously to a friendly foreign country'.¹⁶

The discussion in the Rajya Sabha (Upper House), however, did eventually take place on July 21, 2014. During the discussion, the BJP Members of Parliament opposed demands from the opposition for a resolution critical of Israeli actions.¹⁷ To the demands by the Members of the Left parties that India should stop arms purchases from Israel,

¹⁵ Ministry of External Affairs, 'Transcript of Media Briefing by External Affairs Minister on Completing One Year in Government', May 31, 2015, at <https://www.mea.gov.in/media-briefings.htm?dtl/25304/Transcript+of+Media+Briefing+by+External+Affairs+Minister+on+Completing+One+Year+in+Government+May+31+2015> (Accessed September 10, 2021).

¹⁶ Rajya Sabha, "Rulings by the Chair", July 17, 2014, p. 1 at http://rsdebate.nic.in/bitstream/123456789/631895/2/PD_232_17072014_p1_p12_2.pdf#search=gaza (Accessed September 10, 2021).

¹⁷ For an analysis of the parliamentary debate, see S. Samuel C. Rajiv, *Indian Responses to Israel's Gaza Operations*, Mideast Security and Policy Studies No. 119, BESA Center for Strategic Studies, May 2016, pp. 37-48.

Foreign Minister Sushma Swaraj asked them why they had not raised a similar demand in 2008 or 2012 (probably referring to Israel's prior large-scale military actions 'Cast Lead' and 'Pillar of Defence').

Given the Modi government's spirited rebuttal of the opposition demands — coupled with the oft-expressed support for Israeli national security policies by BJP leaders, the opposition alleged that the Government was moving away from India's longstanding policy vis-a-vis support to the Palestinians. While the Government rubbished the charges, reports in the media subsequently also speculated about the possibility of 'tectonic shift' in India's voting patterns as regards Israel-related resolutions at international fora under the Modi government.¹⁸

In the aftermath of Operation Protective Edge, President Pranab Mukherjee visited Israel and Palestine in October 2015. A series of MoUs relating to cooperation between the educational institutions of both countries were agreed upon. In February of that year, Israeli Defence Minister Moshe Yaalon visited Bengaluru (for Aero India 2015) and New Delhi. This was the first ever visit by an Israeli Defence Minister to India. It is noteworthy that no Indian Defence Minister has yet visited Israel. Foreign Minister Sushma Swaraj visited both Jerusalem and Ramallah in January 2016.

During Prime Minister Modi's July 2017 historic visit, the bilateral relationship was formally termed as a 'Strategic Partnership'.¹⁹ Cooperation in the agriculture sector was strengthened, with the three-year Work Plan in Agriculture extended till 2020 (which has since been

¹⁸ Amit Baruah, 'India may end support to Palestine at UN', *The Hindu*, December 21, 2014, at <http://www.thehindu.com/news/national/india-may-end-support-to-palestine-at-un/article6713364.ece> (Accessed September 20, 2021).

¹⁹ Ministry of External Affairs, 'India-Israel Joint Statement during the visit of Prime Minister to Israel', July 5, 2017, at https://www.mea.gov.in/bilateral-documents.htm?dtl/28593/IndiaIsrael_Joint_Statement_during_the_visit_of_Prime_Minister_to_Israel_July_5_2017 (Accessed July 6, 2017).

extended further), and the India-Israel Industrial R&D and Innovation Fund (I4F) was set up. Both sides pledged to invest \$40 million in this Fund over five years (\$4 million per year by each country) to promote joint R&D projects. The first round project winners were announced in July 2018. These and subsequent successful project proposals related to novel treatments for glaucoma, as well as fields as diverse as agriculture, energy, water and Information and Communication Technology (ICT).

In the defence sector, joint development of products, including transfer of technology (ToT), was stressed, in the light of India's 'Make in India' initiative. Both sides agreed on a Framework for Cooperation in the Area of Cyber Security. Space cooperation was strengthened, with the Indian Space Research Organisation (ISRO) and the Israel Space Agency (ISA) signing agreements on projects relating to atomic clocks, geo-synchronous earth orbit (GEO)-low earth orbit (LEO) optical links and electric propulsion for small satellites.

While Prime Minister Modi visited Ramallah in a 'stand-alone' visit eight months later in February 2018, analysts found it significant that he did not go to Palestine during his path-breaking Israel visit. India's Israel policy, therefore, was termed as being 'de-hyphenated' from India's policy positions vis-à-vis Palestine.²⁰ During Prime Minister Netanyahu's January 2018 visit, a MoU on cooperation in the energy sector, was agreed upon. Both countries committed to explore opportunities in third countries – on aspects like agriculture, education,

²⁰ Caroline B. Glick, 'Modi and Israel's coming of age', *Jerusalem Post*, July 3, 2017, at <http://www.jpost.com/Opinion/Our-World-Modi-and-Israel's-coming-of-age-498671> (Accessed July 4, 2017); P.R. Kumaraswamy, 'Modi in Israel: PM has done the groundwork, will business giants follow suit?', July 7, 2017, at <http://www.hindustantimes.com/opinion/modi-in-israel-pm-has-done-the-groundwork-will-business-giants-follow-suit/story-446EPyhQRz5oSqNSFbZH8L.htm> (Accessed September 20, 2021); P.R. Kumaraswamy, 'Modi redefines India's Palestine Policy', IDSA Issue Brief, May 18, 2017, at https://www.idsa.in/issuebrief/modi-redefines-india-palestine-policy_prkumaraswamy_180517 (Accessed September 20, 2017).

health care, solar energy and water, among others.²¹ Both sides emphasized on the need for sustainable and long-term cooperation in the defence sector. The two Prime Ministers visited an innovation hub, the International Centre for Entrepreneurship and Technology, iCreate, in Ahmedabad. This hub was established in 2012 by the Gujarat government to foster innovation.

External Affairs Minister (EAM) S. Jaishankar's October 2021 visit – only the fourth Foreign Ministerial visit to Israel after the establishment of full diplomatic ties in 1992– showcased the intent of both countries to further strengthen the relationship which entered its fourth decade in January 2022, with emphasis on sustainability and 'Green' growth. A significant development that came out of the EAM's visit was the decision to resume discussions on a Free Trade Agreement (FTA) and complete the negotiations by the middle of 2022.²²

As seen in the above sections, India-Israel relations have traversed a dynamic path. With the re-established intent to finish negotiations on a FTA – as mutually agreed during EAM Jaishankar's October 2021 visit, bilateral trade can be expected to grow from the current levels of around \$7 billion. Defence cooperation, meanwhile, continues to be the strongest pillar of the relationship. The next chapter examines the defence cooperation between India and Israel in its varied dimensions.

²¹ Ministry of External Affairs, 'India-Israel Joint Statement during visit of Prime Minister of Israel to India', January 15, 2018, at <https://www.mea.gov.in/bilateral-documents.htm?dtl/29357/IndiaIsrael+Joint+Statement+during+visit+of+Prime+Minister+of+Israel+to+India+January+15+2018> (Accessed January 16, 2018).

²² Ministry of External Affairs, 'Remarks of External Affairs Minister after meeting with APM and FM Yair Lapid of Israel', October 18, 2021, at <https://www.mea.gov.in/Speeches-Statements.htm?dtl/34400/Remarks+of+External+Affairs+Minister+after+meeting+with+APM+and+FM+Yair+Lapid+of+Israel+October+18+2021> (Accessed October 19, 2021).

DEFENCE COOPERATION

India-Israel defence and security cooperation has gone from strength to strength, after full diplomatic ties were established in January 1992. Even during the period when full diplomatic relations were not established, India sought and secured Israeli security assistance. This was most prominent during the 1965 and 1971 India-Pakistan conflicts. The equipment supplied by Israel for these wars, like 160 mm mortars, also saw action two decades later, during the 1999 Kargil War.²³ Post-1992, defence and security cooperation have constituted the key pillar of the India-Israel strategic partnership. India has procured cutting-edge equipment from Israel to plug critical security needs and help in the modernization of its armed forces. The inability of the Indian defence industry to cater to these requirements also necessitated that India seek such equipment from overseas.

Israel, on its part, exhibited political will to provide niche equipment to India, unencumbered by restrictions on such transfers by Israel's close ally, the United States (US). The US, for instance, prevented Israel from going ahead with the 1998 contract with China for airborne early warning and control aircraft (AWACS). Due to US pressure, the contract was terminated in 2000, with Israel even having to pay damages for not fulfilling the terms of the contract. The US put pressure on Israel over fears that such niche capabilities could aid Beijing's efforts to forcefully take over Taiwan.

During Prime Minister Narendra Modi's July 2017 visit to Israel – the first Indian prime ministerial visit in 25 years, both countries formally

²³ N.A.K. Browne, 'A perspective on India-Israel defence and security ties', in Jayant Prasad and S. Samuel C. Rajiv (eds.) *India and Israel: The Making of a Strategic Partnership*, Routledge, London, 2020, pp. 15-25.

acknowledged their ‘strategic partnership’. This chapter places the defence aspects of the India-Israel strategic partnership in historical and contemporary perspective.

CONTOURS OF COOPERATION

After the establishment of diplomatic ties in 1992, India has gradually increased the volume of defence purchases from Israel, beginning in 1996-1997 with the procurement of the Searcher unmanned aerial vehicles (UAVs) – with the initial contract dating back to 1996, and Super Dvora patrol boats. India’s defence ties with Israel were strengthened in the aftermath of the Kargil conflict. India secured key equipment like ammunition for its artillery guns. India has since procured a wide range of equipment, from assault rifles to the Phalcon airborne warning and control systems (AWACS), fire-control radars, missiles, among a host of other equipment.²⁴ The following sections delineate key aspects of the bilateral defence cooperation, primarily focusing on procurement and joint development programmes related to three broad areas – surveillance capabilities; missiles; and niche equipment encompassing assault weapons to aircraft parts.

Surveillance Platforms and Equipment

India has procured key equipment like UAVs, AWACS and radars to plug deficiencies in the surveillance capabilities of its armed forces. India has used the Israeli-made UAVs for significantly enhancing its security operations along its coastline as well as for internal security purposes. India procured more than 150 Searcher and Heron UAVs, made by Israel Aerospace Industries (IAI). The latter is a medium-altitude long-endurance (MALE) UAV – capable of flying non-stop for more than 50 hours, while the former can fly up to 18 hours. The Western Naval Command commissioned its first UAV squadron made

²⁴ See, ‘Transfers of major weapons: Deals with deliveries or orders made for 1992 to 2020’, SIPRI Arms Transfers Database, at https://armstrade.sipri.org/armstrade/page/trade_register.php (Accessed August 24, 2021).

up of Israeli-procured UAVs in January 2011 at Porbandar, Gujarat, five years after the first UAV squadron was commissioned at Kochi.²⁵

The then Chief of Naval Staff, Admiral Arun Prakash, inaugurating the Kochi squadron, stated that the Israeli UAVs were being inducted after three years of flying trials and that the Indian Navy was ‘now amongst the pioneers in the esoteric art of UAV operation at sea’.²⁶ Admiral Prakash emphasized that the Israeli assets would enhance the country’s ‘maritime domain awareness manifold’. A third UAV squadron made up of Searchers and Herons was set up along the Tamil Nadu coast in 2012.²⁷ In 2019, India reportedly signed a \$500 million contract with the IAI for 50 additional Heron UAVs.²⁸

Apart from the Herons and the Searchers, the IAI also has in its stable, the Heron-Turbo Prop (TP) unmanned combat aerial system (UAS). It is described as an advanced multi-role, long range, MALE UAV for ‘strategic missions’, equipped with satellite communication systems, automatic take-off and landing, an endurance of more than 30 hours and capable of carrying a variety of lethal and surveillance payloads.²⁹ As against the Heron, which has a payload weight of about 500 kg, the Heron-TP is advertised to carry multiple payloads five times that weight.

²⁵ ‘Eye in the sky to guard Gujarat coast’, *The Times of India*, January 18, 2011, at http://articles.timesofindia.indiatimes.com/2011-01-18/ahmedabad/28352057_1_uav-squadron-unmanned-aerial-vehicle-squadron-western-coast (Accessed September 25, 2021).

²⁶ ‘Indian Navy commission’s first UAV squadron’, PTI, January 7, 2006, at <https://us.rediff.com/news/2006/jan/06uav.htm?q=np&file=.htm> (Accessed September 25, 2021).

²⁷ Gary Mortimer, ‘Navy Establishes Indian Third UAV Squadron in Tamil Nadu for Maritime Operations’, April 10, 2012, at <https://www.uasnews.com/2012/04/indian-navy-establishes-third-uav-squadron-in-tamil-nadu-for-maritime-operations/> (Accessed September 25, 2021).

²⁸ ‘India Buys 50 Herons in \$500M IAI Deal’, February 26, 2019, at <https://www.uasvision.com/2019/02/26/india-buys-50-herons-in-500m-iai-deal/> (Accessed September 25, 2021).

²⁹ Israel Aircraft Industries, ‘Heron-TP’, at <https://www.iai.co.il/p/heron-tp> (Accessed September 25, 2021).

The maximum payload weight of the Searcher tactical UAV, meanwhile, is about 100 kg. The Israeli Air Force is the only Air Force currently operating the Heron-TP system.

Reports in mid-2018 noted that India had decided to procure at least ten Heron-TP drones, at a cost of \$400 million, to enhance the country's 'cross-border military strike' capability.³⁰ Pertinently, this alluded to possible usage of the drone across India's western front. Reports in 2021, however, noted that India will lease four Heron-TPs for use in the eastern sector, given the changed security situation along the China border. The leased Heron-TPs are reportedly non-lethal, to be used solely for surveillance purposes.³¹ By December 2021, these drones have reportedly been deployed on the border.³²

The leasing of the Heron-TPs was the second such procurement decision to make use of the leasing provisions of the Defence Acquisition Procedure 2020. Two General Atomic MQ-9B Sea Guardian drones have been leased by the Indian Navy. The IAI on its part is a veteran in leasing arrangements, with its drones leased to countries like Canada, Australia and Spain.³³

³⁰ Manu Pubby, 'Government 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?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst (Accessed September 25, 2021).

³¹ Snehes Alex Philip, 'Indian Army will soon get 4 Heron TP drones on lease from Israel, plans to deploy them at LAC', *The Print*, May 26, 2021, at <https://theprint.in/defence/indian-army-will-soon-get-4-heron-tp-drones-on-lease-from-israel-plans-to-deploy-them-at-lac/665981/> (Accessed September 25, 2021).

³² 'Army receives four new Israeli Heron drones: How these UAVs will boost India's surveillance capabilities in Ladakh,' *Times Now Digital*, December 1, 2021, at <https://www.timesnownews.com/india/article/army-receives-four-new-israeli-heron-drones-how-these-uavs-will-boost-indias-surveillance-capabilities-in-ladakh/836868> (Accessed February 10, 2022).

³³ IAI, 'Leasing – A Flexible Approach to UAS Operations', June 7, 2021, at <https://www.iai.co.il/news-media/features/uas-leasing> (Accessed September 25, 2021).

India will have one of the few armed forces in the world to use the Heron-TP, apart from Israel. Reports in August 2021 also noted that the Indian armed forces will undertake a massive modernization exercise involving the Israeli UAV's in its arsenal, amounting to over Rs 5000 crores. The programme seeks to even arm previously-procured Herons as well as improve their surveillance capabilities.³⁴

Hindustan Aeronautics Limited (HAL), along with Dynamic Technologies Limited (DTL), signed a strategic partnership agreement with the IAI at the Defence Expo 2020, for marketing, manufacture and sale of UAVs.³⁵ HAL also signed an MoU with Elbit Systems for exploring the feasibility of joint development and production of 2000 kg vertical take-off and landing (VTOL) UAVs for both maritime and land-based operations for domestic as well as international customers.

The March 2004 deal with Elta for three Phalcon AWACS worth \$1.1 billion, has been one of the largest defence deals that India has concluded with Israel. The first and second AWACS aircraft were delivered in May 2009 and March 2010, while the third was delivered in mid-2011. The Rajya Sabha had been informed in May 2010 that procurement of additional AWACS aircraft was on the anvil.³⁶

India, though, is increasingly focusing on indigenous procurement of such assets. India has two indigenous airborne early warning and control (AEW&C) systems mounted on Embraer aircraft – *Netra*, in its

³⁴ Snehesh Alex Philip, 'Project Cheetah set to take off, India to get upgraded & armed drones from Israel', *The Print*, August 3, 2021, at <https://theprint.in/defence/project-cheetah-set-to-take-off-india-to-get-upgraded-armed-drones-from-israel/708122/> (Accessed September 25, 2021).

³⁵ Hindustan Aeronautics Limited, *Annual Report 2019-20*, p. 4, at https://hal-india.co.in/Common/Uploads/Finance/HAL_AR-2019-20%20Final.pdf (Accessed September 25, 2021).

³⁶ Rajya Sabha, 'Delay in delivery if aircrafts by Israel', Unstarred Question Number 4347, May 5, 2010, at <https://pqars.nic.in/annex/219/Au4347.pdf> (Accessed September 25, 2021).

inventory.³⁷ The first of the aircraft was handed to the IAF in February 2017.³⁸ The *Netra* aircraft took part in the Balakot surgical strikes in February 2019.³⁹

Meanwhile, reports in December 2020 noted that India intends to spend more than Rs 10,000 crores to equip its Air Force with six additional AWACS aircraft. The DRDO would acquire six Airbus aircraft from the Air India fleet (319/320/321), and equip them with indigenously developed active electronically scanned array (AESA) radars.⁴⁰ The original Request for Proposal (RfP) for six AWACS was

³⁷ The DRDO and the IAF began the project to develop an AEW&C aircraft indigenously, in 2004. Embraer-145 was the chosen aircraft to mount the indigenously developed radar. M.S. Eswaran, the head of the Centre for Airborne Systems (CABS) – which began life as the Airborne Surveillance Warning and Control Centre (ASWAC) in 1985– writes that the proposal by the DRDO to develop an indigenous system was cleared by the Cabinet Committee on Security (CCS) within a week after it was submitted. ‘*Netra: The Indigenous Airborne Early Warning and Control System*’, *Technology Focus*, 29 (2), p. 3, at https://www.drdo.gov.in/sites/default/files/technology-focus-documrnt/TF_April_2021.pdf (Accessed September 25, 2021).

³⁸ The Comptroller and Auditor General (CAG), though, has flagged inconsistencies in the selection of the Embraer aircraft by the DRDO and the IAF, given that it cannot operate from higher altitudes in places like Ladakh, as well as for not ostensibly fulfilling significant operational requirements of the IAF. See Pradip R Sagar, ‘How a CAG report exposed DRDO’s mishandling of AEW&CS programme’, August 29, 2018, at <https://www.theweek.in/news/india/2018/08/29/How-a-CAG-report-exposed-DRDO-mishandling-of-AEW-CS-programme.html> (Accessed September 25, 2021).

³⁹ ‘*Netra: The Indigenous Airborne Early Warning and Control System*’, *Technology Focus*, p. 4; See also Sandeep Unnithan, ‘Made in India monitoring device helped IAF keep tap on Pakistan jets’ movement during airstrike in Balakot’, *India Today*, February 27, 2019, at <https://www.indiatoday.in/india/story/airborne-early-warning-and-control-iaf-pakistan-jets-movement-airstrike-balakot-1465935-2019-02-27> (Accessed September 25, 2021).

⁴⁰ Rajat Pandit, ‘India plans major indigenous project for six powerful “eyes in the sky” AWACS’, *The Times of India*, December 16, 2020, at <http://timesofindia.indiatimes.com/articleshow/>

issued in 2014 but uncertainty over choice of the aircraft to mount the radar, among other issues, delayed the decision.⁴¹ In September 2021, the Cabinet Committee on Security (CCS) finally approved the Acceptance of Necessity (AoN) for the DRDO to issue the Request for Proposal (RfP) to procure the aircraft.⁴²

Apart from UAVs and AWACS, India has bought a whole range of radars from Israel for its aircrafts, ships and land forces. One of the earliest radars that India bought was the ground surveillance/battlefield surveillance radar (BFSR) EL/M-2140 in 1998, with the ability to detect tanks/vehicles/troops up to a range of 40 km.⁴³ The range of the Israeli radars was subsequently expanded to enable beyond line-of-sight (LOS) detection.⁴⁴ A large number of Elta's air search radars for use on frontline warships like frigates, destroyers and aircraft carriers have been procured. The EL/M-2221 fire control radar was bought for use along with the Barak-I surface-to-air missile (SAM) system, a point defence system installed on many warships.

79766365.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst (Accessed September 25, 2021); Snehesh Alex Philip, 'Govt sanctions 6 new "eyes in the sky" worth Rs 10,994 crore for Air Force', *The Print*, December 17, 2020, at <https://theprint.in/defence/govt-sanctions-6-new-eyes-in-the-sky-worth-rs-10994-crore-for-air-force/568871/> (Accessed September 25, 2021).

⁴¹ Neelam Mathews, 'India wants long-endurance AWACS', April 10, 2014, at <https://www.ainonline.com/aviation-news/defense/2014-04-10/india-wants-long-endurance-awacs> (Accessed September 25, 2021).

⁴² Snehesh Alex Philip, 'Modi govt okays 6 more "eyes in the sky" for IAF, DRDO project to cost Rs 11,000 crore', September 9, 2021, at <https://www.msn.com/en-in/news/other/modi-govt-okays-6-more-eyes-in-the-sky-for-iaf-drdo-project-to-cost-rs-11-000-crore/ar-AAOfSNm?> (Accessed September 25, 2021).

⁴³ P.K. Chakravorty, 'Gunners Day and the Way Ahead', October 2013, at https://www.indiastrategic.in/topstories3060_Gunners_Day_way_ahead.htm (Accessed September 25, 2021).

⁴⁴ Ministry of Defence, *Annual Report 2010-11*, p. 25, at <https://www.mod.gov.in/dod/sites/default/files/AR-eng-2011.pdf> (Accessed September 25, 2021).

Combat aircraft radars for purposes of modernization of aircraft like the Jaguars began to be procured from 1999 onwards. While the initial combat radars were ‘mechanically steered array’ (MSA) radars, Elta subsequently provided AESA radars (with the first Jaguar fitted with the radar flying in 2018), making the Jaguar the first combat aircraft in India’s inventory to be fitted with these advanced radars.⁴⁵

Multi-mode radars, co-developed with Elta, have been integrated into the Light Combat Aircraft (LCA).⁴⁶ The EL/M-2052 AESA radars replaced Elta’s manual EL/M-2032 radars in the LCA, as indeed in aircraft such as Jaguar (in 2018 as noted above) and on Mirages in India’s inventory.⁴⁷ The LCA’s Helmet-Mounted Display and Sight (HMDS) is also provided by the Israeli company, Elbit.

The contract with Rafael Advanced Defence Systems for two aerostat radars was entered into in 2002, at a cost of around Rs 676 crores (\$145 million), to meet the requirements of low-level surveillance. The radars, positioned at a height of around 14,000 feet, can detect low-flying aircraft at a distance of 250 km. These were commissioned in 2007 and 2008, respectively.⁴⁸

⁴⁵ Ajai Shukla, ‘With cutting-edge AESA radar, Jaguar is IAF’s first fighter’, *The Business Standard*, May 25, 2018, at https://www.business-standard.com/article/economy-policy/with-cutting-edge-aesa-radar-jaguar-is-iaf-s-first-fighter-118052500033_1.html (Accessed September 25, 2021).

⁴⁶ *Annual Report 2015-16*, Aeronautical Development Agency, p. 21, at <https://www.ada.gov.in/images/Annual%20Report%202015-16.pdf> (Accessed September 25, 2021).

⁴⁷ Ajai Shukla, ‘Cutting-edge Israeli radar wins air force approval for Tejas fighter’, *Business Standard*, October 25, 2015, at https://www.business-standard.com/article/economy-policy/cutting-edge-israeli-radar-wins-air-force-approval-for-tejas-fighter-115102500749_1.html (Accessed September 25, 2021).

⁴⁸ When one of these radars was involved in an accident in May 2009, the CAG criticized lax maintenance protocols, which cost over Rs. 300 crores to repair. Comptroller and Auditor General of India, Report No. 20 of 2011-12 (Air Force and Navy), pp. 27-31, at https://cag.gov.in/cag_old/sites/default/files/audit_report_files/Union_Compliance_Defence_Air_Force_and_Navy_20_2011.pdf (Accessed September 30, 2021)

The country's first indigenous aerostat radar, *Akashdeep*, launched in 2010, was developed by the Aerial Delivery Research Development Establishment (ADRDE). The maiden flight of an improved version, *Nakshatra*, was conducted in October 2015 about 22 months after the project began in January 2014.⁴⁹ However, within a year, the project was closed due to difficulties with the indigenously-designed laminated fabric material that made up the balloon housing the radar.⁵⁰ ADRDE officials however insisted that the Army did not provide funds to carry out additional user trials and therefore, the project was shelved.⁵¹ Reports in February 2016 noted that the IAF was looking to acquire at least six aerostat radars to meet its operational requirements.⁵²

Missiles

The Rs 2,600 crore contract for the joint development of long-range surface-to-air missile (LRSAM) for the Indian Navy (IN) was signed in January 2006. The system, with a range of 70 km, is used for ensuring

⁴⁹ 'DRDO Kicks off Mission to Develop Surveillance Airship', January 1, 2014, at <https://www.newindianexpress.com/nation/2014/jan/01/DRDO-Kicks-off-Mission-to-Develop-Surveillance-Airship-558257.html> (Accessed September 30, 2021)

⁵⁰ Public Accounts Committee, 'Avoidable procurement of a mobile nitrogen gas generation plant, Infructuous procurement of material, Development of integrated aerostat surveillance system, and Irregular expenditure on vehicle testing ground', Action Taken Report by the Government on the Observations/Recommendations of the Committee contained in their One Hundred and Thirty First Report, Sixteenth Lok Sabha, Ministry of Defence, September 2020, pp. 5-18, at http://164.100.47.193/lssccommittee/Public%20Accounts/17_Public_Accounts_20.pdf (Accessed September 30, 2021).

⁵¹ Arvind Chauhan, 'DRDO's Agra lab spends Rs 49.50 cr, 6 yrs, in developing surveillance system which fails Army standards', July 24, 2017, at <https://timesofindia.indiatimes.com/city/agra/drds-agra-lab-spends-rs-49-50-cr-6-yrs-in-developing-surveillance-system-which-fails-army-standards/articleshow/59732675.cms> (Accessed September 30, 2021).

⁵² Vijay Mohan, 'IAF to procure 8 aerostat radars', February 3, 2016, at <https://www.tribuneindia.com/news/archive/nation/iaf-to-procure-8-aerostat-radars-191264> (Accessed September 30, 2021).

point and area defence against a variety of threats, including aircrafts and missiles. The DRDO handed over the first batch of five LRSAM missiles to the Indian Navy in 2017.⁵³ The initial test firing of the missile was conducted off the coast of Chennai in December 2015.⁵⁴ In January 2019, *INS Chennai* and *INS Kolkata* successfully conducted the Joint Target Coordination (JTC) firing of the LRSAM system.⁵⁵ The final production batch was handed over to the IN in February 2021. The missile's indigenous content includes its dual-pulse rocket motor.⁵⁶ The IAI provides the Multi-Function Surveillance and Threat Alert Radar (MF-STAR).

The Rs 10,000 crores contract for the joint development of medium-range SAM (MRSAM) for the IAF was concluded in 2009. India and Israel signed a MoU worth \$1.6 billion for MRSAMs for use by the Indian Army in April 2017. The first test of the system was done in December 2020.⁵⁷ The Indo-Israel joint venture, Kalyani Rafael Advanced Systems (KRAS), produces MRSAM missile kits for integration by the public sector Bharat Dynamics Limited (BDL). The IAF has also procured the Spyder low-level quick reaction surface-to-air missile (LLQRM) systems equipped with Python and Derby missiles for protection against aerial targets, including aircraft, cruise missiles and UAVs.

⁵³ *Annual Report 2017-18*, Ministry of Defence, p. 82.

⁵⁴ 'Successful Conduct of LR SAM Firing by Indian Navy', December 2015, at <https://indiannavy.nic.in/content/successful-conduct-lr-sam-firing-indian-navy> (Accessed September 30, 2021).

⁵⁵ *Annual Report 2018-19*, Ministry of Defence, p. 97, at <https://www.mod.gov.in/sites/default/files/MoDAR2018.pdf> (Accessed September 30, 2021).

⁵⁶ 'Flag off ceremony of final production batch of LRSAM Missiles', Press Information Bureau, February 14, 2021, at <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1697942> (Accessed September 30, 2021).

⁵⁷ Seth Frantzman, 'Israel and India test MRSAM air defense system', *Defence News*, January 5, 2021, at <https://www.defensenews.com/training-sim/2021/01/05/israel-and-india-test-of-mrsam-air-defense-system/> (Accessed September 30, 2021).

The contract for the procurement of Barak-1 missiles for Indian Navy warships was signed in October 2014 with Rafael Advanced Defence Systems Ltd., at a cost of Rs. 875.49 crores.⁵⁸ The Barak protects a wide range of ships, including destroyers and frigates. In September 2013, reports flagged shortages of missiles and the efforts to replenish them were facing difficulties, because of an anti-corruption probe by the Central Bureau of Investigation (CBI) against individuals who had allegedly received kickbacks for the October 2000 deal. The IAI was placed on the MoD blacklist in 2006, because of the CBI investigation. This impacted the procurement of missiles for the warships. Due to ‘paucity of evidence’, the CBI closed the case, paving the way for the Indian Navy to buy the missiles from IAI. While a special court accepted the closure report of the CBI in January 2017, it was not until April 2018, however, that Rafael was taken off the MoD’s blacklist.⁵⁹

The orders for Spike anti-tank guided missiles (ATGMs) are a unique example of the dynamics associated with the India-Israel defence partnership. The December 2020 orders – as well as orders for more than 200 Spike missiles in the aftermath of the Balakot strikes in February 2019, signified operational imperatives guiding procurement decisions, amidst lack of viable, domestic alternatives.

These orders came despite the Government announcing in late 2017 – just ahead of Prime Minister Netanyahu’s visit in January 2018 – that it was not proceeding with importing the systems for the Indian armed

⁵⁸ Lok Sabha, ‘Acquisition of missiles from Israel’, Unstarred Question No. 2819, March 13, 2015, at <http://loksabhaph.nic.in/Questions/QResult15.aspx?qref=13180&lsno=16> (Accessed September 30, 2021).

⁵⁹ Manu Pubby, ‘Israeli firms IAI, Rafael taken off restricted list after closure of corruption case’, *The Print*, April 5, 2018, at <https://theprint.in/defence/israeli-firms-iai-rafael-taken-off-restricted-list-after-closure-of-corruption-case/47393/> (Accessed September 30, 2021); Vivek Raghuvanshi, ‘India lifts blacklisting for two Israel defense companies’, *Defense News*, April 13, 2018, at <https://www.defensenews.com/global/mideast-africa/2018/04/12/india-lifts-blacklisting-for-two-israel-defense-companies/> (Accessed September 30, 2021).

forces, ostensibly in favour of inducting indigenous systems like the *Nag*.⁶⁰ Reports in January 2018 flagged that the Army had an ominous shortage of ATGMs in its inventory – to the tune of nearly 70,000 ATGMs.⁶¹ When this report was brought to the attention of the Government in the Lok Sabha, Minister of State for Defence, Subhash Bhamre affirmed that the Government was taking appropriate measures to maintain ‘desire(d) level of operational preparedness commensurate to the threat perception in a dynamic strategic scenario’.⁶²

In October 2014, India’s Defence Acquisition Council (DAC), headed by the Raksha Mantri, gave the go-ahead for procuring 8,000 Spike ATGM, valued at over \$500 million. The Acceptance of Necessity (AoN) for the missiles was given earlier in June 2009 for procuring 8356 missiles and 321 launchers under ‘Buy and Make’ category of the Defence Procurement Procedure with transfer of technology (ToT) to Bharat Dynamics Limited (BDL). The Spike missile was preferred over other competitors like the US-made Javelin ATGM. The Javelin offer by the US was a component of the Defence Trade and Technology Initiative (DTTI) for co-development and manufacture.⁶³ The Request for Proposal (RfP) for the missiles was issued in April 2010.

⁶⁰ Sushant Singh, ‘Ministry of Defence scraps \$500 million Israeli missile deal, wants DRDO to make in India’, November 20, 2017, at <https://indianexpress.com/article/india/ministry-of-defence-scraps-500-million-israeli-missile-deal-wants-drdo-to-make-in-india-4945571/> (Accessed October 2, 2021).

⁶¹ Rajat Pandit, ‘Critically short of anti-tank missiles, Army sounds alarm’, January 28, 2018, at http://timesofindia.indiatimes.com/articleshow/62678079.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst (Accessed October 2, 2021).

⁶² Lok Sabha, ‘Shortage of anti-tank missiles’, Unstarred Question 2035, March 7, 2018, at <http://loksabhaph.nic.in/Questions/QResult15.aspx?qref=63502&lsno=16> (Accessed October 2, 2021).

⁶³ Neelam Mathews, ‘US offers four new defence projects to India’, January 29, 2015, at <https://www.ainonline.com/aviation-news/defense/2015-01-29/us-offers-four-new-defense-projects-india> (Accessed October 2, 2021).

The Spike saga unfolded in the backdrop of the huge requirement for third-generation ATGMs in the Indian armed forces, which had in its inventory second-generation ATGMs like the ‘wire-guided’ Russian-made Konkurs-M and the French Milan systems. The Government’s auditor, the CAG, in 2010, also expressed concern over the Army continuing with its procurement of second-generation ATGMs like Milan, despite the availability of third-generation ATGMs globally.⁶⁴

Delays in development of indigenous ATGMs like the Nag, further added to the woes of the armed forces. The testing of the missile began as far back as the 1990s. In user trials specifically in desert conditions, problems with the missile’s imaging infra-red (IIR) seeker guidance system were detected.⁶⁵ After modifications, orders for over 400 missiles were placed by the Army in 2010.

Even as reports in 2015 indicated that the Spike deal was facing delays due to issues over price negotiations, India did go ahead with finalizing the contract and the stage was set for inducting the Israeli systems.⁶⁶ The Spike RfP, issued in 2010, was, however, retracted on December 20, 2017. Defence Minister Nirmala Sitharaman informed Parliament that the decision was taken to encourage ‘indigenous’ development of the ATGM by the DRDO.⁶⁷

⁶⁴ ‘Compliance Audit on Army and Ordnance and Factories, Union Government, Defence Services’, Comptroller and Auditor General of India, August 6, 2010, at https://cag.gov.in/cag_old/content/report-no-12-2010-compliance-audit-army-and-ordnance-and-factories-union-government-defence (Accessed October 2, 2021).

⁶⁵ ‘Nag anti-tank missile back in reckoning’, July 12, 2008, at http://timesofindia.indiatimes.com/articleshow/3225233.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst (Accessed October 2, 2021).

⁶⁶ Pradip R. Sagar, ‘Defence Deal with Israel Hits a Roadblock’, June 5, 2015, at <http://www.newindianexpress.com/nation/Defence-Deal-With-Israel-Hits-a-Roadblock/2015/06/05/article2850156.ece> (Accessed October 2, 2021).

⁶⁷ Rajya Sabha, ‘Scrapping of Spike Anti-Tank Guided Missiles Deal’, Starred Question No. 24, February 5, 2018, at <https://rajyasabha.nic.in/rsnew/Questions/QResult.aspx> (Accessed October 2, 2021).

With reports noting that the Nag missile was ready for induction—the final user trials were conducted in October 2020, cutting-edge and cheaper technologies for use in man-portable ATGMs are being developed by indigenous start-ups like Tonbo Imaging Private Limited. While systems like the Nag (and the Spike) use costlier, cooled IIR seekers, Tonbo developed uncooled IIR seekers, which were also lightweight and better suited for man-portable ATGMs.⁶⁸

Assault weapons, Ammunition, Niche Aircraft Parts

Apart from the significant cooperation relating to UAVs, AWACS, radars and missiles, India and Israel have cooperated in the field of assault weapons, ammunition, niche aircraft parts, among other critical equipment. The HAL has longstanding cooperation with Israeli firms and their subsidiaries like the IAI and Elbit Systems. HAL's Korwa plant, entered into a MoU with Elbit subsidiary Elop Electro-Optics Industries Limited in 2003 to manufacture Head-Up Displays (HUD) for IAF aircraft. Over 500 such displays have been integrated into various IAF platforms like Su-30MKI, Jaguar and MiG-27M.⁶⁹

At the Aero India 2021, HAL entered into an agreement for digital overhead HUDs (used widely in transport aircraft) with the same company. IAI and HAL also have an agreement for the supply of main deck cargo doors for Boeing 737 aircraft. In joint development programmes, electronic warfare (EW) suites have been co-developed in association with Elisra, for the Light Combat Aircraft (LCA), *Tejas*. Elisra was also involved in co-developing the Dual Colour Missile Approach Warning System (DCMAWS) for the Su-30 MKI aircraft.

⁶⁸ Malavika Velayinikal, 'Guided missiles homing in with Indian deep tech', *Mint*, February 15, 2021, at <https://www.livemint.com/news/business-of-life/guided-missiles-homing-in-with-indian-deep-tech-11613314273154.htm> (Accessed October 2, 2021).

⁶⁹ 'HAL signs agreement with Israel's Elbit Systems for DOHS supply', Press Trust of India, February 8, 2021, at <https://www.hindustantimes.com/business/hal-signs-agreement-with-israel-s-elbit-systems-for-dohs-supply-101612782225898.html> (Accessed October 4, 2021).

Artillery ammunition was developed by three ordnance factories (Ambajhari, Kanpur, and Chandrapur) in association with Israel Weapons Industries (IWI).⁷⁰ 5.56 mm Tavor assault rifles, for India's Special Forces, were bought in 2005, at a cost of \$18 million.⁷¹ Israeli Smart, Precise Impact, Cost-Effective (SPICE) guided ammunition kits were used in the February 2019 Balakot air strikes by the Indian Air Force (IAF) inside Pakistan-occupied Kashmir (PoK). Reports in December 2020 noted that India ordered additional SPICE kits for \$200 million, along with Spike ATGMs.⁷²

The Indian Army also uses the Negev NG-7 light machine gun (LMG); an order for over 16,000 such guns was placed in 2020 to combat the increasing ceasefire violations by Pakistan at the Line of Control. In November 2021, SSS Defence – a division of the manufacturing firm, Stumpp, Schuele and Somappa Springs Private Limited Ltd, edged out an Israeli firm to upgrade limited numbers of AK-47 rifles of the Jaipur-based Southwestern Command.⁷³ SSS Defence, in fact, is only the second private sector small arms manufacturer to win orders from the MoD, after PLR Systems, in which, incidentally, the Israel Weapons Industries (IWI) has a stake.⁷⁴

⁷⁰ Ministry of Defence, *Annual Report 2004-05*, New Delhi, p. 75.

⁷¹ Rajya Sabha, 'Weapons from Israel', Unstarred Question 1790, August 10, 2005, at <https://rajyasabha.nic.in/rsnew/Questions/QResult.aspx> (Accessed October 4, 2021).

⁷² Rahul Bedi, 'Spooked By Ladakh Standoff, India Signs \$200m Deal for Israeli SPICE Bombs', December 26, 2020, at <https://thewire.in/security/india-200-million-dollar-deal-israel-spice-bombs> (Accessed October 4, 2021).

⁷³ Rahul Singh, 'Indian firm edges out Israeli rival, set to upgrade army's AK-47s', November 1, 2021, at <https://www.hindustantimes.com/india-news/indian-firm-edges-out-israeli-rival-set-to-upgrade-army-s-ak47s-101635702384964.html> (Accessed November 5, 2021).

⁷⁴ Rahul Singh, 'Private sector firm set to make small arms', *The Hindustan Times*, November 2, 2021, at <https://www.hindustantimes.com/india-news/private-sector-firm-set-to-make-small-arms-101635814498850.html> (Accessed November 5, 2021).

INSTITUTIONAL INTERACTIONS AND MILITARY EXERCISES

Robust interactions among the defence forces is an essential component of the India-Israel strategic interaction. The India-Israel Joint Committee on Defence Cooperation met for the first time in September 2002. As part of defence diplomacy, while there has been a constant stream of visits of Indian Naval ships to Haifa, as many as ten heads of defence forces from each side have visited the other country in the past 25 years (See Appendix).

Joint working groups (JWGs) on defence cooperation, helmed by the respective MoDs, as well as consultations by the Foreign Ministries, are an essential feature of such institutionalized cooperation. The 16th round of Foreign Office Consultations, for instance, were held in December 2020, in virtual mode, where the entire gamut of the bilateral relations were reviewed, including issues relating to defence and security, water, counter-terrorism, cyber security, science and technology and innovation cooperation.⁷⁵ At the 15th India-Israel Joint Working Group (JWG) on defence, held in Tel Aviv in October 2021, both countries agreed to set up a sub-working group (SWG) on defence industry cooperation.⁷⁶ A SWG on Defence Procurement, Development and Production is functional.

Indian and Israeli forces also take part in joint exercises to learn from each other's best practices. The Blue Flag Exercises conducted by the Israeli Air Force (IsAF) are an important facet of Israel's military diplomacy. The first Blue Flag Exercises took place in November 2013 and since then the multilateral Exercises have acquired a quiet momentum. A 45-member Indian Air Force (IAF) contingent, including *Garud* commandos, along with a C-130J special operations aircraft,

⁷⁵ '16th round of India-Israel foreign office consultations', Ministry of External Affairs, December 7, 2020, at <https://mea.gov.in/press-releases.htm?dtl/33261/16th+round+of+indiaisrael+foreign+office+consultations> (Accessed October 5, 2021).

⁷⁶ '15th India-Israel Joint Working Group meeting in Tel Aviv', Press Information Bureau, October 29, 2021, at <https://pib.gov.in/PressReleasePage.aspx?PRID=1767593> (Accessed October 30, 2021).

participated in these exercises for the first time in 2017. France, Germany, Greece, Italy, Poland and the United States were the other participating countries in the 2017 event.

While participation by other nations involved fighter aircraft at this event, India sent a special operations transport aircraft. Given the presence of *Garud* commandos, the C-130J was a tactical choice in order to enable them to be exposed to best counter-terrorism practices from the Israeli experience. Another factor that could have precluded participation of a fighter aircraft was the need for over-flight clearance from countries in the Gulf which did not have diplomatic relations with Israel. This factor, in the aftermath of the Abraham Accords of September 2020, has, however, significantly diminished. The Indian C-130J, meanwhile, reportedly had a stop-over in Egypt, on its journey to the Uvda Air Force Base, the base conducting the Blue Flag Exercises. Even prior to India's first ever participation in the Blue Flag Exercises, commentators had opined that the presence of American aircraft like the C-130J in India's inventory creates 'a certain degree of commonality with IsAF platforms'.⁷⁷

India's participation in the 2021 iteration of the Blue Flag Exercises saw the involvement of IAF's Mirage 2000 as well as Rafale aircraft. External Affairs Minister S. Jaishankar, who was also visiting Israel during that time, interacted with the fighter pilots participating in these exercises from other countries. After the event in Israel, the IAF contingent also participated in air exercises in Egypt. In March 2021, the IAF had also participated in air exercises in the United Arab Emirates (UAE) for the first time. The UAE exercises saw the participation of the US, French, Saudi Arabian, South Korean, and Bahraini air forces.

Joint military exercises play an important role in military forces getting familiar with the operating procedures and best practices of each country. While India does not conduct multilateral air exercises on its

⁷⁷ N.A.K. Browne, 'A Perspective on India-Israel Defence and Security Ties', in Jayant Prasad and S. Samuel C. Rajiv (eds.) *India and Israel: The Making of a Strategic Partnership*, Routledge, London, 2020, p. 22.

soil, it is a part of significant numbers of military exercises involving the armies, navies and air forces across the world. For Israel, the United States and countries in Europe continue to be the main training partners.

Commentators have also flagged the promise of naval exercises between India and Israel, given the mutual complementarities and interests of both countries in the waters of the Indian Ocean and the Mediterranean Sea. The Israeli Navy is a potent regional force. Israel, though a 'brown water' navy, is still equipped with significant naval capabilities in the form of the German-sourced Dolphin submarines as well as Saar-5 corvettes. Reports have also flagged that Israel has been testing long- range missiles in the waters of the Indian Ocean.

India and Israel, meanwhile, have had long-standing cooperation in the naval field. Apart from military diplomacy in the form of visits of Indian naval ships at the Haifa port, India secured Israeli patrol boats (Super Dvora Mk-11) in the 1990s. Niche Israeli equipment is an essential part of frontline Indian naval warships, including radars and point defence missiles like the Barak, as flagged in previous sections.

Analysts note that Israel's interests are increasingly encompassing the waters of the Indian Ocean, apart from the country's core interests in the waters surrounding it, like the Mediterranean Sea and the Red Sea. This is due to its on-going geo-political rivalry with countries like Iran. India-Israel interests also converge on such issues like maritime terrorism, concerns over proliferation of weapons of mass destruction, among others. India could also be a significant partner to the Israeli Navy in offering logistical support to its deployed vessels. India and Israel, going forward, could also explore opportunities for greater engagement relating to 'non-contentious' areas like humanitarian assistance and disaster relief and protection of sea lanes of communication.⁷⁸

⁷⁸ Prakash Gopal, 'India-Israel Defence Engagement: A Naval Perspective', in Jayant Prasad and S. Samuel C. Rajiv (eds.), *India and Israel: The Making of a Strategic Partnership*, pp. 77-83.

ENABLERS FOR DEFENCE COOPERATION

India's procurement of niche defence equipment from Israel was necessitated by the need to more effectively address the growing regional, cross-border as well as internal security challenges. India's external security environment has become more challenging in the past decades, on account of the terrorist threat emanating from Pakistani safe havens, the collusion between Pakistan and China in the strategic domain – including nuclear, missile and defence technology cooperation– and China's increasingly belligerent actions on the Line of Actual Control (LAC) as well as on India's periphery. Defence Minister George Fernandes, for instance, in as early as 1998, had flagged Chinese construction of electronic surveillance equipment on the Coco Islands since 1994.⁷⁹

The 1999 Kargil conflict highlighted gaps in surveillance and intelligence capabilities of the armed forces. The 26/11 terror strikes in Mumbai highlighted gaps in coastal surveillance. Even successful cross-border strikes as in Balakot in February 2019, as well as India's recent border tensions with China, revealed the need for multiple systems for greater effectiveness.⁸⁰ The modernization requirements of India's armed forces, meanwhile, continue to be gargantuan. Israel's niche technological prowess, in supplying key equipment like avionics, radars, missiles, point defence systems, among others, has gelled well with the country's requirements of these niche equipment.

The failure of developmental efforts of indigenous weapons systems has led India to procure similar equipment from Israel. India's indigenous efforts to develop an aerial surveillance platform (ASP), for instance, got a jolt, when an Avro HS-748 test aircraft, crashed in January 1999. The DRDO had initiated the ASP programme in 1985,

⁷⁹ Rajya Sabha, 'Installation of electronic surveillance system on Coco Island by China', May 27, 1998, at <https://rajyasabha.nic.in/rsnew/Questions/QResult.aspx> (Accessed October 10, 2021).

⁸⁰ Philip, 'Govt sanctions 6 new "eyes in the sky" worth Rs 10,994 crore for Air Force', n. 42.

at a cost of Rs 52.09 crores. After the crash, Defence Minister Jaswant Singh informed Parliament that the programme was ‘short-closed’.⁸¹

Defence Minister George Fernandes in April 2000 admitted that delays in indigenous development of critical technologies as well as sanctions imposed after India conducted the nuclear tests in 1998 had negatively impacted a wide range of programmes. These included the light combat aircraft (LCA), remotely piloted vehicle (RPV) *Nishant*, anti-tank missile system, *Nag* and the integrated electronic warfare (EW) system for the Army.⁸²

Fernandes informed the Rajya Sabha in August 2000 that ‘technological problems associated with indigenous developments’ were responsible for the delay in the development of *Nishant* pilotless aircraft.⁸³ The procurement of the Israeli Barak point defence system was an essential requirement to protect frontline assets of the Indian Navy, given that the indigenous Trishul system failed in user trials. Defence Minister Manohar Parrikar, while touting the indigenous achievements of the DRDO, in response to a query in Parliament in 2016, did note that the import content of the indigenously developed AEW&C system (excluding the Embraer aircraft) was still pegged at 16 per cent.⁸⁴

The CAG in 2018 pointed out that there was ‘inordinate delay’ in the indigenous development of UAVs by the DRDO. Those that were developed ‘failed to meet the requirements of the Indian Army’. The CAG also pointed out that delays in development of MALE UAVs

⁸¹ Rajya Sabha, ‘Desertion of AWACS programme’, Unstarred Question 2742, March 21, 2001, at <https://pqars.nic.in/annex/192/Au2742.pdf> (Accessed October 10, 2021).

⁸² Rajya Sabha, ‘Projects delayed because of developing indigenous technology’, Unstarred Question 3373, April 26, 2000, at <https://pqars.nic.in/annex/189/Au3373.pdf> (Accessed October 10, 2021).

⁸³ Rajya Sabha, ‘Purchase of pilotless planes from Israel’, Question No. 1867, August 9, 2000, at <https://pqars.nic.in/annex/190/Au1867.pdf> <https://pqars.nic.in/annex/189/Au3373.pdf> (Accessed October 10, 2021).

⁸⁴ ‘Achievements made by the DRDO’, Unstarred Question 1168, Rajya Sabha, March 8, 2016, at <https://rajyasabha.nic.in/rsnew/Questions/QResult.aspx> (Accessed October 10, 2021).

‘adversely affected the aerial surveillance capabilities of the Indian Army’.⁸⁵ The MALE UAV project was sanctioned in February 2011 with a total cost of over Rs 1500 crores but the 2018 CAG report noted that there were ‘multiple issues’ with the development project, including with the airframe, line replaceable units (LRU), engine and payload.⁸⁶ Reports highlighting the conclusion of a strategic partnership agreement between the IAI, HAL and Dynamic Technologies Limited (DTL) in February 2020 pointed out that the Rustom-II MALE UAV being indigenously developed by the DRDO crashed during flight trials in September 2019.⁸⁷

As with the UAVs, India had to procure Israeli radars due to non-availability of similar domestically developed products for optimum surveillance coverage on its Western borders. The DRDO lab, the Aerial Delivery Research Development Establishment (ADRDE), first tested an indigenous aerostat radar (*Aakashdeep*) in December 2010. Audit reports have also highlighted delays in execution of projects due to inconsistencies in monitoring of the projects, change of requirements by the user and lack of cohesion among multiple agencies executing the projects. The CAG Report No. 38 in 2015, for instance, highlighted the closure of several radar projects like *Robini*, *Aslesha*, and *Revathy* by the DRDO.⁸⁸

⁸⁵ ‘Press release of Audit Report No. 13 of 2018 on Defence Services (Army)’, Comptroller and Auditor General, August 2018, at http://14.143.90.243/cag_revamp/uploads/PressRelease/PR-Press-13-of-2018-1-05f5f6fb85a2021-47277784.pdf (Accessed October 10, 2021); *Annual Report 2018-19*, Ministry of Defence, p. 266, at <https://www.mod.gov.in/sites/default/files/MoDAR2018.pdf> (Accessed October 10, 2021).

⁸⁶ Ibid.

⁸⁷ Greg Waldron, ‘IAI in MOU with Indian firms on local UAV production’, February 5, 2020, at <https://www.flightglobal.com/defence/iai-in-mou-with-indian-firms-on-local-uav-production/136542.article> (Accessed October 10, 2021).

⁸⁸ ‘Report of the Comptroller and Auditor General of India for the year ended March 2014, Union Government (Defence Services), Air Force, No. 38 of 2015’, Comptroller and Auditor General, at https://cag.gov.in/uploads/download_audit_report/2015/Union_Compliance_Defence_Air_Force_Report_38_2015_annexures.pdf (Accessed October 10, 2021).

Even as successive Israeli governments have nurtured strategic ties with India assiduously, the transfer of some of the niche Israeli equipment was not vetoed by the United States, which was involved in developing some of the niche equipment that India procured from Israel. The US, for instance, vetoed the sale of the Phalcon AWACS to China. Israel went back on the 1998 contract to supply AWACS to Beijing in July 2000, on account of American pressure and had to even pay a penalty for its decision.

It is equally true that the US vetoed the sale of sophisticated missile defence systems like the Arrow to India. India's request for Arrow followed its open embrace of President George W. Bush's missile defence plans. The Bush administration championed missile defence as an effective deterrent to face the threats posed by the 'rogue' states like Iran, Iraq and Libya, especially so in the aftermath of the September 2001 terror strikes in New York.

The US Department of State in July 2002 acknowledged that there was an Israeli request for transferring the Arrow system to India but that it gives importance to strategic stability in South Asia and to the Missile Technology Control Regime (MTCR).⁸⁹ Analysts noted that India evaluating the Arrow was in the context of plugging gaps in its air defence architecture, and that it preferred the system over comparative systems from Russia like the S-300.⁹⁰ India did become a member of the MTCR in June 2016 and has since procured an even more advanced version, the S-400, from the Russian Federation.

This deal continues to be under the sanctions cloud of the US, following the passage of the Comprehensive American Sanctions and Divestment Act (CAATSA) in July 2017, on account of Russia's actions in Ukraine,

⁸⁹ T.V. Parasuram, 'US unlikely to take early decision on Arrow sale to India', July 24, 2002, at <https://www.outlookindia.com/newswire/story/us-unlikely-to-take-early-decision-on-arrow-sale-to-india/71206> (Accessed October 10, 2021).

⁹⁰ Sanjay Badri-Maharaj, 'Ballistic missile defence for India', July 2, 2009, at <http://www.bharat-rakshak.com/IAF/today/contemporary/328-bmd.html#gsc.tab=0> (Accessed October 10, 2021).

among other places. Apart from India, Turkey's decision to go in for the S-400 system, has invited American backlash. Ankara had to suffer consequences, including being shut out of the F-35 programme, in which it had a significant part.

Interactions between the foreign policy and national security establishments of both India and the US, meanwhile, are a continuing process to overcome the disadvantages posed by CAATSA. This, even as India-US defence trade has grown by leaps and bounds in recent times. The extent to which US sanctions targeting Russia for its February 2022 invasion of Ukraine would affect India-Russia defence trade, remains to be seen. Reports say that US sanctions could hit deliveries of the S-400 as well as other key procurement programmes like *Talwar*-class frigates (which are equipped with engines made in Ukraine).⁹¹

Israel was able to address India's growing defence requirements given its capabilities in such niche technology areas like UAVs and surveillance systems. Elta's AESA radar used in the Phalcon system, for instance, was touted as superior to that of mechanically rotating antennas, then used widely, endowing the system with 'greater operational flexibility ...'⁹²

The prowess of the Israeli systems was in contrast to the capabilities of other comparable systems that India tested in trials. Defence Minister George Fernandes informed the Upper House of Parliament in August 2000 that 'the performance of the Russian A-50 AWACS, as observed

⁹¹ Manu Pubby, 'Sanctions could hit deliveries of S-400, AK 203 and 11356 frigates from Russia', *The Economic Times*, February 25, 2022, at https://economictimes.indiatimes.com/news/defence/sanctions-could-hit-deliveries-of-s-400-ak-203-and-11356-frigates-from-russia/articleshow/89814071.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst (Accessed February 28, 2022).

⁹² See 'IAI Phalcon 707', *Global Security.org*, at <https://www.globalsecurity.org/military/world/israel/phalcon.htm> (Accessed October 20, 2021); See also Gareth Evans, 'Sixth sense: Asia's race for early warning missile detection capabilities', *Airforce Technology*, November 28, 2012, at <https://www.airforce-technology.com/features/featurenorth-korea-missile-launch-warning-detection/> (Accessed October 20, 2021).

during the demonstrations, did not meet the requirements of Indian Air Force'.⁹³ The Defence Minister's comments were after the A-50 was taken on lease for a period of 30 days to test its effectiveness and suitability.⁹⁴

Israeli companies have also been successful in bidding for contracts, given India's procurement policy framework, which privileges awarding the contract to the lowest bidder. The relative price advantage ostensibly helps them win the contract, which favours the lowest bidder. Elta, for instance, in 2007, was the lowest bidder in response to a request for proposals (RfP) for medium-power radars for the Indian Air Force in a contract worth over Rs. 800 crores. It is equally true that India did not go ahead with critical procurements like additional Phalcon AWACS when Israel and Russia quoted higher prices.⁹⁵

More recently, the Israeli firm, Elbit, quoted a cheaper price than a French gun-maker in a Government tender to supply towed artillery guns. Further, the firm also offered to make 70 per cent of the order in India, which was more than 50 per cent of the requirement, and offered to provide faster transfer of technology.⁹⁶ Reports, though,

⁹³ 'Procurement of surveillance system from Israel', Unstarred Question No. 1098, Rajya Sabha, August 2, 2000, at <https://pqars.nic.in/annex/190/Au1098.pdf> (Accessed October 25, 2021).

⁹⁴ 'Induction of AWACS', Unstarred Question 5487, Rajya Sabha, May 17, 2000, at <https://pqars.nic.in/annex/189/Au5487.pdf> (Accessed October 25, 2021).

⁹⁵ 'DRDO offers India Netra AEW&C on new platform', April 4, 2019, at https://www.defenseworld.net/news/24556/DRDO_Offers_India_Netra_AEW_C_On_New_Platform#.YSZSXo4zbIU (Accessed October 25, 2021).

⁹⁶ Ajai Shukla, 'Israeli firm Elbit Systems offers to build 70 per cent of artillery guns in India', *Business Standard*, December 10, 2020, at https://www.business-standard.com/article/current-affairs/israeli-firm-elbit-systems-offers-to-build-70-of-artillery-guns-in-india-120120901372_1.html (Accessed October 25, 2021); Snehash Alex Philip, 'Israel's ATHOS gun system or Atmanirbhar ATAGS? Defence negative list to finalise next week', *The Print*, May 28, 2021, at <https://theprint.in/defence/israels-athos-gun-system-or-atmanirbhar-atags-defence-negative-list-to-finalise-next-week/666695/> (Accessed October 25, 2021).

noted that the MoD did not finally go ahead with the Israeli offer for artillery guns, and instead focused on the DRDO-designed Advanced Towed Artillery Gun System (ATAGS), as well as procurement of the Larsen and Toubro-made K9 *Vajra* guns, made in collaboration with a South Korean defence firm, to fill operational gaps in the Eastern sector.⁹⁷

Israeli defence companies, meanwhile, invest substantially in research and development (R&D) to maintain their lead in terms of innovation. The IAI, for instance, lays a premium on innovation and is a corporate partner in domestic as well as global start-up accelerators like Starburst. Its US unit is part of the New Space Consortium, consisting of Lockheed Martin, US Air Force, NASA, MAXAR and SAIC. Seventy-five per cent of IAI's sales (\$3 billion in 2019; \$4.2 billion in 2020; \$4.5 billion in 2021) are to export markets. The company's sales in 2021 were the highest in its history. The IAI spent over \$1 billion on R&D in 2021, more than the \$900 million it had spent in 2019. The company's profits in 2021 were \$696 million, an increase on over 15 per cent from the previous year.⁹⁸ The IAI is one of Israel's largest industrial exporters and employers, with 16,000 employees.

The IAI's main domestic competitor, Rafael Advanced Defence Systems Limited, had sales of over \$3 billion (as against \$2.8 billion in 2020) and an order backlog of over \$7 billion. The company makes the Iron Dome point defence system, as well as the Spike and SPICE bombs, among a plethora of cutting-edge equipment. The company invests close to 10 per cent of its sales on R&D.⁹⁹

⁹⁷ Sandeep Unnithan, 'What's behind a massive order for Made-in-India howitzers', *India Today*, January 23, 2022, at <https://www.indiatoday.in/india-today-insight/story/what-s-behind-a-massive-order-for-made-in-india-howitzers-1903375-2022-01-23> (Accessed January 30, 2022).

⁹⁸ 'Israel Aerospace Industries Marks Most Profitable Year in Company History', Israel Aircraft Industries, March 16, 2022, at [https://www.iai.co.il/annual-financial-2021#:~:text=The%20Company's%20revenues%20in%202021,USD%20293%20million%20\(approx.](https://www.iai.co.il/annual-financial-2021#:~:text=The%20Company's%20revenues%20in%202021,USD%20293%20million%20(approx.) (Accessed April 30, 2022).

⁹⁹ 'Rafael concludes FY 2021 with net profit of \$133 million', IsraelDefense, April 4, 2022, at <https://www.israeldefense.co.il/en/node/54120> (Accessed May 5, 2022); 'Rafael concludes FY 2020 with sales of \$2.7 billion and net

Israel has continued to maintain its position as one of the biggest arms exporters in the world. During 2016-20, Israel was the eighth-largest arms exporter in the world, behind the US, Russia, France, Germany, China, the United Kingdom and Spain. Cutting-edge, niche equipment like missiles and sensors overwhelmingly make up the quantum of defence exports from Israel.

Israel is also one of the world's largest exporters of UAVs. During 2005-2012, one study noted that Israel exported \$4.6 billion worth of UAVs. At least half of these exports were to countries in Europe, like the United Kingdom, which procured a large number of Israeli Hermes 450 UAVs.¹⁰⁰ By 2017, it was estimated that Israel supplied close to 60 per cent of global UAV exports. At least 50 countries operate Israeli-made UAVs.¹⁰¹ Out of the total Israeli military exports in 2020 estimated at \$8 billion, the exports of UAVs accounted for at least \$500 million, or six per cent of total sales, as per reports.¹⁰² In October 2021, the Israel Air Force marked the 50th anniversary of operational use of UAVs. Such long-standing use, robust R&D investments, with an emphasis on innovation-led growth, will, no doubt, continue to enhance the value of the Israeli defence industrial base and help promote defence exports as well.

CRITICS OF THE DEFENCE RELATIONSHIP

A common feature across different governments is the stress on non-disclosure as regards India-Israel defence cooperation. Defence Minister

profit of \$94 million', Rafael Advanced Defence Systems Limited, March 24, 2021, at <https://www.rafael.co.il/press/rafael-concludes-fy-2020-with-sales-of-2-7-billion-and-net-profit-of-94-million/> (Accessed September 25, 2021).

¹⁰⁰ Gili Cohen, 'Israel Is World's Largest Exporter of Drones, Study Finds', May 19, 2013, at <https://www.haaretz.com/.premium-israel-is-greatest-exporter-of-drones-1.5243373> (Accessed September 25, 2021).

¹⁰¹ 'Armed drones in the Middle East', RUSI, at <https://drones.rusi.org/countries/israel/> (Accessed September 30, 2021).

¹⁰² Arie Egozi, 'Israeli Industry Pushing Jerusalem to Drop MTCR Drone Export Restrictions', September 27, 2021, at <https://breakingdefense.com/2021/09/israeli-industry-pushing-jerusalem-to-drop-mtcr-drone-export-restrictions/> (Accessed September 30, 2021).

Fernandes, in November 2001, when asked in the Rajya Sabha if India had signed defence deals with Israel amounting to \$2 billion, stated that while India was signing defence contracts with Israel, it was ‘not in the interest of national security’ to give details as to the nature of those contracts.¹⁰³

Defence Minister Antony told the Lok Sabha in November 2007 that:

Procurement/acquisition of items to meet defence requirements of the armed forces is made from various indigenous as well as foreign sources including Israel. ... Divulging details in this regard would not be in the interest of national security.¹⁰⁴

Responding to a query from Sitaram Yechury of the CPI (M) on the purchase of missiles from Israel, Antony insisted that ‘divulging details ... would not be in the interest of national security’.¹⁰⁵ Anthony, again, six years later in 2013, repeated the same national security argument when the government was asked by Chandan Mitra if India and Israel were jointly developing anti-missile defence systems.¹⁰⁶

Anthony’s successor, Manohar Parrikar, in December 2014, when asked whether the Government had signed a new defence equipment purchase with Israel, stated that while two capital procurement contracts were signed with Israeli vendors during the financial year, ‘divulging

¹⁰³ ‘Contracts for defence equipments with Israel’, Unstarred Question No. 1093, Rajya Sabha, November 28, 2001, at <https://rajyasabha.nic.in/rsnew/Questions/QResult.aspx> (Accessed October 2, 2021).

¹⁰⁴ ‘Indo-Israel Defence Deal’, Unstarred Question No. 1382, Lok Sabha, November 27, 2007, <http://loksabhaph.nic.in/Questions/QResult15.aspx?qref=56366&lsno=14> (Accessed October 2, 2021).

¹⁰⁵ ‘Purchase of missiles from Israel’, Unstarred Question No. 1108, Rajya Sabha, August 22, 2007, at <https://rajyasabha.nic.in/rsnew/Questions/QResult.aspx> (Accessed October 2, 2021).

¹⁰⁶ ‘Joint development programme with Israel to develop Iron Dome’, Unstarred Question No. 2514, Rajya Sabha, March 20, 2013, at <https://rajyasabha.nic.in/rsnew/Questions/QResult.aspx> (Accessed October 2, 2021).

of details will not be in the interest of national security'.¹⁰⁷ As noted earlier, the Government only on two occasions— in August 2005 and May 2007—disclosed data relating to the estimated financial volume of the India-Israel defence relationship.

Successive government's policy positions on not divulging detail about the nature and quantum of the India-Israel defence trade, is, no doubt, justified on account of national security considerations. There is, however, a better appreciation of the financial volume of India's other critical defence relationships, like the India-US defence relationship. The opacity surrounding the India-Israel defence relationship, specifically on aspects relating to financial volume, therefore, leaves space for critics to raise issues about the nature of the relationship.

After the Indian government cancelled the Spike ATGM deal in 2017, just ahead of Prime Minister Netanyahu's visit to India in January 2018, critics of India's defence engagement with Israel stated that the decision was a 'huge blow' to the Israeli weapons industry.¹⁰⁸ Such critics, though, discount the fact that the Spike ATGM is currently in the inventory of the armed forces of more than 30 countries. India, has also subsequently re-entered into contracts with the Israeli defence company, Rafael, for the supply of the Spike ATGM, to fulfil critical operational requirements.

During the discussion in the Indian Parliament on Israel's 2014 military operation in the Gaza Strip – Protective Edge– when the opposition demanded the passing of a Resolution critical of Israel, some lawmakers demanded that India stop its military cooperation with Israel. The Member of Parliament from Hyderabad, Asaddudin Owaisi, as well as CPI(M)'s Sitaram Yechury called for an end to the defence relationship

¹⁰⁷ 'Defence purchases from Israel', Unstarred Question No. 2189, Lok Sabha, December 5, 2014, at <http://loksabhaph.nic.in/Questions/QRresult15.aspx?qref=8695&lsno=16> (Accessed October 2, 2021).

¹⁰⁸ 'Movement to Boycott Israeli Industry Hails India's Decision to Scrap \$500m Missile Deal', *The Wire*, November 22, 2007, at <https://thewire.in/diplomacy/bds-movement-israel-india-missile-deal> (Accessed October 4, 2021).

with Israel.¹⁰⁹ Foreign Minister Sushma Swaraj, however, rejected the demand from the opposition leaders, and instead inquired whether they had made the same demands during Israel's previous military incursions in the Gaza Strip. She was presumably referring to Operation Cast Lead, when the Congress-led coalition was in power. Swaraj insisted that the Government continued to support the Palestinian cause at international fora even as it condemned instances of cross-border rocket attacks directed against Israeli civilian centres.¹¹⁰

DEFENCE JOINT VENTURES

Israeli companies have set up defence joint ventures with both the Indian state-owned as well as private sector companies to expand arenas of cooperation. The Hindustan Aeronautics Limited (HAL) JV with Elbit, called HALBIT, was set up in 2007 to not just focus on maintenance of avionics, simulators and training systems procured from the Israeli company but also to collaborate in the design and development of such systems. HALBIT has products encompassing the areas of simulation, avionics, and computer-aided learning systems (CALs). State-owned Bharat Dynamics Limited (BDL), as pointed out earlier, is the lead integrator for the MRSAM and LRSAM missile systems, along with Rafael, Bharat Electronics Limited (BEL) and Larsen and Toubro (L&T).

India's private sector defence companies have entered into significant joint ventures with Israeli companies to address the requirements of the Indian armed forces. HELA Systems Private Limited, formed by Tatas with IAI's subsidiary, Elta Systems Ltd (74-24 per cent share), was set up in 2004 and has solutions in electronic warfare and homeland security, among other niche areas. The JV had a turnover of Rs. 54.2 crores in 2020-21.¹¹¹ Rafael Advanced Defence Systems Ltd.'s proposal

¹⁰⁹ 'Uncorrected Verbatim Debates', Rajya Sabha, Session 232, July 21, 2014, at <https://rajyasabha.nic.in/business/newshow.aspx> (Accessed September 10, 2021).

¹¹⁰ Ibid.

¹¹¹ *Annual Report 2021*, HELA Systems Private Limited, at <https://www.hela.in/HELA-Form-MGT-7.pdf> (Accessed October 6, 2021).

for a JV with the Indian company, Mahindra and Mahindra in 2012 did not get regulatory approvals of the Foreign Investment Promotion Board (FIPB). As part of the JV, Rafael was to invest in the naval systems division of Mahindra and Mahindra in Pune.¹¹²

The JV between Adani Defence and Aerospace and Elbit Systems, meanwhile, set up an advanced UAV manufacturing facility in Hyderabad. The Adani group also signed a Letter of Award (LoA) with Elbit-ISTAR and Alpha Design Technologies Pvt Ltd in March 2016 to work together on UAVs for Indian requirements as well as for export opportunities.¹¹³ The Adani-Elbit UAV Complex was inaugurated in December 2018.

The Adani-Elbit JV secured the distinction of supplying Indian-manufactured UAVs to an unnamed Southeast Asian country. Other reports had mentioned that the country in question was Philippines, and that the value of the deal was over \$180 million, for a range of UAVs produced by Elbit, including Hermes 900, Hermes 450 for long-range missions and Skylark I and III for tactical missions.¹¹⁴ Both

¹¹² Amrita Nair Ghaswalla, 'M&M wants to know why its plan for joint venture with Rafael was rejected', *The Hindu Business Line*, January 1, 2013, at <https://www.thehindubusinessline.com/companies/MampM-wants-to-know-why-its-plan-for-joint-venture-with-Rafael-was-rejected/article20560520.ece> (Accessed October 8, 2021).

¹¹³ 'Adani Forays Into Defence Signs IoA With Elbit ISTAR And Alpha Design Technologies Pvt Ltd', Adani Enterprises, March 30, 2016, at <https://www.adanienterprises.com/newsroom/media-releases/Adani-forays-into-defence-signs-IoA-with-Elbit-ISTAR-and-Alpha-Design-Technologies-Pvt-Ltd> (Accessed October 8, 2021).

¹¹⁴ Manu Pubby, 'Defence Expo 2020: Adani-Elbit JV exports India-made military drone', February 7, 2020, at <https://economictimes.indiatimes.com/news/defence/defence-expo-2020-adani-elbit-jv-exports-india-made-military-drone/articleshow/73998264.cms?from=mdr> (Accessed October 8, 2021); 'Indo-Israeli UAV Joint Venture in \$180 Million Export Deal with Philippines', *DefenseWorld*, June 15, 2019, at https://www.defenseworld.net/news/24957/Indo_Israeli_UAV_Joint_Venture_in_180_Million_Export_Deal_with_Philippines#.YYe9b2BBzIU (Accessed October 8, 2021).

Adani and Elbit agreed to set up a Design and Development Centre at Hyderabad in February 2020 to focus on co-developing defence technologies.¹¹⁵

The Adani Group has another JV with Israel Weapons Industries (IWI) through PLR (Precise, Lethal, Reliable) Systems Limited. The company in November 2021 secured an order from the MoD, for its Masada 9 mm pistols, for the Indian Navy's marine commandos (MARCOS). The Adani Group acquired a majority stake in September 2020 in PLR Systems, which itself was incorporated in 2013.¹¹⁶ PLR Systems manufactures the Tavor assault rifles, the Galil sniper rifle, the Uzi sub-machine gun, among a host of niche products increasingly being used by the Indian armed forces and the central armed police forces (CAPF). The company is the first private sector entity to be given a license by the Government to manufacture small arms and ammunition.

Wipro Infrastructure Engineering (WIN), set up in 2013 by Wipro Enterprises, acquired an Israeli aerospace company, HR Givon in 2016, which manufactures metallic parts and assemblies for the aerospace industry. Wipro Aerospace has manufacturing sites in Israel, apart from India and the US. The IAI signed a Strategic Teaming Agreement with Wipro in July 2017 – one of the four defence-related agreements signed by the Indian private sector during the visit of Prime Minister Modi to Israel with his Israeli counterpart.¹¹⁷

¹¹⁵ 'Adani-Elbit JV Further Steps up Their Presence in the International Markets', February 6, 2020, at <https://www.adanidefence.com/newsroom/media-release/Adani-Elbit-JV-further-steps-up-their-presence-in-the-international-markets> (Accessed October 8, 2021).

¹¹⁶ 'Adani's defence subsidiary acquires majority stake in PLR Systems', September 11, 2020, at https://www.business-standard.com/article/companies/adani-defence-subsidiary-acquires-majority-stake-in-plr-systems-120091101525_1.html (Accessed October 8, 2021).

¹¹⁷ Israel Aerospace Industries, 'Israel Aerospace Industries Signs a Strategic Teaming Agreement for Industrial Cooperation in the Production of Composite Aero Structures With Wipro Enterprises (P) Limited in India', July 5, 2017, at <https://www.iai.co.il/israel-aerospace-industries-signs-strategic-teaming-agreement-industrial-cooperation-production> (Accessed October 8, 2021).

Apart from the Wipro-IAI agreement, other defence-related agreements that were signed by the private sector companies, at the first meeting of the India-Israel CEO Forum, included those between Mahindra Aerostructures and Elbit Systems, Mahindra Telephonics and Shachaf Engineering for strategic electronics, Kalyani Strategic Systems Limited and IAI for opportunities in air defence systems, radars, among others, and Dynamatic Technologies, Elcom Systems with the IAI for collaboration in the field of unmanned systems.¹¹⁸

Industry groups like the Society for Indian Defence Manufacturers (SIDM), along with SIBAT, the Israeli MoD defence cooperation directorate, have taken an active interest to build partnerships between Indian and Israeli defence firms. At a MoD, SIDM, SIBAT webinar in September 2020, Indian MoD officials flagged the country's huge modernization requirements relating to artillery guns, multi-role fighters, helicopters, among other equipment and the opportunities for cooperation between Indian and Israeli defence firms. It was pointed out during the event that at least nine Indian companies have signed 23 MoUs with four Israeli firms – IAI, Rafael, Elbit and Elta Systems.¹¹⁹ Joint MoD-SIDM teams have also visited Israel to explore business opportunities.

INDIAN DEFENCE AND AEROSPACE EXPORTS TO ISRAEL

Though minimal, India's defence and aerospace exports to Israel include helicopters, airframe structures, as well as arms and ammunition. Israel showed interest in the *Lakshya* pilotless aircraft and paid for demonstration flights but did not proceed with buying the aircraft.¹²⁰

¹¹⁸ 'First Meeting of India-Israel CEOs Forum coincides with the visit of PM Modi to Israel', Federation of Indian Chambers of Commerce and Industry, July 6, 2017, at <https://ficci.in/PressRelease/2818/ficci-press-release-jul6-mou-israel1.pdf> (Accessed October 9, 2021).

¹¹⁹ Ajai Shukla, 'India invites Israeli firms to cooperate in meeting \$130 billion weapons need', *Business Standard*, September 25, 2021, at <https://www.ajaiishukla.com/2020/09/india-invites-israeli-firms-to.html> (Accessed October 9, 2021).

¹²⁰ 'Sale of pilotless target aircraft Lakshya to Israel', Unstarred Question Number 2015, Rajya Sabha, August 9, 2001, at <https://rajyasabha.nic.in/rsnew/Questions/QRResult.aspx> (Accessed October 9, 2021).

A contract for one *Dhruv* helicopter was signed by the HAL with IAI in November 2004. An MOU for joint marketing of the *Dhruv* helicopter – integrated with IAI’s avionics, was also signed, though not much progress was made on this front.

HAL’s export business encompasses work packages, conversion kits, among others, for jet aircrafts. HAL secured a contract from the IAI in 2002 for the conversion of Boeing 737 passenger jets to cargo aircraft. This was HAL’s first foray in the international civil aviation market.¹²¹ HAL also bagged an order from IAI to make airframe structures for transport aircraft in 2018.¹²²

India has exported arms and ammunition (HS Classification Code 93) to Israel to the tune of at least US\$ 200 million, even as it has imported nearly US\$ 80 million of goods under the same classification.¹²³ The Indian private sector is also engaging with Israeli companies and agencies to fulfill their security requirements. Tonbo Imaging, for instance, is a niche Start-Up that began eight years ago with Rs 220 crore of private capital and has generated revenue of Rs 400 crore. The CEO of the company, while speaking at a seminar on Atmanirbhar Bharat in February 2021, informed the audience that even the Israeli external intelligence agency, the Mossad, was one of his customers.¹²⁴ Earlier, in October 2016, the private sector company, Alpha Design Technologies bagged a multi-million dollar contract from Elbit Systems to supply VHF

¹²¹ ‘HAL to outsource aircraft components to pvt. sector’, February 21, 2002, at <https://m.rediff.com/money/2002/feb/21hal.htm> (Accessed October 9, 2021).

¹²² ‘HAL inks major deals with Israeli defence firms’, Press Trust of India, July 19, 2006, at https://economictimes.indiatimes.com/industry/transportation/airlines/-aviation/hal-inks-major-deals-with-israeli-defence-firms/articleshow/1778664.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst (Accessed October 9, 2021).

¹²³ ‘Export Import Data Bank’, Ministry of Commerce and Industry, at <https://tradestat.commerce.gov.in/eidb/default.asp> (Accessed October 9, 2021).

¹²⁴ Remarks by Arvind Laxmi Kumar, CEO, Tonbo Imaging, at the MoD-Industry Webinar on Budget 2021-2022, ‘Galvanizing Efforts for Atmanirbhar Bharat’, New Delhi, February 23, 2021.

communication devices for exports.¹²⁵ As noted earlier, the Adani-Elbit UAV joint venture has exported UAV's to a Southeast Asian country.

THE ATMANIRBHAR BHARAT ABHIYAN AND IMPLICATIONS FOR INDIA-ISRAEL DEFENCE TRADE

The Ministry of Defence (MoD) is laying a lot of emphasis on defence indigenisation, domestic procurement and defence exports. During the period 2015–2021, over 60 per cent of capital procurement contracts of the MoD by number (190 out of 304) and 43 per cent by value (Rs 1,39,038 crore out of Rs 3,21,376 crore) were secured by the domestic industry.¹²⁶ The Government's Atmanirbhar Bharat Abhiyan (ABA) aims to unlock the potential of the domestic industry and manufacturers to meet the country's growing requirements. The ABA call has special significance for the defence sector, as the country has long been dependent on imports to fulfil most of its platform as well as niche equipment requirements.

To encourage innovation-led technology development in the defence and aerospace sector, the iDEX—Innovation for Defence Excellence, was launched in April 2018. Four Defence India Start-Up Challenges (DISC) have been held so far, in which over 1,000 Start-Ups have participated. Budgetary support of Rs 500 crore has been earmarked for iDEX till 2025–26, for Start-Ups, MSMEs and individual investors, through the Defence Innovation Organisation (DIO), an umbrella organisation formed with financial contributions from the aeronautics

¹²⁵ 'Alpha Design Technologies bags prestigious contract for defence communication equipment from Elbit Systems', October 6, 2016, at <https://www.adtl.co.in/news/alpha-design-technologies-bags-prestigious-contract-for-defence-communication-equipment-from-elbit-systems> (Accessed October 9, 2021).

¹²⁶ 'Government Spending on Military Modernisation', Press Information Bureau, Ministry of Defence, Government of India, March 8, 2021, at <https://pib.gov.in/PressReleaseDetailm.aspx?PRID=1703203> (Accessed August 25, 2021).

major, Hindustan Aeronautics Limited (HAL) and Bharat Electronics Limited (BEL).¹²⁷

In the 2021–22 defence budget, an amount of Rs 1,000 crore has been exclusively earmarked for procurement from Start-Ups. The 2022-23 budget, meanwhile, set aside an allocation of 25 per cent of R&D budget for the academia, Start-Ups and the private industry. Over 80 Start-Ups are developing more than 30 cutting-edge products. The Government aims to double the number of products developed by Start-Ups to at least 60 by 2024. In order to more actively involve the stakeholders in developing cutting-edge products most suited to the requirements of the armed forces, iDEX4Fauji was also launched in September 2020.

The Strategic Partnership (SP) model, first promulgated as part of the Defence Procurement Procedure 2016, is an effort to energise the domestic defence industrial ecosystem. The model seeks to encourage domestic industry to enter into tie-ups with global original equipment manufacturers (OEMs) to set up manufacturing and infrastructure supply chains with transfer of technology (ToT). The Defence Acquisition Council (DAC) approved the issue of Request for Proposal (RfP) for construction of six conventional submarines, in June 2021, the first such project pursued under this model.

Up to forty-nine per cent foreign direct investment (FDI) is permitted through the automatic route while investment beyond that requires Government approval. The FDI limit was raised from 49 to 74 per cent in August 2020. The total FDI in the defence sector till January 2021 was Rs. 4,191 crore. It is pertinent to note that a significant portion of this, Rs. 2,871 crore, was received after 2014. The Government has approved 44 FDI proposals in the defence sector.¹²⁸

¹²⁷ ‘Innovations for Defence Excellence (iDEX)’, Press Information Bureau, Ministry of Defence, Government of India, July 28, 2021, at <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1739954> (Accessed August 25, 2021); ‘Defence Start-Ups’, Press Information Bureau, Ministry of Defence, Government of India, December 17, 2021, at <https://pib.gov.in/PressReleasePage.aspx?PRID=1782604> (Accessed December 25, 2021).

¹²⁸ ‘Government Spending on Military Modernisation’, n. 126.

The Government has introduced a separate domestic capital expenditure (CAPEX) budget of Rs 51,930 crore in 2020–21, nearly half of the total CAPEX budget. In 2021–22, this figure increased to Rs 71,438 crore, or 64 per cent of the total capital expenditure budget of Rs 1,11,463.21 crore.¹²⁹ In the 2022-23 defence budget, the domestic capital expenditure budget rose to Rs. 84,598 crore, or nearly 68 per cent of the total capital budget of about Rs 125,000 crore.¹³⁰

The Policy for Indigenisation of Components and Spares used in defence platforms, which was notified in March 2019, had actually suggested that this domestic CAPEX be increased by 15 per cent every year. The actual increase in 2021–22, which was close to 30 per cent, therefore, was double of that suggested. In August 2020, a ‘positive’ list of indigenisation, of 101 items, was released. The list included mostly major platforms like armoured fighting vehicles (AFVs), conventional submarines, light combat helicopters (LCHs), artillery guns and also items like radars. Going forward, the aim is to procure such items from the domestic industry, within specific periods, while embargoing their imports. The cumulative value of imports of these items over the past decade was Rs 140,000 crores.

Another list released in May 2021, comprised 108 items, including sensors, weapons and ammunition, radars, tank engines, AEW&C systems, which will only be sourced from the domestic industry by 2025.¹³¹ The DRDO also released a list of 108 systems and sub-systems in August 2020, which can be designed, developed and produced

¹²⁹ ‘Efforts to Encourage Domestic Manufacturing’, Press Information Bureau, Ministry of Defence, Government of India, August 2, 2021, at <https://pib.gov.in/PressReleasePage.aspx?PRID=1741475> (Accessed August 10, 2021).

¹³⁰ ‘Union Budget 2022-23’, Press Information Bureau, February 1, 2022, at <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1794415> (Accessed February 2, 2022).

¹³¹ ‘MoD Notifies “Second Positive Indigenisation List” of 108 Items to Promote Self-reliance and Defence Exports’, Press Information Bureau, Ministry of Defence, Government of India, May 31, 2021, at <https://pib.gov.in/PressReleasePage.aspx?PRID=1723148> (Accessed July 10, 2021).

exclusively by the domestic industry.¹³² The contract for 83 Light Combat Aircraft (LCA), valued at over Rs 48,000 crores, is the biggest domestic procurement contract ever. More than 500 MSMEs will be involved in executing the project.

India has also made rapid strides in defence exports. India was listed at the 23rd position as the global arms exporter by SIPRI in 2020, the first time that India made it to the list. The aim is to achieve a defence exports target of US\$ 5 billion by 2025. With a strong domestic defence industry and a strong exports profile, India aims to become an essential part of the global defence value chain. At the same time, the aim is to reduce the country's dependence on defence imports. India has spent over US\$ 36 billion (SIPRI TIV) on imports during 2010–20. Over 90 per cent of imports were from Russia (accounting for 63 per cent), the US (11 per cent), Israel (8 per cent), France (7.5 per cent) and the UK (3 per cent). During 2015–19, India accounted for more than 9 per cent of global arms imports. India's cumulative arms imports during 2016–20, though, were 33 per cent lower than the imports during 2011–15.

The Government therefore, has taken significant policy decisions in recent times to boost domestic defence manufacturing, facilitate defence indigenisation, reduce imports and enhance exports. There is a robust intent and resolve on the part of the Government to make the Indian defence sector companies 'Vishwa Vyapi' (world-encompassing) companies.¹³³

¹³² 'DRDO Comes Out With List of 108 Military Systems for Production by Domestic Industry', *The Economic Times*, August 24, 2020, at https://economictimes.indiatimes.com/news/defence/drdo-comes-out-with-list-of-108-military-systems-for-production-by-domestic-industry/articleshow/77726251.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst (Accessed August 30, 2021).

¹³³ Raksha Mantri Rajnath Singh used this term while speaking at a MoD-Industry webinar on the Defence Budget 2021–22, 'Galvanising Efforts for Atma Nirbhar Bharat', held at New Delhi, on February 23, 2021.

SRIJAN DEFENCE INDIGENISATION PORTAL

Given this policy framework, what will be the impact on India's key defence relationships with strategic partners like Israel? It is instructive to look at the Srijan defence indigenisation portal, which became active in August 2020.¹³⁴ The portal lists items which have been procured from foreign original equipment manufacturers (OEMs) by the DPSUs, ordnance factories and Service headquarters. The domestic industry is encouraged to engage and partner with the private sector in order to assist in the MoD's indigenisation efforts. The domestic industry can either design, develop and produce these equipment on their own or through joint ventures with the OEMs.

The Srijan portal flows from the March 2019 Policy for the Indigenisation of Components and Spares used in Defence Platforms for DPSUs/OFBs. The Policy document notes that the value of components imported by the DPSUs/OFBs during 2017–18 was nearly Rs 14,000 crores. The aim is to reduce the import bill of the DPSUs on this count. The MoD specifically pledges to support the development of capabilities relating to engine technology, materials technology and electronic chip technology. It will also give priority to indigenised components for testing and evaluation and encourage their exports.¹³⁵

More than 19,000 products, imported during the period 2018–22, have been listed for indigenisation, by the target year 2025–26. By July 2021, the Indian industry had shown interest for indigenisation of nearly 3,000 items. The portal lists, as of end of January 2022, nearly 90 products worth Rs. 50 million (Rs. 5 crore) and above, which have been imported during 2020–21, for a cumulative value of Rs. 20,000

¹³⁴ 'Opportunities for Make in India in Defence', Department of Defence Production, Ministry of Defence, Government of India, at <https://srijandefence.gov.in/> (Accessed February 2, 2022).

¹³⁵ 'Policy for Indigenization of Spares and Components used in Defence Platforms for DPSUs/OFBs', Department of Defence Production, Ministry of Defence, Government of India, March 8, 2019, at <https://srijandefence.gov.in/Policy&framwork.pdf> (Accessed February 2, 2022).

million (Rs 2,000 crores or about US\$ 270 million).¹³⁶ These include components like data link transmitters, guided missile components and navigation instruments, imported by the Bharat Dynamics Limited (BDL), from Israeli OEMs like Elbit Systems and the Israel Aircraft Industries (IAI). The cumulative value of the imported components, from 2019 onwards and projected requirement till 2023, is close to Rs 1,000 million (Rs 100 crores or about US\$ 14 million).

Earlier in September 2021, at least four such parts and equipment imported by the electronics major, Bharat Dynamics Limited (BDL) and the aerospace major, Hindustan Aeronautics Limited (HAL), from Israeli OEMs like Elbit Systems and the IAI, were listed. These include equipment for the beyond visual range (BVR) 'Astra' weapon system produced by the BDL, and display head assembly by HAL Avionics Division, Korwa. The cumulative value of imports of these equipment till 2025 is expected to be more than Rs. 1,300 million (Rs. 130 crore/US\$ 18 million). The projected value of imports by HAL's Korwa unit from Israeli companies of products valued between Rs 10–50 million (Rs 1 crore–Rs 5 crore) till 2025 is expected to be nearly Rs 700 million (Rs 70 crore/US\$ 9 million). The projected value of imports by HAL's Korwa unit, apart from BDL, BEL and the HAL, from Israeli companies of products valued between Rs 0.5–5 million (Rs 0.05 crore–Rs 0.5 crore) up to 2025, is expected to be nearly Rs 138 million (Rs 13.8 crore/US\$ 2 million).

Previously, the portal had also listed equipment and parts being imported from Israeli OEMs related to the Akash missile system (by BDL) and electronic and niche items by BDL and HAL. In September 2020, for instance, at least 23 products, worth over Rs 10 million (Rs 1 crore) each, were being sourced from Israeli companies. In September 2021, this number has reduced to eight. Items like the pressurised container system and sensor package unit for the Akash missile system made by the BDL, printed circuit boards and voltage control oscillators imported by the HAL, are no longer listed on the portal, perhaps signifying

¹³⁶ For reference purposes, 1 US\$ is taken as equivalent to Rs. 75. The portal lists the values of the components in Rs. million.

success in the indigenisation of such parts. In March 2016, Defence Minister Manohar Parrikar had informed Parliament that the imported content in the Akash missile system—touted as an indigenous system—was around 10 per cent.¹⁵⁷ If the BDL was no longer importing some parts for the Akash missile system, the imported components percentage would have surely come down.

The Srijan defence indigenisation portal, is therefore, a significant initiative which brings to attention the consequences of India's defence indigenisation efforts for key defence relationships. Going forward, the quantum of defence imports from Israel, of products and equipment currently being imported, will reduce to the tune of at least Rs 9,000 million (Rs 900 crores or about US\$ 120 million), if the indigenisation efforts of the MoD in conjunction with the Indian industry, the DPSUs and ordnance factories, fructifies. Admittedly, this amount is not that significant in the current overall context and volume of the Indo-Israel defence trade, but is useful to highlight, given the MoD's robust indigenisation efforts. The cumulative impact of the policy measures that India is following in the defence sector to attain self-reliance and promote indigenisation, if taken to their logical conclusion, will negatively impact the quantum of defence trade with key partners like Israel, less so in the near term but increasingly so in the medium-to-long terms.

¹⁵⁷ 'Achievements Made by DRDO', Unstarred Question 1168, Rajya Sabha, March 8, 2016, at <https://rajyasabha.nic.in/rsnew/Questions/QResult.aspx> (Accessed August 25, 2021).

**Table 1: Annual Import Value of Equipment from Israeli OEMs
Rs 10 million (approx. US\$ 130,000) and Above**

DPSU	Imported product	Import Value of product (since 2017-18) and Projected requirement (2025-26) (Rs in Million)
AWEIL	Buffer recoil mechanism	91
	Barrel extension assembly	139.7
	Slide assembly retracting	60.6
	Cover assembly	129.4
	Plate assembly with safety	158.2
	Barrel machine gun	182.6
	Yaw Bearing Assembly	16.47
BEL	Electronic modem for ETC	701.2
	MFSTAR-Antenna	497
	Radio Interface Adapter for ETC	142.2
	Radio Interface card	60
	Monitor Sync Unit (MSU) Electronic module	45
	Yaw Bearing Assembly	16.47
BDL	Data link transfer for Astra launcher (Elbit systems)	330.7
	RF Front end (Astra) (Elbit Systems)	361.9
	Inertial measuring unit (Astra) (IAI Ltd)	703.9
	Sensor package unit	1015.7
	Ring laser gyro	535.2
	Pressurised missile container	637.5
HAL	Display head assembly	320
	Radar processor	1077.7

DPSU	Imported product	Import Value of product (since 2017-18) and Projected requirement (2025-26) (Rs in Million)
	Transmitter	239.57
	Combiner assembly	261.77
	Beam Combiner	93.41
	Electronic components assembly	76.87
	Voltage control oscillator	60.21
	Portable solid state memory 64 GB	24.57
	Flash Disc Code	
	Printed circuit board ACCT.BOX.KITElectronic	42.1
	components assembly	97.9
	TWT Specification P/NO: 1020H012-001	15.57
	Electronic components assembly	
	Radio Frequency Interference filter	14.84
	Filter box assembly	23.74
	Tilt motor	13.51
	Video/Audio Coder/Encoder	11.97
Total import value	Night vision goggle Gen 111	735 Rs 8933.47 million (\$ 120 million approx)

Note: The Srijan portal maintains a dynamic list, where the parts and/or components are de-listed or categorised as ‘indigenised’/‘item not required’ etc depending on the status of indigenisation. The items included in the table are those which the Srijan portal explicitly mentions were imported from Israeli OEMs.

Source: ‘Opportunities for Make in India Defence’, Department of Defence Production, Ministry of Defence, at <https://srijandefence.gov.in/ProductList> (Accessed September 2020, September 2021 and April 2022).

INTERNAL SECURITY AND BORDER SECURITY COOPERATION

India and Israel have established significant cooperation mechanisms in border security and internal security. Israel's counter-terror policies and practices are a subject of much study and appreciation, especially by those who advocate the replication of similar 'muscular' policies to deal with terror threats. The chapter highlights key aspects of cooperation between India-Israel in border security and counter-terrorism. It firstly, delineates Israel's counter-terrorism experience, to distil the key aspects of Israel's policy measures.

ISRAEL AND COUNTER-TERRORISM

Israel's unique counter-terrorism experience is often touted as an important national attribute, which can be adapted to suit the requirements of other countries in their fight against terror. Israeli analysts note that the country has suffered more from terrorism than any other country in the world, vis-à-vis the size of its population. The country's geography also imposes a unique vulnerability on its security choices. While terrorist incidents affect a narrow section of the population or territory in most other countries, in Israel, terrorism is viewed as a national security problem impacting the entire territory and population.

Till the 1973 Yom Kippur War, Israel's main concerns related to the need to repulse a joint conventional attack by its Arab enemies. The fledgling Israel Defense Force (IDF) – termed the 'Israel Offense Force' in reality, by the former Vice Chief of the IDF, Gen. Israel Tal, successfully repulsed the Arab onslaught and protected the country's sovereignty during the 1948 War of Independence.¹³⁸ The 1948 War

¹³⁸ Israel Tal, *National Security: The Israeli Experience* (Translated by Martin Kett), Praeger, London, 2000, p. 43.

of Independence led to the establishment of the 'Green Line', demarcating the country's borders from its Arab neighbours. After the 1967 war, Israel occupied East Jerusalem, Golan Heights, Sinai, and the West Bank, territories beyond the Green Line. Israel, therefore, acquired strategic depth and pushed Syria out of its artillery range.

After the 1973 war, most of the significant threats that Israel had to grapple with frequently were asymmetric in nature. Organizations like the military wing of the Hamas, the Palestinian Islamic Jihad, the Popular Resistance Committees (PRC), among others, draw their ideological and physical sustenance from the long-running Israel-Palestinian conflict, described as a 'protracted' conflict four decades ago and which still continues unabated.¹³⁹

The uprising (Intifada) by the Palestinians during the 1980s and the 2000s was a unique national security problem, initially viewed as a law and order problem but increasingly dealt with by the IDF which was called to quell the violent protests.¹⁴⁰ These protests were accompanied by suicide bombings and increasing Israeli casualty figures. In the past two decades, until mid-2021, 1,377 Israeli citizens and 75 IDF soldiers, lost their lives as a result of acts of terrorism by Palestinian groups.¹⁴¹ A majority of these fatalities have been due to suicide bombings. Israel has used a plethora of offensive and defensive kinetic measures (in terms of tactics) and active and passive defences to counter the asymmetric terror threats. Targeting the terrorist leadership, in preventive decapitating strikes, for instance, has been a hallmark of the Israeli counter-terror strategy. Israel has taken out key terrorist leaders, both within the Gaza Strip as well as in places like Dubai. In the military

¹³⁹ Edward E. Azar *et. al*, "Protracted Social Conflict: Theory and Practice in the Middle East", *Journal of Palestine Studies*, 8(1), Autumn 1978, pp. 41-60.

¹⁴⁰ Efraim Inbar, *Israel's National Security: Issues and Challenges since the Yom Kippur War*, Routledge, London, 2008, p. 39.

¹⁴¹ 'In Memory of the Victims of Palestinian Violence and Terrorism in Israel', Israel Ministry of Foreign Affairs at <https://mfa.gov.il/MFA/ForeignPolicy/Terrorism/Victims/Pages/In%20Memory%20of%20the%20Victims%20of%20Palestinian%20Violence%20a.aspx> (Accessed February 15, 2022).

confrontations in the Gaza Strip – Operation Cast Lead (2008-09), Operation Pillar of Defence (2012), Operation Protective Edge (2014), Operation Guardian of the Walls (2021) – Israel has invested its effort in specifically targeting terrorist leadership as well as the terror infrastructure, beyond the Gaza Strip as well.

Israel, for instance, has carried out punitive strikes in places as far away as Iraq and Syria against both terror infrastructure and weapons storage sites and convoys that were allegedly supplying to groups like the Hamas and the Hezbollah. Israel's military interventions in the Gaza Strip, post the 2005 dis-engagement, have been termed as a 'mowing the grass' tactics, in order to degrade enemy military capability. Israeli analysts, therefore, argue that such wars of attrition are not meant to achieve 'impossible political goals', in the face of 'intransigent' Palestinian abilities to make compromises from their core positions on Israeli sovereignty and territoriality.¹⁴²

As for active measures, the effective Iron Dome missile system is a unique example of the success of Israel's efforts to counter rapidly changing terror tactics. When the Palestinian terror groups indulged in suicide bombings, Israel built very effective barriers to prevent the entry of the suicide bombers into Israeli territory. When the Palestinian terror groups indulged in rocket attacks, primarily in order to overcome effective Israeli border security tactics, they were met with very effective measures like the Iron Dome point defence system.

The Iron Dome system, in operation since April 2011, is very effective in countering projectiles at ranges of 4-70 kms. Israel states that over 15,000 projectiles have been fired at population centres within the country, since 2000. The Iron Dome system had an interception rate of over 85 per cent, of projectiles deemed to be landing over populated centres. During the 2014 military confrontation Operation Protective Edge, for instance, out of the 4,500 rockets fired at Israel, at least 700 projectiles deemed as a threat by the system were intercepted, for an

¹⁴² See Efraim Inbar and Eitan Shamir, 'Mowing the Grass: Israel's Strategy for Protracted Intractable Conflict', *Journal of Strategic Studies*, 37(1), 2014.

almost 85 per cent success rate.¹⁴³ During Operation Guardian of the Walls (2021), the system had a 90 per cent success rate, successfully taking out those determined as threatening population centres, out of the 4360 rockets fired from the Gaza Strip.¹⁴⁴

As for defensive measures, Israel has built border perimeters across its land borders with its neighbouring countries, including Egypt, Syria, Jordan and ring-fenced the Palestinian territories in the Gaza Strip and the West Bank. Israel's borders with Egypt and Jordan are internationally recognized while the country's borders with Syria, Lebanon, West Bank and the Gaza Strip are not.

As with all its borders, security considerations play an important role in determining the country's border management policies. Israel's longest border, at 240 kms, is with Egypt, with which the country has a peace treaty dating back to 1979. The twin challenges that Israel has faced across its border with Egypt in recent times have been the terror threat from Sinai from radical Islamists as well as the problem of African refugees. The terror threat has significantly reduced, after the coming to power of the military government of Gen. Abdel Fatah Al-Sisi in 2013.

Israel's National Security Council (NSC) Counter-terrorism (CT) bureau reduced the threat level in southern Sinai to Israeli tourists from Level 1 (very high concrete threat) to Level 3 (basic concrete threat) in August 2021, the first time it did so in 17 years.¹⁴⁵ The threat level continues to remain high (Level 3) for areas in northern Sinai, while in the rest of Egypt for Israeli tourists, the categorization by the NSC is at Level 1.

¹⁴³ 'Operation Protective Edge', Israel Defense Force, August 26, 2014, at <https://www.idf.il/en/minisites/wars-and-operations/operation-protective-edge/> (August 30, 2021).

¹⁴⁴ Ministry of Foreign Affairs, 'Operation Guardian of the Walls', May 20, 2021, at <https://www.gov.il/en/Departments/General/operation-guardian-of-the-walls-10-may-2021> (Accessed May 25, 2021).

¹⁴⁵ The threat level was pegged at the highest in the aftermath of terror attacks targeting Israeli tourists in the southern Sinai beach resorts in 2004. See 'Travel warnings', Israel National Security Council, at <https://www.nsc.gov.il/English/Travel-Warnings/Pages/allwarnings.aspx?lcountry=E> (Accessed September 20, 2021).

The problem with the African refugees, primarily from conflict hotspots like Eritrea and Sudan, has significantly reduced due to a combination of executive and security steps that Israel has taken. These include strengthened border management policies, more robust border fencing, domestic executive measures that discourage employment opportunities for illegal migrants in tourist places like Eilat, for instance, and even paid schemes to deport refugees back to their home country or even other countries in Africa.

The Israel-West Bank barrier, meanwhile, has been touted as the largest construction project in Israeli history. The Second Intifada was a big catalyst for the barrier's construction, in order to prevent Palestinian suicide attacks. As noted in earlier sections, suicide attacks were responsible for nearly 40 per cent of all Israeli casualties since 2000. During the Second Intifada during 2000-2007, 140 suicide attacks killed 542 Israeli citizens.¹⁴⁶ After the strengthened barrier, the number of suicide attacks drastically reduced, given that the next 14 years resulted in about 700 Israeli fatalities in total.

Palestinian terror groups, in fact, changed their tactics and increasingly resorted to launching crude rockets on Israeli population centres. Active defence measures like the Iron Dome have been very effective in countering such projectiles. While defensive perimeter solutions like security barriers have been very effective in countering terror threats, they have led to criticism relating to the movement of Palestinians, encroaching of Palestinian land and the charge of Israel being a 'walled state'. The following Table lists key Israeli kinetic and non-kinetic counter-terror measures in its fight against the Hezbollah and the Palestinian groups operating in the Gaza Strip.¹⁴⁷

¹⁴⁶ 'Suicide and Other Bombing Attacks in Israel Since the Declaration of Principles (September 1993),' Ministry of Foreign Affairs, April 19, 2016 (Updated), at <https://www.mfa.gov.il/MFA/ForeignPolicy/Terrorism/Palestinian/Pages/Suicide%20and%20Other%20Bombing%20Attacks%20in%20Israel%20Since.aspx> (Accessed September 5 2021).

¹⁴⁷ See S. Samuel C. Rajiv, 'Israel and Hybrid Warfare', in Vikrant Deshpande (ed.), *Hybrid Warfare: The Changing Character of Conflict*, Pentagon Press, New Delhi, 2018, pp. 122-140.

Table 2: Israel's Kinetic and Non-Kinetic Responses to Terror Threats

Antagonist	Nature of Response	
	Kinetic	Non-Kinetic
Hezbollah	<p>Military invasion and occupation (1982-2000)</p> <p>Large-scale use of air power (2006 Lebanon War);</p> <p>Targeted killings</p> <p>Air strikes against weapons depots, ammunition convoys, among others, not just on Lebanese territory but in places like Syria and even as far as Iraq</p> <p>Active defence systems like 'David's Sling'</p>	<p>Air raid shelters</p> <p>Strengthening Home front command</p> <p>Information warfare</p>
Gaza Conflicts post-2005 Disengagement	<p>Large-scale use of air-land forces;</p> <p>Targeted killings;</p> <p>'Mowing the grass' tactics;</p> <p>Wars of attrition;</p> <p>Active defence systems like 'Iron Dome'</p>	<p>Defensive perimeters with motion detection sensors, among other technological solutions;</p> <p>Economic measures (land, air, and sea blockade; Tax revenues and electricity supply used as leverage)</p>

Israeli governments swear by the efficacy of the country's counter-terrorism strategy, given the drastic reduction in the fatalities of its citizens due to terrorist attacks, as well as due to the affirmed strength of the Israeli public (termed its 'resilience') to terrorist attacks. The Government's strong responses to incidents of terror or rocket strikes on its territory are touted as essential steps to restore deterrence. During the 2021 Gaza military action, taken in response to rocket strikes, Prime

Minister Benjamin Netanyahu insisted that his government will 'take whatever action necessary to restore quiet and security to all residents of Israel'.¹⁴⁸ A few days earlier, Netanyahu asserted that Hamas 'will pay a very heavy price' for targeting Israeli population centres with missiles.¹⁴⁹ The large-scale air strikes, as well as land incursions into Gaza in the recent past, are viewed as imperative to degrade enemy capabilities. The Israeli tactics do result in significant loss of Palestinian lives and damage to infrastructure in the Gaza Strip. Israel, however, insists that the primary responsibility lies with the militant groups in the Gaza Strip using extremely congested civilian areas as launchpads to launch rocket and terror strikes in Israeli population areas.

INDIA-ISRAEL INTERNAL SECURITY/COUNTER-TERROR COOPERATION

A significant amount of cooperation in the field of counter-terrorism and internal security has taken place between India and Israel, albeit, away from the public glare. As soon as full diplomatic relations were established, Indian leaders flagged counter-terrorism as a key area for cooperation. A month after India and Israel established full diplomatic ties, then Defence Minister Sharad Pawar identified this area as a key focus of cooperation,¹⁵⁰ and Ashok Tandon, the head of the National Security Guard (NSG), visited Israel as early as in 1995.

It is significant to point out that an Israeli delegation led by then National Security Adviser, Uzi Dayan, was in a strategic dialogue with Indian

¹⁴⁸ 'Statement by PM Netanyahu', Ministry of Foreign Affairs, May 17, 2021, at <https://mfa.gov.il/MFA/PressRoom/2021/Pages/Statement-by-PM-Netanyahu-17-May-2021.aspx> (Accessed September 5, 2021).

¹⁴⁹ 'Statement by PM Netanyahu following a security assessment at the Kirya', Ministry of Foreign Affairs, May 14, 2021, at <https://mfa.gov.il/MFA/PressRoom/2021/Pages/Statement-by-PM-Netanyahu-14-May2021.aspx> (Accessed September 5, 2021).

¹⁵⁰ P.R. Kumaraswamy, 'India and Israel: Evolving Strategic Partnership', Begin-Sadat Center for Strategic Studies, 1998, p. 11, at <http://www.jstor.com/stable/resrep04726.6> (Accessed September 10, 2021).

counterparts, when Al Qaeda attacked New York on September 11, 2001. National Security Adviser Brajesh Mishra, addressing the American Jewish Committee's Annual Dinner in May 2003, a few months after 9/11, stated that India, the US and Israel have been 'prime targets of terrorism' and that all the three countries should jointly tackle the terror threat.¹⁵¹

The Joint Working Group on CT, however, was only established ten years after the establishment of full diplomatic ties, in 2002. Analysts opine that a possible reason for why counter-terrorism (CT) cooperation was not pursued vigorously till then, at least in the public domain, was because both countries faced different sources of threats.¹⁵² Some analysts also flag 'domestic political sensitivity' for the apparent (public) lack of emphasis on CT cooperation.¹⁵³

After the November 2008 Mumbai terror strikes, in which Israeli and Jewish citizens lost their lives, it could be argued that there was, in fact, greater congruence between the two countries in the arena of CT cooperation. India increasingly procured niche equipment to better equip its security forces to face the terror threat, even in places like Kashmir. Israeli assault weapons, for instance, became ubiquitous equipment for Indian security forces in such critical hotspots. Israel's

¹⁵¹ 'Address by Shri Brajesh Mishra, National Security Adviser at the American Jewish Committee Annual Dinner', Ministry of External Affairs, May 8, 2003, at <https://www.mea.gov.in/Speeches-Statements.htm?dtl/4526/Address+by+Shri+Brajesh+Mishra+National+Security+Advisor+at+the+American+Jewish+Committee+Annual+Dinner> (Accessed September 5, 2021).

¹⁵² See Rajendra Abhyankar, 'The Evolution and Future of India-Israel Relations', Research Paper No. 6, 2012, p. 20, S. Daniel Abraham Centre for International and Regional Studies, at <http://www.tau.ac.il/humanities/abraham/india-israel.pdf> (Accessed December 26, 2015); See also, P.R. Kumaraswamy, 'India and Israel: Emerging Partnership', *Journal of Strategic Studies*, Vol. 25, No, 4, p. 202.

¹⁵³ Monika Chansoria in 'Countering Terrorism through International Cooperation' in Gurmeet Kanwal and N. Manoharan (eds), *India's War on Terror*, Knowledge World, New Delhi, 2010, pp. 189-190.

Deputy Chief of General Staff, Maj. Gen. Moshe Kaplinsky had earlier in June 2007 visited Jammu and Kashmir, during his visit to India.¹⁵⁴

Both countries signed an extradition treaty, during the visit of Foreign Minister S.M. Krishna in January 2012. The Foreign Minister's visit was to commemorate the 20th anniversary of the establishment of diplomatic ties. A homeland security (HLS) cooperation agreement was signed in February 2014, when P. Chidambaram was the Union Home Minister. Institutional interactions between the two countries relating to internal security have grown since then.

The joint steering committee on homeland security held its first meeting in September 2014. Four working groups, on border management, internal security, police modernization, capacity building and cyber-crime were established by this steering committee. Home Minister Rajnath Singh visited Israel in November 2014, when he was given a tour of the border areas with Yossi Cohen, the Israeli National Security Adviser. Since 2015, officer trainees of the National Police Academy, Hyderabad compulsorily visit the Israel National Police Academy for training.

After Singh's visit, Government sources indicated that India intends to get the benefit of Israel's border management expertise, as they are 'expert[s] in stopping infiltration by the use of advanced surveillance systems'. In the wake of the attacks on the Pathankot and Uri army bases in January and September 2016 respectively, analysts called for the Border Security Force (BSF) to use Israeli border guarding methods and solutions to better protect the borders.¹⁵⁵

¹⁵⁴ Cherian Samuel, 'India, Israel and the US Factor', in Eytan Gilboa and Efraim Inbar (eds.), *US-Israeli Relations In A New Era*, Routledge, 2009, p. 199; Rajat Pandit, 'Israeli Army team to visit J&K', *The Times of India*, June 8, 2007, at <https://timesofindia.indiatimes.com/india/Fighting-terror-Israeli-army-team-to-visit-JK/articleshow/2107689.cms> (Accessed September 5, 2021).

¹⁵⁵ Aman Sharma, 'Pathankot attack: Follow Israel's top-notch technology tricks to protect India-Pakistan border', July 10, 2018, at <https://economictimes.indiatimes.com/news/defence/pathankot-attack-follow-israels-top-notch-technology-tricks-to-protect-india-pakistan-border/articleshow/50598420.cms> (Accessed September 5, 2021).

To be sure, India has been using Israeli equipment like the LORROS (Long-range Reconnaissance and Observation System) since at least 2008. Israeli UAVs have also been used extensively in areas like the Rann of Kutch. As noted earlier, senior Israeli officers also visited Kashmir. Maj. Gen. Kaplinsky visited Nagrota in 2007 while Israeli Army Chief Gen. Avi Mizrahi visited Akhnoor in September 2008.¹⁵⁶ The border guarding forces use high-tech surveillance devices, procured from Israel as well as manufactured domestically, to keep vigil on the border.

Minister of State in the Union Home Ministry, Kiren Rijju informed the Rajya Sabha on March 2, 2016 that the Government would employ ‘technological solutions in the form of integration of Radars, Sensors, Cameras, Communication Networks and Command and Control Solution along the Indo-Pakistan and the Indo-Bangladesh Border’.¹⁵⁷ Home Minister Rajnath Singh informed the Lok Sabha in August 2016 that the Government had decided to launch ‘on a pilot basis’ the Comprehensive Integrated Border Management System (CIBMS). The framework will include electro-optic sensors, radars, among other equipment, to complement human patrolling in areas of difficult terrain on the Indo-Pakistan border.¹⁵⁸

Reports in May 2017 noted that India had procured high-technology border-fencing solutions from Israel. The head of the BSF, Director General K.K. Sharma affirmed in July 2018 that the technology and methods being used in the CIBMS were ‘from Israel’ and that the BSF border guarding philosophy would see a change in tactics from

¹⁵⁶ Yaakov Katz, ‘India seeks IDF help in Kashmir conflict’, September 14, 2008, at <https://www.jpost.com/international/india-seeks-idf-help-in-kashmir-conflict> (Accessed September 5, 2021).

¹⁵⁷ ‘Gaps in security framework on international border in Punjab’, Unstarred Question 703, Rajya Sabha, March 2, 2016, at <https://rajyasabha.nic.in/rsnew/Questions/QResult.aspx> (Accessed September 5, 2021).

¹⁵⁸ ‘Border management’, Starred Question 326, Lok Sabha, August 9, 2016, at <http://loksabhaph.nic.in/Questions/QResult15.aspx?qref=39445&lsno=16> (Accessed September 5, 2021).

patrolling to quick reaction teams (QRT) and technological surveillance.¹⁵⁹ While the BSF ran limited pilot projects along the Indo-Pakistan and the Indo-Bangladesh border, it would seem, Israeli-style border solutions – with a heavy emphasis on sensors and high technology monitoring, coupled with minimal human interface, may not be smoothly integrated into the border security mechanisms.

To be sure, such technological solutions are critical in areas where round-the-clock human patrolling may not be feasible due to climatic or terrain conditions. There is also the issue of upkeep and maintenance of technological solutions, as well as proper training in order to deliver optimal results. Border guarding officials also emphasize that a one-size-fits-all approach may not be suitable for the border security requirements of a sub-continental-sized country like India.¹⁶⁰

It is to be emphasized though, that technological solutions are being sought for an insignificant portion of the border. The Indo-Bangladesh border, for instance, is over 4,000 kms long, of which at least 75 per cent is fenced. Even out of the remaining 25 per cent of the border which is not fenced, guarding the border using the sole use of technology will be limited to a miniscule proportion of the border. Minister of State in the Union Home Ministry, Nityanand Rai, informed Parliament in November 2019 that just about 60 km out of the 400 km unfenced India-Bangladesh border ‘will be covered by technological solutions’.¹⁶¹ The unfenced areas are being monitored through human patrolling with the use of sophisticated equipment like hand-held thermal

¹⁵⁹ ‘Israel fence systems, quick response team at Pakistan borders: BSF DG’, Press Trust of India, July 13, 2018, at <https://economictimes.indiatimes.com/news/defence/israel-fence-systems-quick-response-team-at-pakistan-borders-bsf-dg/articleshow/60044263.cms?from=mdr> (Accessed September 5, 2021).

¹⁶⁰ Interactions with officials of the Border Security Force (BSF), at training programmes conducted by MP-IDSA, New Delhi.

¹⁶¹ ‘Border fencing’, Unstarred Question 458, Lok Sabha, November 19, 2019, at <http://loksabhaph.nic.in/Questions/QRResult15.aspx?qref=6699&lsno=17> (Accessed September 5, 2021).

imagers, night vision devices, UAVs and LORROS, among others, some of which are procured from Israel.¹⁶²

IN SUMMARY

Israel has no doubt, built a formidable reputation with its counter-terrorism and border security tactics. The Israeli experience has proved to be successful in mitigating the loss of Israeli lives. Israel follows a range of tactics, including military responses to rocket strikes. The country swears by the importance and efficacy of such tactics. India has indeed benefited from closely reading the Israeli experience as well as trying to emulate its technological solutions, especially with regard to border security.

India's border guarding forces, while acknowledging the importance of learning best practices from around the world, flag the enormous complexities involved in securing thousands of kilometres of the country's borders. It is also acknowledged that the sources of threat are different for both the countries, as indeed the nature of the sanctuary, in the form of safe havens, provided by Pakistan, as against Israel – which largely faces Palestinian terrorism and the Hezbollah, which is a significant domestic political force in Israel's neighbouring country, Lebanon. While Israel accuses Iran of supplying the Hezbollah and Gaza militants with rockets and financial resources to target it, the long-standing and wide-ranging institutional as well as direct support to jihadist elements to wage war against India has been far more insidious.

Israel's long history of use of punitive military strikes to take out enemy capabilities before they can cause damage is another feature closely studied around the world. Israel, in recent times, has launched air strikes in places as far away as Iraq, on the basis of its well-endowed intelligence capabilities that inimical actors supported by countries like Iran were

¹⁶² 'Border fencing', Unstarred Question Number 2308, Lok Sabha, August 3, 2021, at <http://loksabhaph.nic.in/Questions/QResult15.aspx?qref=26717&lsno=17> (Accessed September 5, 2021).

using that territory to process weapons and ammunition targeted against it. In August 2019, for instance, Israel launched air strikes against alleged weapons depots in Iraq, being used by Iran to supply weapons to armed groups like the Hezbollah in Syria. Such strikes have continued regularly. India's Balakot strike, where specialized Israeli weapons systems were used, has led analysts to opine that India too was following Israeli tactics to respond to blatant aggression on its territory by militants supported by Pakistan. India can continue to benefit from the Israeli experience of using active defence measures, punitive strikes, perimeter security solutions, targeted killings, among a range of choices, to ensure the security and well-being of its people.

CONCLUSION

India-Israel relations have traversed a dynamic path in the past three decades and have attained a higher orbit, after the Modi government assumed power. Even as the India-Israel defence partnership is set to grow and solidify in the near future, India's drive towards self-reliance will impact to an extent, the quantum of the relationship. India's defence modernization needs are huge, as well as the need to effectively meet the growing security concerns across the internal and external spectrum. The all-encompassing Pakistan-China defence cooperation, which equips Islamabad with sophisticated equipment and platforms, is too stark to be ignored for India's security planners.

As seen in the above sections, India and Israel have developed an all-round defence and security partnership, with increasing focus on joint development and production. Exports of Israeli equipment like UAVs that are manufactured in India to countries in Southeast Asia is a new arena of defence cooperation, being spearheaded by the private sector companies. Joint ventures in the category of small arms and ammunition have big plans not just to cater to the requirements of the Indian armed forces but also to export markets.

India's defence relationship with Israel is being sought to be leveraged to improve the country's defence exports profile. The country's central public sector enterprises (CPSE) were tasked by Prime Minister Modi in 2018 to ensure that at least 25 per cent of their revenue should be from exports by 2022-23. The electronics major, BEL, for instance, has expressed an interest in having a tie-up with the IAI to boost the DPSUs' exports profile. In 2003, HAL had a tie-up with the IAI to market the Advanced Light Helicopter (ALH). It remains to be seen how the two entities can pursue such cooperation in the current context further. The IAI has a well-established international profile and marketing prowess, an element that Indian DPSUs as well as private sector companies can study and take advantage of.

A critical area of focus has to be the effort to produce cutting-edge equipment, which can also stand the test of quality and reliability. The plethora of steps taken by the MoD in the recent past are expected to make the Indian defence ecosystem more vibrant and dynamic. Such an ecosystem will no doubt, help in realizing the country's indigenization as well as domestic manufacturing and export targets going forward. As noted in Chapter II, a strengthened Indian defence industrial ecosystem, coupled with measures like the Srijan defence indigenization portal, could cumulatively reduce the volume and quantum of defence imports from partners like Israel.

Given the extraordinary range of cooperation in terms of procurement and joint development of equipment ranging from missiles like LRSAM, MRSAM, radars, UAVs, and assault weapons, among others, we may not see drastic reduction in the quantum of India-Israel defence trade, in the immediate to short term. The Israeli defence industry is also well placed – given its long-standing exposure to the Indian market, to take advantage of the Government's various measures to help in domestic manufacturing. These include relaxed norms for foreign direct investment (FDI), in case the foreign OEMs agree to transfer of technology.

Going forward, dependence on external sources for niche equipment like AWACS and UAVs can be expected to lessen, with improvement in India's indigenous capabilities in these areas. India's big indigenization focus in critical areas of aero engines, materials and electronic chip technology is expected to witness higher volumes of procurement from indigenous sources – including niche equipment like AEW&C aircraft, AESA radars, among other equipment. These are the kinds of equipment that India has imported from Israel. Domestic procurement of such equipment, therefore, will result in lesser imports from strategic partners like Israel.

India's defence market, though, is one of the largest in the world and there is space and scope for cooperation with critical strategic partners like Israel to continue to grow to fulfill the varied requirements of the Indian armed forces. India expects to spend significantly on defence

modernization in the near future. Strategic partners like Israel, while continuing to occupy an important place in fulfilling the modernization and upgradation requirements of India's armed forces, will be expected to continue to work more closely with domestic defence industry, to fulfill the critical requirements of India's armed forces.

*Appendix***Table 1: India-Israel Memorandum of Understandings
(2014-2022)**

Subject	Ministries/Institutions Involved	When signed
Economic	Double taxation avoidance agreement	October 2015
	Memorandum of Intent between Invest India and Invest in Israel	January 2018
Culture	Cultural exchange programme, for years 2015-18	October 2015
Education	JNU-BGU	October 2015
	Hebrew University and IIT (Kharagpur)	October 2015
	IIT (Kharagpur) and Ben Gurion University	October 2015
	JNU and Hebrew University	October 2015
	IIT (Kharagpur) and University of Haifa	October 2015
	University of Delhi and Ben Gurion University	October 2015
	Hebrew University and University of Delhi	October 2015
	University of Delhi and IDC, Herzliya	October 2015
Science and Technology	India-Israel Industrial R&D and Technological Innovation Fund (I4F)	July 2017
	Letter of Intent between Indian Oil Cooperation Limited (IOCL) and Phinergy Ltd. for cooperation in the area of metal-air batteries	January 2018
	Letter of Intent between IOCL and Yeda Research and Development Co Ltd for cooperation in the area of concentrated solar thermal technologies	January 2018

Subject	Ministries/Institutions Involved	When signed
Bilateral Framework	Strategic Partnership; Strategic Partnership in Water and Agriculture	July 2017
Water	National Campaign for Water Conservation in India	July 2017
	State Water Utility Reform in India, Uttar Pradesh	July 2017
Agriculture	Declaration Of Intent Between The Ministry Of Agriculture And Rural Development Of The State Of Israel And The Ministry Of Agriculture Of The Republic Of India	November 2016
	Three Year Work Program in Agriculture 2018-2020	July 2017
Space	Plan of Cooperation Between ISRO and the ISA regarding cooperation in Atomic Clocks	July 2017
	MoU between the ISRO and ISA regarding cooperation in GEO-LEO Optical Link	July 2017
	MoU between ISRO and ISA regarding cooperation in Electric Propulsion for Small Satellites	July 2017
	MoU between Indian Institute of Space Science and Technology (IIST) and the Technion-Israel Institute of Technology	January 2018
	Plan of Cooperation between ISRO and ISA regarding cooperation in Electric Propulsion for Small Satellites	April 2020
Cyber security	To develop, promote and expand cooperation in the field of HRD through training programmes, skill development, and simulator based hands-on training.	January 2018
	MoU between the computer emergency response team (CERT) of India and Israel	July 2020

Subject	Ministries/Institutions Involved	When signed
Oil and Gas sector	MoU between Indian Ministry of Petroleum and Natural Gas and Israeli Ministry of Energy	January 2018
Air transport	Protocol on Amendments to the Air Transport Agreement (on issues like code sharing etc)	January 2018
Film production	Agreement on Film-co-production, to further develop cultural ties	January 2018
Homeopathic Medicine	MoU between the Central Council for Research in Homeopathy, Ministry of AYUSH and the Centre for Integrative Complementary Medicine, Shaare Zedek Medical Center	January 2018
Defence	Bilateral innovation agreement between DRDO and Israel's Directorate of Defence Research and Development (DDR&D)	2021

Source: Ministry of External Affairs, www.mea.gov.in (Accessed January 30, 2022)

Table 2: India-Israel Defence Procurement Deals (2014-2022)

Equipment	Signed/Procured/ Delivered/Deployed
Barak-I missiles	2014
SPICE smart bombs	2015
Tadiran combat radios	2016
Barak-I missiles	2017
Spyder Low Level Quick Reaction Missile (LLQRM) system	2017
Heron TP UAVs	2018
Spike ATGMs	2019
SPICE smart bombs	
Negev NG-7 LMG	2020
Spike ATGMs	
SPICE smart bombs	
Sky Striker drones	2021
Heron Medium Altitude Long Endurance (MALE) UAVs	
Masada pistols	

Source: Press Information Bureau, www.pib.nic.in; Media reports

Table 3: India-Israel Joint Development Programmes (Missiles)

Weapons System	MoU signed	Weapon Inducted	Partners
IRSAM (Navy)	2006	Feb 2021	Bharat Electronics Limited (BEL); Israel Aerospace Industries (IAI); DRDO; Rafael; Larsen and Toubro
MRSAM (Air Force)	2009	Sept 2021	
MRSAM (Army)	2017	Successful maiden launch conducted in December 2020	

Source: Annual Reports, Ministry of Defence, www.mod.nic.in (Accessed January 30, 2022)

Table 4: India-Israel Defence Joint Ventures

Indian partner	Israeli partner	Contracts executed/ Being Executed/ JVs formed to Explore Opportunities
HAL	IAI	Boeing passenger jets to conversion to cargo aircraft
		Gulf Stream G-50 Fuselage
		Boeing main deck cargo doors
HAL	Elbit Systems-ISTAR Division	VTOL UAVs
HAL	Elbit Systems	Digital head up displays
HAL, Dynamatic Technologies	IAI	UAVs
Tatas	Elta Systems Limited	EW; Homeland security
Adani Defence and Aerospace; Alpha Design Technologies Pvt Ltd.,	Elbit Systems	UAVs
Kalyani Group, Larsen and Toubro (along with Bharat Dynamics Limited and Bharat Electronics Limited)	Rafael Advanced Systems	MRSAM missile kits
PLR Systems (Adani Grp has a stake)	Israel Weapons Industries (IWI)	Small arms and ammunition
HBL Power Systems	Elta Systems	Radar technology
Tatas	Israel Aerospace Industries (IAI)	Radar applications
Alpha Design	Elbit Security Systems	Sky Striker UAVs Mi-17 helicopter upgrades
Wipro	Israel Aerospace Industries	Composite aero structures

Indian partner	Israeli partner	Contracts executed/ Being Executed/ JVs formed to Explore Opportunities
Mahindra Aerostructure	Elbit Systems-Cyclone	Aerostructures
Dynamic Technologies Private Limited and Elcom	Israel Aerospace Industries (IAI)	UAVs
Kalyani Strategic Systems Limited	Israel Aerospace Industries (IAI)	Air defence systems, radars, among other opportunities
Mahindra Telephonics	Shachaf Engineering	Strategic Electronics
Bharat Forge	Elbit Systems	Artillery systems

Source: Media reports, Company statements.

Table 5: Port Visits of Indian Naval Ships to Haifa

INS Mysore	Guided missile destroyer	2004
INS Godavari	Guided missile frigate	
INS Ganga	Guided missile frigate	
INS Shakti	Fleet tanker	
INS Mumbai	Guided missile destroye	June 2006
INS Brahmaputra	Guided missile frigate	
INS Mumbai	Guided missile destroyer	August 2012
INS Trishul	Stealth missile frigate	
INS Gomti	Guided missile frigate	
INS Aditya	Tanker	
INS Trikhand	Frigate	August 2015
INS Mumbai	Guided missile Destroyer	May 2017
INS Trishul	Stealth missile frigate	
INS Aditya	Tanker	
INS Tarangini	Sail training ship	September 2018

Source: Ministry of Defence, Annual Reports, www.mod.nic.in; Ministry of External Affairs, Annual Reports, www.mea.gov.in, Media reports, Press Information Bureau, www.pib.nic.in (Accessed January 25, 2022)

Table 6: Key Institutional Interactions (2014-2022)

Area	Framework/Participants	When
Coastal Security	Indian Coast Guard and Israeli Navy	July 2018
Homeland/ Internal/ Border Security	1st Joint Steering Committee meeting between India and Israel on HLS cooperation	September 2014
	2nd Joint Steering Committee meeting between India and Israel on HLS cooperation	February 2018
	4th meeting of JWG on border management	November 2018
	3rd Joint Steering Committee meeting between India and Israel on HLS cooperation	January 2020
	14th JWG meeting on counter-terrorism	February 2020
Defence	11th JWG on defence	June 2014
	14th JWG on defence	July 2018
	15th JWG on defence	October 2021
	Staff Talks (Army, Navy, Airforce)	Annual
Foreign Ministry	Foreign Office consultations	Annual

Source: Ministry of Defence, Annual Reports, www.mod.nic.in; Ministry of External Affairs, Annual Reports, www.mea.gov.in; Ministry of Home Affairs, Annual Reports, www.mha.gov.in; Media reports, Press Information Bureau, www.pib.nic.in (Accessed January 25, 2022)

Table 7: Visits of Service Chiefs (2014-2022)

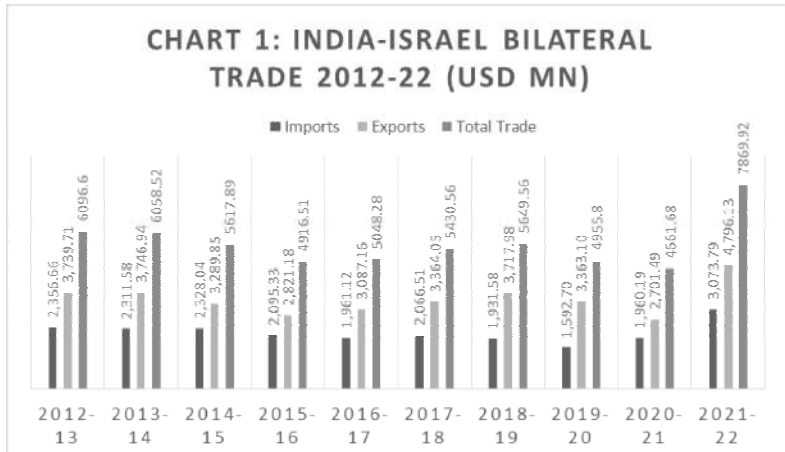
		Army	Navy	Air Force
India	2014	Gen. Bikram Singh		
	2016			Air Chief Marshal Arup Raha
	2017		Adm. Sunil Lanba	
	2018			Air Chief Marshal Birender Singh Dhanoa
	2021	Gen. M.M. Naravane		Air Chief Marshal R.S. Bhadauria
Israel	2015		Adm. Ram Rutberg	Maj.Gen. Amir Eshel, Commander of Israeli Air and Space Forces
	2017	Maj.Gen. Herzi Halevi, Chief of Defence Intelligence and Chief of Ground Forces, Maj.Gen. Kobi Barak		
	2019			Maj.Gen. Amikam Norkin, Commander of Israel Air Force (March 2019)
				Maj.Gen. Amikam Norkin, Commander of Israel Air Force (August 2019)

Source: Media reports; Ministry of Defence, www.mod.nic.in; Ministry of External Affairs, Annual Reports, www.mea.gov.in (Accessed January 25, 2022).

Table 8: High-Level Visits (2014-22)

Year	India	Israel
2014	Rajnath Singh, Union Minister for Home Affairs	
2015	Devendra Fadnavis, Maharashtra Chief Minister	Agriculture Minister Yair Shamir
	President Pranab Mukherjee to Israel and Palestine	Defence Minister Moshe Yaa'lon
2016	External Affairs Minister Sushma Swaraj	Agriculture Minister Uri Ariel
	Radha Mohan Singh, Union Minister for Agriculture	President Reuven Rivlin
	Prakash Javadekar, Union Minister for Human Resources Development	Space, Science and Technology Minister Ofir Akunis
2017	First All-Party Parliamentary Delegation Prime Minister Narendra Modi	Agriculture Minister Uri Ariel
2018	Manohar Lal Khattar, Chief Minister of Haryana Subodh Uniyal, Utrakhhand Agriculture Minister Pandurang Fundkar, Maharashtra Agriculture Minister Purushotam Rupala, Minister of State for Agriculture Vijay Rupani, Gujarat Chief Minister Amarinder Singh, Punjab Chief Minister	Prime Minister Benjamin Netanyahu
2019	Gajendra Singh Shekhawat, Union Minister for Jal Shakti	
2020		
2021	External Affairs Minister S. Jaishankar Prime Minister Modi met Israeli Prime Minister Naftali Bennet, Glasgow (Sidelines of COP 22 climate summit)	
2022	Narendra Singh Tomar, Minister of Agriculture and Farmer's Welfare	Defense Minister Benny Gantz

Source: Media reports; Ministry of Defence, www.mod.nic.in; Ministry of External Affairs, Annual Reports, www.mea.gov.in (Accessed May 15, 2022)



Defence and security cooperation have been the mainstays of the India-Israel strategic engagement. The Monograph places in perspective these aspects of the relationship, three decades into the establishment of full diplomatic ties. The study notes that India is taking a series of measures to enhance domestic procurement and defence indigenization. These measures aim to cumulatively reduce the volume and quantum of the country's defence imports. Strategic partners like Israel will be expected to continue to work more closely with the domestic defence industry to fulfill the critical requirements of India's armed forces.



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