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MILITARY-TECHNICAL COOPERATION OF INDIA WITH USA, ISRAEL AND EU COUNTRIES IN THE CONTEXT OF “MAKE IN INDIA” PROGRAM

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Abstract. The article analyzes the key trends in India’s military-technical cooperation with Western countries and Israel in the last decade, including the increased diversification of defense procurement due to the growing number of contracts with these countries and the shift in emphasis of the Indian acquisition strategy from obtaining of weapon platforms to the procurement of components and development of the national defense industry. The primary focus of the paper are the key features of India’s military-technical cooperation with the USA, Israel and France as the main (besides Russia) suppliers of weapons and military equipment in 2014–2023, as well as its major contracts and joint projects with leading defense companies of these countries – Dassault Aviation, Lockheed Martin, Boeing, General Electric, Israel Aircraft Industries, Rafael and several other. Regulatory measures in the defense and aerospace complex that have been introduced as part of “Make in India” program since 2014, including the revision of the offset contracts rules, liberalization of procurement procedures and efforts towards “ease of doing business” for foreign and domestic private defense companies, are assessed as generally successful (in terms of stimulating the development of national industry and the implementation of national defense programs). It is concluded that these measures contributed to both the growth in the number of India’s offset and licensing contracts, joint defense projects with Israel and Western countries in the last decade, and the intensification of its national defense industry development through inclusion in Western supply chains of weapons and components. At the same time, it is indicated that the strengthening of military-technical cooperation between New Delhi and the West will have its limits, associated primarily with the specifics of the transfer of Western technologies, in particular, production ones, trends in equipping combat platforms produced in India with foreign components, and with the peculiarities of integration of the country into Western supply chains of weapons and subsystems. Budgetary restrictions may also arise due to increased costs for the purchase of Western, Israeli and national weapons systems as well as their maintenance.

Keywords: military-technical cooperation, India, USA, Israel, EU countries, “Make in India” program, defense industry, offset contracts, licensed production, arms procurement.

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ВОЕННО-ТЕХНИЧЕСКОЕ СОТРУДНИЧЕСТВО ИНДИИ С США, ИЗРАИЛЕМ И СТРАНАМИ ЕС В КОНТЕКСТЕ ПРОГРАММЫ “MAKE IN INDIA”

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Аннотация. В статье рассмотрены тенденции развития в 2014–2023 гг. военно-технического сотрудничества Индии с ключевыми западными странами-партнерами – США, Францией, другими странами ЕС, а также с Израилем. На кейсах оборонных контрактов обоснованы выводы о том, что меры регулирования в оборонном секторе, заложенные программой “Make in India” (“Делай в Индии”), способствовали росту числа реализующихся лицензионных контрактов и совместных проектов в оборонной сфере между Индией и ее ведущими странами-партнерами, а также ак-

тивизации развития индийского оборонного комплекса за счет включения в западные цепочки поставок вооружений и компонентов.

Ключевые слова: военно-техническое сотрудничество, Индия, США, Израиль, страны ЕС, программа “Make in India”, оборонная промышленность, офсетные контракты, лицензионное производство, закупки вооружений.

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INTRODUCTION

India in the past decade has continued to be one of the world’s largest buyers of arms and military equipment (AME), along with countries such as Saudi Arabia, Egypt, China, the UAE, Qatar and Turkey. In 2014–2023 the country ranked second in the world in arms purchases in value terms, and its share in world imports of military-technical equipment was 9.4 %, while the leader in purchases, Saudi Arabia, had 9.8 %¹.

The relatively high volume of arms imports by India in recent decades was due to the fact that, despite the country’s fairly developed military-industrial complex (MIC) [1, p. 2], capable of producing modern combat aircraft, helicopters, armored vehicles, and some third- and fourth-generation warships, it does not provide the country’s armed forces with all the necessary weaponry and equipment. In historical and institutional terms, experts attribute this to organizational and technological miscalculations, as well as delays in implementing national weapons development programs that began in the 1970s and 1980s [1, 2]. Notable examples are the Indian *Tejas* fighter, whose development began in the 1980s but did not enter serial production until 2013, and the *Arjun* main battle tank, which only entered service with Indian army (with 248 units) more than 30 years after the development program was launched. Overall, India remains unable to independently produce the entire spectrum of the main types of modern conventional weapons, particularly high-tech components and systems for equipping them: aircraft and ship engines, radar stations, air defense and missile defense systems, some communication and control systems, and various missiles for aircraft and naval platforms. As a result,

¹ Volume of Imports of Major Arms by All Recipients 2014–2023. *SIPRI Arms Transfers Database*. 16.06.2024.

the country continues to rely heavily on imports to acquire many of these weapons and their high-tech components.

India’s most significant partner in military-technical cooperation over the past several decades has been the Russian Federation. Together, they have implemented major arms procurement projects, including the acquisition of over 200 *Su-30MKI* fighters, nearly 100 *MiG-29s*, hundreds of *AL-31* engines for the *Su-30*, approximately 1,000 *T-90S* tanks, and several *Talwar* frigates, with licensed production taking place in India. Other key purchases include the *S-300* and *S-400* air defense systems and the joint development and production of *BrahMos* land-, air-, and sea-based missiles, and many others. In the last five years alone, Russia has supplied India with weapons worth USD 13 billion [source 1], and in total over the last two decades, this amount has been several times higher.

At the same time, in the last decade, **the diversification of India’s arms purchases also significantly increased**, primarily due to the strengthening of military-technical cooperation with Western countries – the USA, France, the UK, and Germany, as well as Israel. This diversification, which in some cases was accompanied by the agreements with these countries on licensed production and technology exchange, can be designated as one of the most important features of the development of the Indian military-technical cooperation system at present. In 2014–2023, France’s share in the AME purchased by India was about 20 %, Israel and the USA – 12 % and 13 %, the UK – about 3 %, Germany – 1.5 %, and other EU countries – about 2–3 %. At the same time, the total share of AME imports from the five aforementioned largest Western arms suppliers in 2019–2023 increased from 39 to 59 % compared to the previous five-year

Table 1. Volumes of AME imports by India by country (2014–2023)

Supplies from countries (million TIV SIPRI units)	2014–2018	% of all supplies, 2014–2018	2019–2023	% of all supplies, 2019–2023	2014–2023	% of all supplies, 2014–2023
Russia	7586	57.73	5014	36.45	12600	46.85
France	895	6.81	4476	32.54	5371	19.97
USA	1709	13.00	1782	12.96	3491	12.98
Israel	1945	14.80	1275	9.27	3219	11.97
UK	436	3.31	299	2.17	735	2.73
Germany	152	1.16	235	1.71	387	1.44
Other	417	3.19	673	4.90	1091	4.06
Total AME imports	13 140	100	13 754	100	26 894	100

Note. Data are given in millions of units of the SIPRI trend indicator (TIV – *trend indicator value*).

Compiled by the author based on the *SIPRI Arms Transfers Database* (23.06.2024).

period, while the share of AME supplies from Russia, on the contrary, decreased in approximately the same proportion (from 58 % in 2014–2018 to 37 % in 2019–2023) (Table 1).

Another key feature of India’s military-technical cooperation in the last decade has been the shift in emphasis in military procurement from the predominant import of key weapons systems and military equipment, including components, to **support the development of the national defense sector**. This was primarily facilitated by the implementation of the “*Make in India*” policy initiated by Narendra Modi in 2014 in the defense and aerospace sectors and the “*Atmanirbhar Bharat*” (“Self-Reliant India”) course, aimed at increasing the country’s self-sufficiency in the products of national industries and, in general, India’s role in the global economy. The “*Make in India*” policy, the main objectives of which are to boost the volume of foreign direct investment, stimulate innovation, and increase the share of the manufacturing sector in 25 sectors of the national economy (from 16 % in 2014 to 25 % of GDP by 2025) [3], in the defense and aerospace sphere, was aimed at: increasing the number of joint projects with foreign partners for the procurement/production of weapons and their components, including projects with technology transfer; increasing the share of localization of military equipment production; increasing the number of joint ventures with the participation of Indian and foreign defense industry companies. It was also designed to im-

prove the efficiency of implementing contracts concluded with India for the licensed production of military equipment and offset (compensatory) contracts² for the purchase of AME.

The purpose of this paper is to examine the key aspects of the development of India’s military-technical cooperation with Western countries and Israel over the past decade, including through the prism of the growing importance of licensing and offset contracts in procurement and the specifics of regulatory measures introduced in the country’s defense sector within the framework of “*Make in India*”. First of all, the current state and opportunities of India’s cooperation in the military-technical field with three key arms suppliers – France, the United States, and Israel – are analyzed.

Research on India’s military-technical cooperation with individual Western countries and Israel is presented in the works by Bitzinger, Brown, Borisov, Kashin, Maryasis and Fedorchenko, Chikhachev, and a number of other authors [1, 4, 5, 6, 7, 8]. A detailed and systematized analysis of various aspects of the country’s military-technical cooperation up to 2016 is given in the mono-

² Offset contracts are agreements that provide for financial and/or industrial-technological concessions received from the seller countries or companies by the buyer countries or companies as conditions for the purchase of equipment or machinery. Offset agreements often include investments by the seller in the construction or modernization of enterprises in the buyer country.

graph by the Center for Analysis of Strategies and Technologies “Defense Industry and Military-Technical Cooperation of India with Foreign States” [2], and an analysis of the problems and prospects for the development of its military cooperation in the context of the Indo-Pacific Region concept is given in the studies by Garusova, Kupriyanov [9, 10], and other Russian and foreign scholars. A wider range of issues related to India’s economic and technological interaction with its main economic partners within the framework of the Indo-Pacific region are reflected in the works by Danilin, Lunev and Shavlai, Liu and Jamali, Mikaelyan and Morozov, Mishra, and other authors [11, 12, 13, 14, 15]. The topic of the development of the Indian defense sector, the implementation of offset and licensing contracts, and the influence of the “*Make in India*” policy on the national military-technical cooperation is covered mainly in the publications by Indian and Western researchers, including Baskaran, Bitzinger, Patel, Patil, Viswanathan, and others [1, 16, 17, 18, 19, source 2]. In the author’s opinion, these problems have not been analyzed in sufficient detail in Russian studies to date.

GENERAL TRENDS IN INDIA’S MILITARY-TECHNICAL COOPERATION WITH WESTERN COUNTRIES IN 2014–2023

Before moving on to examining the specifics of India’s military-technical cooperation with Western countries and Israel, one may outline a number of key elements in the development of this cooperation over the last decade.

First of all, it should be noted that the period since 2014 has been one of the most active in the history of the country’s defense policy in terms of reforming the defense sector. It was during this period that, at the initiative of the Government and the Ministry of Defense of India, documents were adopted that played a significant role given the implementation of the “*Make in India*” course, such as the *Strategy on Defense Exports 2015*, new documents on simplifying the procedure and setting the priorities in defense procurement (*Defense Procurement Procedure 2016* and *Defense Acquisition Procedure 2020*) and on the policy in the field

of defense offsets (*Defense Offset Policy 2016*). In addition, reforms were carried out in the defense sector within the framework of the *Ease of Doing Business Reforms* approach, creating more favorable conditions for investment by foreign companies in the defense sector, and “industrial corridors” began to be created in the field of defense production and innovation (in the states of Tamil Nadu and Uttar Pradesh) [15, 20, source 3].

The rules for the implementation of offset contracts in India have changed several times since the introduction of the offset policy several decades ago, while the requirement for mandatory compensation in the amount of at least 30 % of the purchased equipment has remained unchanged since 2006. These compensations were mainly aimed at projects for the production of military and civilian equipment or their components in India, or for the transfer of technology to the Indian party, including through the *Indian Defense Research and Development Organization (DRDO)*. While maintaining the provision on 30 % offsets, in 2012 the forms of implementation of offset obligations were significantly expanded [source 2], and since 2016, the threshold for their introduction has been lowered: if previously they were introduced for all contracts worth more than USD 46 million, now they are introduced for contracts worth more than USD 305 million [21]. Thus, this area has become less regulated. On the other hand, since the second half of the 2010s, it has become quite common practice to conclude large contracts for the purchase of AME with Western countries in the format of intergovernmental agreements (IGAs) with special conditions rather than offsets. Offset obligations under such contracts, which are mainly related to the acquisition of military equipment for which there is an “urgent operational need” for the Indian Army, could be introduced (as in the case of the 50 % offset under the 2015 IGA on the purchase of 26 *Rafale* fighters) or not: since 2020, the rules of the offset policy have ceased to apply to IGAs [21].

Separately, it is necessary to mention the introduction of a set of measures to support small and medium-sized enterprises in the defense sector of India (that is, in fact, companies that supply materials and components), the creation of associations

for startups, and the strengthening of measures to support startups [18, source 3], and the emergence of other initiatives that contribute to the formation of a more optimal environment for work in the Indian defense sector for both foreign and Indian (primarily private³) companies and holdings.

The above measures to optimize and liberalize the defense trade regime and create a favorable defense sector ecosystem were important for India primarily from the point of view of more active involvement of Western companies with their investments and technological capabilities in the country. This was also facilitated by the liberalization of offset policy requirements: contracts for purchases with small and medium-sized foreign companies, including the activities of relevant joint ventures, were no longer subject to offset obligations.

MILITARY-TECHNICAL COOPERATION WITH FRANCE

France has consistently been among the top three suppliers of military products to India over the past decades, and in 2014–2023, it ranked second in arms sales to this country after Russia (see Table 1). The specifics of India's military-technical cooperation with France in the last decade consisted, first, of a relatively small number of agreements concluded and a not very extensive range of purchased products, but with a high cost of key contracts for the purchase of combat platforms. Agreements for the production of French military equipment in India under license with the corresponding transfer of technology were also quite common, and, as a rule, these were large contracts [2, 16]. Another key point is that, due to the rather long service life of French military equipment in the Indian Armed Forces, a significant share of the exports of corresponding French military equipment was made up of contracts for the supply of spare parts, repair, and modernization of this equipment.

Since 2005, France has succeeded in initiating the implementation of three large joint me-

³ India "opened up" its defense and aerospace sectors to private and foreign investment in 2001 by passing regulations allowing 100% domestic private defense companies and 26% foreign direct investment in defense manufacturing projects [source 2].

ga-projects in the military-technical cooperation sphere with India. The first was the 2005 contract with the French corporation DCNS (currently *Naval Group*) for the licensed construction of six diesel-electric submarines of the *Scorpene* project (Indian designation – *Kalvari*) with an initial cost of EUR 2.7 billion. The submarines were built at the Indian enterprise *Mazagon Dock Limited* in Mumbai with the corresponding transfer of French technologies and a number of components. To equip them, India ordered dozens of *MBDA SM39 Exocet Block2* anti-ship missiles. Despite a number of difficulties with the implementation of the contract – an increase in its initial cost, additional supplies of components of USD 0.5 billion worth, delays in construction, and obstacles in obtaining a number of technologies from the *Naval Group* – five diesel-electric submarines have already been delivered to the Indian Navy under it, and the last submarine is being completed in Mumbai.

The second project was associated with the modernization of 51 Indian *Mirage-2000H* fighters to the *Mirage-2000-5* standard. The 2011 contract was USD 2.3 billion worth and included upgrading the fighters, which remain the Indian Air Force's *de facto* sole nuclear-capable aircraft, with improved avionics, onboard computers, electronic warfare suites, and advanced long-range air-to-air missiles. The contractor was a consortium of French companies *Thales*, *Dassault*, and *MBDA*, and the upgrades are being carried out at *HAL*'s Bangalore facility. In addition, another agreement worth about USD 1 billion was signed for India to purchase 493 *MICA* medium-range guided missiles for the fighters. By 2021, 25 upgraded *Mirage 2000-5* had been delivered to the Indian Air Force, slightly behind schedule.

The third largest project was the 2016 contract for the purchase of 36 French *Rafale* fighters made in France, which was the result of a revision of the tender won by *Dassault Aviation* in 2012 for the supply of 126 multi-role combat aircraft to India. The issue of *Rafale* supplies almost became a stumbling block in Indo-French defense cooperation, since the subsequent negotiation process for the licensed production of 126 fighters in India ultimately led to *Dassault Aviation* refusing to provide quality guarantees for the *Rafale* aircraft,

which were to be manufactured at the Indian facilities of the *HAL* corporation. In 2015, the negotiations on the agreement finally reached a deadlock, and instead, in 2016, an IGA was concluded with France (*Dassault*) for EUR 7.87 billion for the supply of 36 *Rafale* fighters, entirely manufactured at French defense enterprises. It included the necessary provisions to meet the requirements of the “*Make in India*” program: offset obligations requiring the companies participating in the agreement (*Dassault*, *Thales*, *Safran*, and *MBDA*) to invest 50% of the contract value back in India in order to support Indian defense equipment manufacturers, a clause on the transfer of certain technologies to DRDO, etc.

The result was the successful transfer of 36 *Rafale* fighters by *Dassault* to the Indian Air Force in 2019–2022. At the same time, *Dassault Aviation* reported on the construction of its new large manufacturing facility and the work of a joint venture with *Reliance Defence* in Nagpur, India, which has been supplying cockpit front sections and other components for *Falcon 2000* business jets since 2020. In the future, a transition to full production of these machines in India is expected [source 4]. In total, according to *Dassault*, the supply chain of the French aircraft manufacturing sector in this country includes 25 production sites and 20 joint ventures for the design, production, and maintenance of aircraft.

In addition to the above, the agreements between France and India on licensed production implemented in the last decade included contracts for engines for 16 Indian frigates of the *28 Kamorta* project, licensed production of light helicopters *SA-315B Lama (Cheetal)*, as well as turboshaft engines for a number of helicopters.

Since the beginning of the presidency of Macron in 2017, France, as noted by a number of researchers, has begun to pursue a more ambitious policy in the field of arms exports than under Hollande [8]. This was expressed, among other things, in the conclusion of a number of new agreements with India in the field of defense procurement or the continuation (extension) of previous deliveries of AME. These include the contracts of 2017–2018 on the purchase of 18 *SA-315* and *SA-316 Alouette* light helicopters, the delivery of

350 *MICA* air-to-air missiles and 200 *SCALP-EG/Storm Shadow* air-to-ground missiles for *Rafale* fighters, the acquisition of *Mistral* missiles for Indian *Prachand* and *Rudra* helicopters in 2020, and a 2021 order for 300 *Safran's AASM Hammer* air-to-ground missiles. In 2021, another contract was signed with French manufacturers for the supply of more than 20 second-hand *Mirage-2000* fighters (necessary as donors of spare parts and units), and a new contract for the purchase of another 26 *Rafale* fighters has been under discussion since 2023.

MILITARY-TECHNICAL COOPERATION WITH THE USA

The development of military-technical cooperation between India and the USA over the past 10–15 years can be described as the most intense and successful stage in the history of their military-technological interaction. Before this period, relations between the two countries in the military-technical sphere were complicated under the influence of various factors, including US sanctions on the supply of arms and dual-use goods, introduced after the Indian nuclear tests of 1998 [14], as well as the underdevelopment (up until the mid-2010s) of a financial and legal framework for promoting of such cooperation.

Since the adoption of the ten-year “*New Framework for the US-India Defense Relationship*” (*NFDR*) in 2005, Indian-American relations in the area of defense cooperation and arms procurement have strengthened significantly. At the same time, India has increasingly become a country through interaction with which in various areas of the economy the US has sought to balance China’s military and economic growth. Since the late 2010s, India has been viewed by the US as a military-political ally and a central link in its Indo-Pacific strategy [9, 10]. Around the same period, a formation of a solid regulatory framework for the development of joint procurement and other projects in the defense sector, as well as interaction between the armed forces of the two countries, was completed. It was based on the *NFDR*, updated in 2015 for another 10 years, and the *Defense Technology and Trade Initiative (DTTI)*, adopted in 2012. Within the framework

of the latter, by 2015 a list of initial joint Indo-American projects was formed that were planned to be implemented, including the production of mini unmanned aerial vehicles (mini-UAVs) *RQ-11 Raven* and equipment for *C-130J Super Hercules* aircraft. In 2016, the United States awarded India the special status of “major defense partner”, and in 2018, added it to the list of its partner countries for trade of strategic goods, which opened up the opportunity for New Delhi to purchase an expanded range of high-tech products from American supplier companies [5].

In 2008–2016, India’s purchases of American weapons amounted to an impressive sum of USD 14 billion. Of this, more than USD 7.8 billion were agreements concluded within the framework of US *Foreign Military Sales (FMS)* [2, p. 124; 9, p. 88]. Back in 2002, the two countries signed the first major defense contract after the lifting of sanctions for the purchase of 12 American *Firefinder* artillery position detection radars USD 200 million worth; in 2006, a used landing helicopter dock *LPD 14 Trenton* was transferred to India, for which six *UH-3H Sea King* transport helicopters were purchased from the United States. In 2008, India purchased six *Lockheed Martin C-130J-30 Hercules* military transport aircraft through the *FMS* (and purchased six more such aircraft in 2013); in 2011, the same procurement mechanism was used to purchase eight *Boeing P-81 Poseidon* patrol aircraft; in 2016, an additional four *P-81s* were purchased for the Indian Air Force, with plans to buy six more such aircraft after 2022. Problems with creating an indigenous *Kaveri* turbojet engine for the national *Tejas* fighter led to the decision to purchase more than 40 American *F404-GE-IN20* engines for these aircraft (assembled in India), but later more powerful *F414-GE-INS6* engines began to be purchased for the *Tejas* [2, pp. 118-122]. According to the agreement with *General Electric*, concluded in 2013, 81 *F414* engines out of 99 purchased were to be manufactured at Indian enterprises. However, the final transfer of *F414* technology from *General Electric* to the Indian party was only confirmed in 2023, and at that time a decision was made to create a corresponding joint venture for their production [source 5]. Since 2004, India has also purchased *LM2500* engines from *General Electric* for a number of new ships,

including the *17A Nilgiri* project frigates and the recently completed first Indian-built aircraft carrier, *Vikrant*. The *LM2500* was assembled from supplied kits by a division of the *HAL* corporation in Bangalore.

In parallel, in 2011, India acquired 10 *Boeing C-17A Globemaster* heavy military transport aircraft from the US for USD 4.1 billion under the *FMS* program (deliveries were completed by 2014). In 2012, *Boeing* won tenders from the Indian Ministry of Defense for the supply of *AH-64E Apache* attack helicopters and *CH-47F Chinook* heavy military transport helicopters. The agreements for the purchase of 22 *AH-64E Apache* and 15 *CH-47F Chinook* USD 3 billion worth were concluded in September 2015. Deliveries under these contracts were completed in 2020, and new Indian orders for 24 *MH-60R* anti-submarine helicopters and 6 new *Apache* helicopters were received in the same year. An additional 124 *F404* aircraft engines were purchased from *General Electric* (in 2016 and 2021), and an agreement on licensed production with technology transfer for the *F414* is almost complete. Among the most recent significant events, it is worth mentioning the ongoing negotiations since early 2024 on the purchase of 31 *MQ-9B* high-altitude UAVs from the American *General Atomics* for the Indian Armed Forces.

For most of the above contracts with American companies, the Indian government has entered into offset agreements, in particular with *Boeing* – USD 1 billion and USD 641 million worth for contracts to purchase *C-17A* aircraft and *P-81* aircraft, with *Lockheed Martin* – about USD 400 million worth for two contracts to purchase *C-130J-30* and another offset for *MH-60R* helicopters, as well as a number of others. Joint ventures have been established with some US companies, where agreements are being implemented to produce subsystems and components at Indian facilities. Thus, the joint American-Indian venture *Tata Lockheed Martin Aerostructures Limited (TLMAL)* has been producing fuselage components for *C-130J Super Hercules* aircraft since 2011, and a *Tata Group* division, *Tata Advanced Systems Limited (TASL)*, has an agreement with *Sikorsky Aircraft* to produce cockpits for *Sikorsky* helicopters [2, pp. 74-75].

MILITARY-TECHNICAL COOPERATION WITH ISRAEL, THE UK, AND GERMANY

India's military-technical cooperation with Israel has its own specifics, which mainly consist of the fact that the main role in Israeli deliveries is played not by combat systems, but by **electronic components and "fillings" for the largest Indian combat platforms**, produced both by foreign suppliers and by the Indian defense sector. According to the *Stockholm International Peace Research Institute (SIPRI)*, India has purchased more than 135 different airborne radars from Israel, including *EL/M-2032* and *EL/M-2052* fire control radars for the *Tejas*, *Jaguar*, and other aircraft, as well as about 30 *EL/M-2221* and *EL/M-2248* naval radars for destroyers and frigates.

Currently, Israel ranks fourth after the United States in Indian military imports and is implementing several dozen programs in India to supply particular types of military equipment, subsystems, and components. The volume of military export from Israel to India is estimated at no less than USD 1 billion per year. The main suppliers of AME from the Israeli side are *Israel Aircraft Industries*, *Rafael Advanced Defense Systems*, and *Elbit Systems*, whose approach to supplies is characterized by a flexible response to customer requirements and a willingness to cooperate on a wide range of modern combat systems. The only limitation on strengthening such cooperation may actually be the position of the United States, which is quite jealous of the exports of Israeli high-tech systems, since many of them integrate well with American weapons and communication and control systems [6, p. 35].

The largest contracts of the last decade and a half for the supply of Israeli weapons to India, in addition to those listed above, are contracts for the purchase of *Green Pine* radars, which are part of the *Arrow-2* air defense missile system, *Phalcon AWACS* long-range electronic reconnaissance radars, *Spyder* and *Barak-8 (Barak-MX)* air defense missile systems. In addition, medium-sized *Hunter* and *Searcher* UAVs, heavy *Hermes*, *Heron* and *Heron-2* UAVs, *SkyStriker* loitering munitions, *Spice* guided bombs, and *Spike* anti-tank missile systems were purchased in fairly large quanti-

ties⁴. With the delivery of *Green Pine*, *Spyder*, and *Barak-MX* systems, Israel, along with Russia, has come to play a key role in equipping the Indian air defense/missile defense system.

In the last decade, quite many licensing agreements have been concluded with Israel. In particular, in accordance with the agreement between *Elbit Systems* and the Indian defense conglomerate *Adani Group*, *Hermes-900* UAVs are being produced in India under license. Under the contract for 10 *Heron-2 (Heron-TP)* UAVs ordered by India in 2022, a decision was also made on licensed production. The *Barak-8* air defense systems, which provide protection against cruise missiles, aircraft, drones, and ballistic missiles, were developed jointly by the Israeli companies *IAI* and *Rafael* and the Indian *DRDO* [source 6]. Currently, the *Barak-8* SAM systems and the anti-ship version of these systems, *Barak-MX*, as well as missiles for them, are being produced by India in accordance with agreements with these Israeli companies. According to media reports, joint Indian-Israeli companies are also developing other types of weapons, including projects for a light fighter and a main battle tank based on the Israeli *Merkava* tank.

In general, since the early 2010s, military-technical cooperation between Israel and India has begun to develop into a "strategic partnership" format due to the qualitative characteristics of the joint projects being implemented. In addition to agreements on the supply of key components for AME systems, elements of such a partnership include close interaction between the special services of the two countries, exchange of intelligence information, joint training, purchase of special equipment for the fight against terrorism, cooperation in space, etc. [6, p. 36]. Israel also participates (through the supply of electronics and components) in a significant portion of projects to transfer key combat platforms to the Indian Armed Forces. Israeli equipment was installed on *T-90* tanks, *MiG* and *Su-30* fighters, and was supplied for *A-50EI* aircraft (*Phalcon* radar sys-

⁴ The 2016 contract for 275 launchers and 5,500 *Spike* missiles was USD 1 billion worth, while the total value of the 2017 agreement for the delivery of 16 *Barak-8* systems and a batch of 560 missiles for them to protect ships from the air was about USD 2 billion.

tems), *Jaguar* and *Tejas* fighters (*EL/M-2052* and *EL/M-2032* radars), Indian project *15A* and *15B* destroyers *Kolkata* and *Visakhapatnam*, project *17A Nilgeri* frigates and the aircraft carrier *Vikrant* (*EL/M-2221* and *EL/M-2248* radars, *Barak-MX* air defense systems, and missiles for them).

Germany and the UK played a similar role in the Indian procurement of weapons and military equipment in 2014–2023, primarily supplying India with a number of components and weapons for the main combat systems. The largest contracts with the UK were the India's purchase of *Meteor* missiles for *Rafale* fighters in 2017 and the purchase of 145 *M-777* towed howitzers in 2016, made partly on British and partly on Indian production lines. In addition, in 2013–2016, 57 British *Hawk-100* training aircraft were manufactured under license in India. In cooperation with Germany, New Delhi's main focus was on purchasing engines for submarines, warships, and land-based combat systems. In particular, from 2014 to 2022, India was supplied with 20 diesel engines for the French *Scorpene* submarines, 14 diesel engines for project *17A Nilgeri* frigates, more than 20 engines for Indian patrol ships, sonars for the modernization of Project 15 *Dehli* destroyers, Project *11356 Talwar* frigates, as well as the Indian-made *Kolkata*, *Shivalik* destroyers and *Kamorta* frigates. In turn, the Indian Ground Forces purchased more than 150 diesel engines for the Indian *Arjun* tanks by 2014 and ordered almost 120 more of these engines in 2021. In addition, engines for 100 *K-9 Vajra-T* self-propelled artillery units were purchased from Germany, which were licensed to be manufactured in India under a contract with the South Korean corporation *Hanwha*. Of the combat systems themselves, only *Do-228* light transport aircraft and another 26 *Do-228MP* maritime patrol aircraft were purchased from Germany. These aircraft, along with *MILAN* anti-tank systems designed for armored combat vehicles, were manufactured in India under license agreements with German companies. In 2023, the German Ministry of Defense actively promoted a project for the licensed production of six Project 751 submarines developed by *Thyssen-Krupp* in India, but India has not yet made a decision on them.

CONCLUSIONS

As can be seen from the considered examples of contracts for the AME supply from Western countries and Israel to India, in the last decade there has been not only a significant increase in the volume of arms transfers from these countries, but some qualitative changes in the nature of military-technical cooperation with them. These changes are expressed primarily in the successful implementation of a significant number of licensing and offset agreements with the participation of Western defense industry companies in India and the activation of the corresponding process of technology transfer: for aircraft, ship and land-based military vehicles engines, and production of a number of components and missile weapons for combat systems. There are also trends of the growth of the number of joint ventures with companies from Western countries and Israel for the production of subsystems and components in the civil and military aircraft industry and other industries of the defense sector, as well as the growing participation of Indian companies and holdings in the supply chains of combat systems and components of Western defense companies. Quite a few new facilities of the largest defense-industrial holdings of the USA, Israel, and EU countries are opening in India, which indicates both the "transfer of production" and New Delhi's desire to absorb new production technologies, including through improving the training of national technical and engineering staff. Obviously, such experience will be very important for enhancing the capabilities of the Indian defense-industrial sector and the potential for exporting weapons systems and military equipment.

To a large extent, these processes in the Indian defense sphere are occurring due to the positive effect of the regulatory measures introduced within the "Make in India" framework and associated, on the one hand, with support for cooperation and investments of Western and Israeli companies in the Indian defense industry, and on the other hand, with the requirements for mandatory offsets and ensuring the participation of Indian defense companies in projects for the procurement and licensed production of Western military equipment. The result of this policy was that if before 2013 only isolated cases of licensed production in India of combat

Table 2. India's military-technical cooperation with Western countries and defense companies by contract type, 2004–2013 and 2014–2023 (according to the SIPRI database)

Country and terms of their implementation	Number of contracts	Total number of major contracts implemented	Of which licensing contracts	Of which contracts for the supply of weapons and components for combat systems
US (2004–2013)		8	1	2
France (2004–2013)		7	4	5
Israel (2004–2013)		35	1	27
UK (2004–2013)		3	1	0
Germany (2004–2013)		4	1	3
Total (2004–2013)		57	8	37
US (2014–2023)		33	10	22
France (2014–2023)		16	7	9
Israel (2014–2023)		26	9	22
UK (2014–2023)		4	3	2
Germany (2014–2023)		5	2	3
Total (2014–2023)		84	31	58

Note. The calculation was made based on the terms of implementation (not conclusion) of contracts. When the terms of implementation related to both time periods (2004–2013 and 2014–2023), the record was made depending on which period included the longer terms of contract implementation (in number of years). For example, the contract for the purchase of *Sherpa* armored vehicles from France, for which deliveries were made in 2013–2017, was attributed to the period 2014–2023. Licensed contracts also include the contracts for the licensed production of components for combat systems.

Calculated by the author based on the *SIPRI Arms Transfers Database* (23.06.2024).

systems and components from the USA, France, other Western countries, and Israel were recorded, then since the launch of “*Make in India*”, the number of relevant projects and the scale of the deployment of programs for the licensed production of Western and Israeli AME in India have increased.

These conclusions are confirmed not only by the above analysis of the main projects in the field of military-technical cooperation between India and Western countries and Israel, but also by information from the *SIPRI* database on arms supplies (Table 2). According to these data, in 2014–2023, compared to the previous decade, the number of licensing agreements for the production of AME and their components implemented by the USA, Israel, and the EU countries in India increased sharply. In addition, the number of contracts for India's procurement of equipment and components has at least doubled in all Western countries⁵.

⁵ It should be noted that the *SIPRI* database has a number of limitations and does not cover the full range of agreements in the field of Indian military equipment procurement; for example, it is difficult to track contracts between small and medium-sized defense companies.

It is important to note that the changes in the nature and scale of military-technical cooperation between New Delhi and Western countries are relatively recent and did not go far enough in order to assess the prospects of each of these processes, their impact on arms and military equipment (AME) procurement, and the future development of India's military-industrial complex and defense policy. The processes of defense technology transfers to India remain a subject of analysis – whether they will expand or continue to face restrictions, particularly for the most critical technologies. Similarly, questions arise regarding the relocation of defense manufacturing facilities to India: to what extent this reflects independent decisions by Western companies versus collaboration with Indian partner firms? Furthermore, the accelerated integration of high-tech Western equipment and components into Indian combat platforms warrants further study to determine whether it will genuinely strengthen India's defense capabilities or, conversely, deepen the country's dependence on Western supplies.

A significant challenge for India's defense policy in the future may be the rising costs asso-

ciated with defense contracts involving domestic and Western companies for the production, repair, and maintenance of weapons. Servicing these new contracts is expected to be more expensive than for previously procured, predominantly Russian AME. As a result, India's diversification of AME purchases and its emphasis on

cooperation with Western defense companies – particularly in the licensed production of combat systems – will face certain limitations. These constraints will ultimately shape the key directions for the development of India's military-technical cooperation and defense sector over the next decade.

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