Indo-US Defence Cooperation

Punching Below Its Potential

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India—US bilateral relations have witnessed several upheavals over the past seven decades, however, significant shifts in global geopolitics have led to growing proximity between the world's two largest democracies. This article analyses Indo-US defence cooperation since India's independence and argues that while the bilateral relationship has the scope and potential to emerge as a powerful and wide-ranging relationship, it is still waiting for its time in the sun. To some extent, this can be attributed to Cold War dynamics, India's independent pursuit of its strategic programmes and the resultant technology denial regimes put in place by the United States, however both the countries have also failed to capitalise on several opportunities to strengthen their bilateral defence relationship. Thus, while the relationship has immense potential, it has largely been a tale of punching below its potential.

Keywords: India, United States of America, Indo-US Defence Cooperation, Defence Trade

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India-United States bilateral relations have witnessed several upheavals over the past seven decades as a result of, inter alia, Cold War dynamics, regional geopolitics, India's commitment to the non-aligned movement and India's pursuit of nuclear, space and missile development programmes. However, the 21st century, which is witnessing significant shifts in global geopolitics, has led to growing proximity between the world's two largest democracies. This article analyses Indo-US defence cooperation since India's independence and argues that while the bilateral relationship has the scope and potential to emerge as a powerful and wide-ranging relationship, it is still waiting for its time in the sun. While partly, this can be attributed to Cold War dynamics, India's independent pursuit of its strategic programmes and the resultant technology denial regimes put in place by the United States. However, as this article has detailed, both countries have also failed to capitalise on several opportunities to strengthen their bilateral defence relationship. Thus, while the relationship has immense potential, it is the tale of punching below its potential.

This article is broadly divided into three sections. The first section provides a brief historical overview of the Indo-US relations, primarily in the defence sector, from 1947 to the present. This section is primarily an empirical analysis of India's major defence partners, which have been chronologically divided into four periods. First, 1947 to 1962, wherein the Indo-US relationship was in its infancy; second, 1962 to 1971, where after initial support during the 1962 war, India and US relationship suffered due to Cold War dynamics and American stance in the 1965 and 1971 Indo-Pakistan Wars. This ensured that India moved away from Washington in search of other partners. The third period covers 1971 to 1990, which was primarily dominated by American efforts at technology denial following Indian nuclear test in 1974 and New Delhi's independent pursuit of its strategic programmes. The fourth period, which begins from 1990, primarily covers the uptick in bilateral relations following the end of the Cold War. While studying these four periods, the article compares India's defence partnership and imports of defence platforms, etc., and analyses the annual defence imports from the four major supplier countries (including the United States), thereby assessing each country's strengths and weaknesses. The article also provides recommendations and the way forward for expanding and deepening Indo-US defence cooperation. Overall, the article assesses the Indo-US relations in different time periods, the nature of the defence cooperation, defence trade, scope and limitations in defence cooperation, and what measures can be taken to strengthen the bilateral defence cooperation and trade between the two countries.

Tracing Indo-US Defence Relations: 1947 to 2024

This section chronologically details the major events impacting Indo-US bilateral relations and, in particular, the defence sector, since India's independence. This section is divided into four phases. First, from 1947-1962, wherein the US played second fiddle to the British dominance of India's defence sector. This changed with the 1962 Sino-Indian War, where the Kennedy administration supported India in its border clash with China. Though this laid the foundation for further collaboration between the two countries, lack of American support during the 1965 and 1971 Indo-Pak Wars, followed by the Indian nuclear tests in May 1974, derailed any prospect of cooperation between the two countries till the end of the Cold War. This was followed by a long hiatus till the Jaswant Singh and Strobe Talbott dialogue in the aftermath of the May 1998 nuclear tests by India and Pakistan. In the last few decades, India and the United States have transformed their defence relationship in terms of regular military exercises, regular interactions between political leadership, defence partnership agreements and export of important defence platforms to India.

First Phase (1947–1962): Baby Steps to Build the Relationship

India gained its independence in a period when the Cold War was at its infancy. Prioritising an independent foreign and defence policy with an aim to pursue socio-economic development of a newly independent country, India's political leadership, under its first Prime Minister Jawaharlal Nehru, chose to remain non-aligned and took a conscious decision to maintain good relations with both superpowers—the United States and the Soviet Union.

Indo-US relations kicked off with the first official state visit of India's first Prime Minister, Pandit Nehru, to Washington, D.C. in October 1949. The visit was intended to seek American technical and financial assistance. However, the first encounter ended with frustration for Prime Minister Nehru as his meetings with President Truman and Secretary of State Acheson were quite disappointing. 1 The suspicion and mutual distrust intensified over the issue of the Korean crisis in the early 1950s, given the differing stands taken by both countries.² During this period, India was primarily operating British-era defence platforms, many of which, though of American-origin, were a legacy of the British Indian Military. After India's independence, till 1959-1960, Indian armed forces continued with British-origin equipment, with India almost fully reliant on the British for its defence imports (see Table 1 and Figure 1).3

Table I India's Defence Imports from United	Kingdom, F	rance, Soviet Union,
United States and Canada ((1947-1962))

Year	UK	France	USSR	US	Canada
1950	140.11	-	-	-	-
1951	261.13	-	-	0.5	-
1952	35.75	-	-	67.2	-
1953	268.76	191.7	-	-	-
1954	130.25	89.1	-	52.02	-
1955	202.95	-	4	189	-
1956	29.9	-	4	3	4.8
1957	679.35	250.8	-	3.36	8
1958	822.97	73.8	-	-	8
1959	901.89	221.3	-	-	-
1960	544.05	-	-	-	1
1961	648.1	63	334.04	102.24	-
1962	77	2.7	302.08	1.44	-
Total	4742.21	892.4	644.12	418.76	20.8

Source: Data collected from the SIPRI website.

Note: All values in SIPRI TIV are in millions.

India's Defence Imports 1947-62

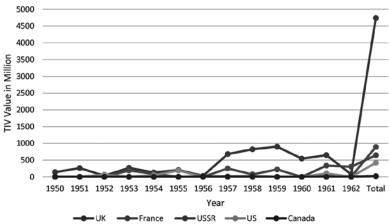


Figure I India's Defence Imports from United Kingdom, France, Soviet Union, United States and Canada (1947-1962)

During this period, India's defence imports were primarily sourced from the United Kingdom, which was the main supplier of essential military hardware for the Indian armed forces, with only a few exceptions from other countries such as France, Canada, Soviet Union and the United States. British arms supply included armoured vehicles, tanks, surface ships and fighter aircraft. In addition to direct arms sales, the UK also supported India in enhancing its domestic defence industrial capacity by permitting the local manufacture of advanced military hardware. This included licensed production of the Vampire FB-5/ T-55 fighter/trainer and Gnat fighter aircraft in India.

In comparison, the defence cooperation between India and the US was minimal, constrained to the supply of transport aircraft, light helicopters and tanks in small numbers.

Table 1 and Figure 1 clearly illustrate India's dependency on the United Kingdom for its defence requirements, which largely stemmed from the aftermath of the colonial rule. During British rule, Indian armed forces were accustomed to using British-origin weapons, which significantly reduced the training and maintenance costs associated with operating these systems. In addition, the presence of ordnance factories facilitated the maintenance, repair and overhaul (MRO) of British military hardware domestically, which was a great boon for India, given its limited foreign currency reserves at this time.

Furthermore, the British were willing to share technology with India for the local manufacturing of their defence platforms/systems. Consequently, during this period, Britain emerged as India's predominant defence partner. However, certain incidents led to growing distrust between the two nations. After the first India-Pakistan war in 1948, Britain's alignment with Pakistan in the United Nations generated feelings of distrust towards Britain. However, in the mid-1950s, Pakistan joined the US-led SEATO and CENTO military alliances, receiving state-of-the-art military hardware from the US and its other Western allies. Thus, India needed to upgrade its military to ensure a military balance with Pakistan. As a result, by 1959, Britain had again repositioned itself as the prime defence supplier to India, with the highest stakes in India's overall defence imports.⁵

In the case of the United States, India imported a few military systems from 1947 to 1962. However, their proportion to the other countries' arms supplies, especially compared with the UK and France, was negligible. As shown in Table 2, India did import some Land and Aerial systems during this period from the US. However, it is also important to note that as a result of growing Cold War politics and firming up of alliances, such as SEATO and CENTO, of which Pakistan became a member, the US emerged as the key supplier of defence hardware like Patton tanks to Pakistan, which made India to look for other suppliers for its defence imports.

Table 2 US-Origin Defence Hardware used by the Indian Armed Forces (1947 to 1962)

Land Systems	Aerial Systems
M3 and M5 Stuart tanks	Liberator bomber/Bell 47 G-2 helicopter/C-119G Flying Boxcar transport aircraft/PT-19 trainer/Super constellation transport aircraft/Sikorsky S-55/Sikorsky S-62B helicopters/
	Vultee A-31 Vengeance, Douglas Dakota, Fairchild PT-19, Harlow PC-5A (pre-independence US-origin systems acquired by the British Indian military)

Source: Data collected from multiple sources.

Second Phase (1962–1971): New Delhi Moves Away from Washington

This is an important decade in the Indo-US relations and defence cooperation. The 1962 war between India and China resulted in close cooperation between India and the US in the defence sector. However, with continued American defence sales to Pakistan, such as supply of Patton tanks and aerial support aircraft via third countries and imposition of a defence supply embargo, caused a rift in Indo-US defence relations. Post the 1965 war, India began acquiring its defence platforms and supplies largely from the Soviet Union. The Soviet assistance in the 1971 war, with the deployment of the Soviet warships and submarines to counter the American Seventh Fleet led by the USS Enterprise cemented this relationship further.

In October 1962, when border clashes broke out between India and China, the Indian forces were poorly equipped and ill-prepared to fight the Chinese forces. To counter Chinese aggression, the Indian government sought and received emergency military supplies from the US. India's Prime Minister Jawaharlal Nehru also wrote to American President Kennedy requesting for 12 squadrons of the all-weather fighter aircraft of the US Air Force.6

Apart from this, the US offered India US\$ 500 million in grants and credit to purchase the non-combat hardware, however, due to the arms embargo imposed on India post-1965 Indo-Pak War, this never materialised.⁷ The possibility of the use of the air force was an important factor in the Chinese

unilateral ceasefire and withdrawal from areas occupied by the Chinese forces. The 1962 war between India and China was a high point for India-US defence relations. However, this honeymoon period was short-lived.

Table 3 India's Defence Imports from Soviet Union, United Kingdom, France, United States, Canada and Israel (1962-1971)

Year	Soviet Union	United Kingdom	France	USA	Canada	Israel
1962	302.8	77	15.2	1.44		
1963	445.21	100.48	17	93.9	17.35	
1964	768.56	103.83	26		56.25	
1965	739.68	313.1	13.5			20
1966	616.68	270.6	21.5			20
1967	708.87	422.1	9		2.4	20
1968	1172	424.5	32	1.5	15	20
1969	1253	234.2	7.2	0.75		ł
1970	531.24	275.75	32.85	0.75		1
1971	1380.2	363.97	40.36	1.55		
Total	7918.3	2585.5	214.61	99.89	91	80

Source: Data collected from the SIPRI website.

Note: All values in SIPRITIV are in millions.

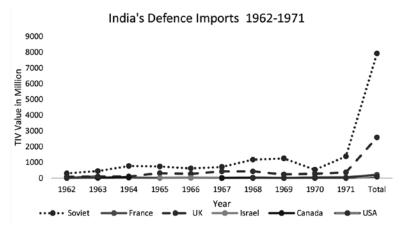


Figure 2 India's Defence Imports from Soviet Union, United Kingdom, France, United States, Canada and Israel (1962-1971)

Nonetheless, incidents, such as the Goa liberation and the 1965 Second India-Pakistan War, further complicated India's relations with the Western world. Goa was a Portuguese colony and an active North Atlantic Treaty Organization (NATO) member.8 Additionally, in the aftermath of the 1965 India-Pakistan war, the US imposed an arms embargo on India that played on the Indian psyche with the Americans being seen as an unreliable arms supplier in New Delhi.9 These two events played a critical role in the blossoming of Indo-Soviet defence cooperation.

In 1965, India and Pakistan fought their second war over the disputed territory of Jammu and Kashmir. The military crisis commenced in April 1965 with the launch of Operation Desert Hawk by the Pakistani armed forces in the Indian territory Rann of Kutch. The scope of the crisis was further enlarged with the launch of Operation Gibraltar in Kashmir Valley in August 1965 and Operation Grand Slam across the Akhnoor sector in September 1965 in order to occupy the state of Jammu and Kashmir and cut it off from the rest of India.10

To prevent a long, drawn-out conflict, the US imposed an arms embargo on both India and Pakistan, thereby limiting their war-waging potential.¹¹ The military supply embargo by the US on New Delhi, combined with the continued supply of military equipment to Pakistan—given Islamabad's membership in the SEATO and CENTO—and support via third parties (Egypt) during the 1965 conflict eroded New Delhi's trust in Washington as a reliable defence supplier.¹² This, in turn, resulted in a shift away from the Americans, with the Soviets emerging as the major defence supplier over the next few years. Beginning with the MiG-21 supersonic aircraft in 1962, to several licence manufacturing deals like T-72 Tanks and BMP series Infantry Fighting Vehicles, Moscow emerged as New Delhi's major defence supplier.

American support to Pakistan in the 1971 India–Pakistan War, turning a blind eye to the large-scale genocide in East Pakistan and deployment of the US Seventh Fleet in the Bay of Bengal, irreparably damaged India-US relations for the next few decades. On the other hand, Soviet military and diplomatic support cemented its place in New Delhi's eyes as a reliable partner. By the 1971 Bangladesh Liberation War, the Indian arsenal was predominantly of Soviet origin.

Apart from direct imports, the Soviets were willing to share critical defence technology with India to enable the manufacture of military hardware domestically. Further, the Soviet terms of defence trade were flexible and convenient for India. For instance, the Soviets agreed to adopt the commodity-

based barter arrangement payment methods for defence trade with India, including rupee payments for defence equipment, providing cheap long-term loans, manipulating the rupee-rubble exchange rate to make favourable trade balances, and establishing a repayment period of 17 years with a nominal 2.5 per cent interest rate. 13 As a result, until the 1980s, the Soviet Union became India's key supplier of defence hardware.¹⁴

Third Phase (1971-1990): Parsing a Contradictory Relationship

India's May 1974 peaceful nuclear explosion (PNE) fractured Indo-US relations further, with the US-led West sanctioning New Delhi and withdrawing from scientific and technical collaborations. The non-proliferation treaty (NPT) and India's refusal to sign it, given its discriminatory nature, did not help the relations. Attempts at re-energising the relationship were made with visits of the American President, Jimmy Carter, to India in January 1978 and the Indian Prime Minister, Morarji Desai, to the United States in June 1978.

In the 1980s, efforts were made to resolve the disagreements between the two countries. Prime Minister Indira Gandhi made an official visit to the US. This visit was primarily focused on increasing scientific, cultural and economic cooperation between the nations and resolving a longstanding dispute over India's nuclear programme.¹⁵ Defence cooperation was not on the agenda during the visit.

After Mrs Gandhi's assassination in 1984, her son, Rajiv Gandhi, assumed office. During Rajiv Gandhi's term, attempts were made to strengthen the relations between New Delhi and Washington, D.C. During this phase, India acquired some Western defence hardware despite having deep defence cooperation with the Soviet Union. These systems were French Mirage 2000, Anglo-French Jaguar fighter bomber, German HDW Type 209 submarines and Swedish Bofors artillery guns.

While US-India defence cooperation was not making any headway, this phase, on the contrary, witnessed American interference torpedoing the sale of Swedish Viggen fighter aircraft to India. The Swedish SAAB was one of the contenders in supplying aircraft to India. The company proposed its state-of-the-art *Viggen* fighter aircraft, which was powered by an American jet engine. In addition, US assistance was critical in the development of the flight controls, navigation system, aerodynamic design and electronic components used in the aircraft. American reluctance to transfer any defence hardware to India with American components or technology, led to Sweden being unable to sell the Viggen fighter aircraft to India. 16

American action on the sale of the Viggen was quite surprising because the US was closely working with India on developing the Indian indigenous fighter aircraft under the Light Combat Aircraft (LCA) programme. The LCA programme witnessed remarkable contributions from the American side, with various American defence companies like Lockheed Martin and General Electric actively engaging the Indian side on the project. The scope of the collaboration included the consultation, certification and supply of various critical components, such as the engine and flight control system. Lockheed Martin provided crucial technical assistance for the digital fly-bywire flight control system for the LCA programme. General Electric supplied the engine and integration support for the LCA programme. In addition, several medium-scale companies, such as Calspan and Wright Laboratories, are assisting India in putting in place the flight control and related subsystems.¹⁷ The May 1998 Indian nuclear tests were a major setback to Indo-US relations, with the American government sanctioning Indian scientists, companies and organisations in addition to denying technical assistance and advanced technologies.

Fourth Phase (1990 onwards): Going from Strength to Strength

Till the end of the Cold War, the Soviet Union remained the major supplier for New Delhi with a few exceptions, such as France, Sweden and Germany, in the case of particular weapon systems. As stated by Damon Bristow, in his essay 'India's New Armament Strategy: A Return to Self-Sufficiency?' in the RUSI Whitehall Paper Series, by the end of the Cold War:

India was almost fully percent dependent on Soviet-era material for its ground-air defence, tracked armoured vehicles and guided missile destroyers. It was seventy-five percent dependent on Soviet equipment for its fighter aircraft defence; sixty percent for its ground attack aircraft, eighty percent for tanks, ninety-five percent for its conventional submarines, and seventy percent for its frigates.18

After the Soviet disintegration, India began the process of diversifying its defence supplies. India's adoption of Liberalisation, Privatisation and Globalisation (LPG) further assisted in its diversification efforts as it opened the doors to the Western defence market, primarily the US defence market for the Indian armed forces. One of the major reasons for India looking to diversify its defence imports was the challenges that the Indian armed forces were facing in getting spares and other supplies for Soviet-origin defence

platforms after the disintegration of the Soviet Union. As a result, the Russian share in India's arms imports shrank, with the US, France and Israel growing to become important sources of India's defence imports.¹⁹

The formal defence engagement between the two countries commenced in 1995 with the signing of the 'Agreed Minute on Defence Relations Between the United States and India'. However, this uptick in relations was halted with India's nuclear tests in May 1998. Following the Pokhran-2 tests, the United States imposed sanctions on India and halted all military and technological cooperation. However, both countries also realised the importance of restoring normal relations, which led to talks between then Indian External Affairs Minister Jaswant Singh and American Deputy Secretary of State Strobe Talbott. Between 1998 and 2000, the two leaders met on 14 occasions in seven countries, across three continents. 20 The talks were useful as they enabled both India and the US to understand each other's vulnerabilities and security objectives. While the US began with a position of 'Cap, Roll Back and Eliminate', wherein they wanted India to give up nuclear weapons and sign the CTBT, they offered to lift economic sanctions and attendant diplomatic pressure from US and its allies in exchange. Indian leaders, on the other hand, were successful in conveying their national security concerns and reluctance to curb its strategic programmes.²¹

The American diplomatic support for India during the Kargil War signalled the beginning of the de-hyphenation of India and Pakistan in the American foreign policy matrix. This was an important turning point in Indo-US relations. Fought in May-July 1999, primarily in the Kargil and Dras sectors of Jammu and Kashmir, the conflict was fought between two nuclear powers. The historically contradictory policy followed by the Americans was again in witness during the Kargil conflict. On one hand, the US denied India's request to use the American Global Positioning System (GPS), which would have been crucial for the Indian military in precisely targeting the heights that were occupied by Pakistan regulars and Mujahideen supporters.²² On the other hand, the Clinton administration sided with the Indian side, telling the Pakistani Prime Minister Nawaz Sharif in no uncertain terms—during the 4 July 1999 meeting at Blair House—to withdraw from the heights and terminate the conflict.²³ This change in American foreign policy towards the sub-continent contributed in great measure to reducing the bitterness in New Delhi due to the economic and technological sanctions that had been imposed on India following the Pokhran 1998 nuclear test.²⁴ This, in turn, set the stage for a landmark visit by President Bill Clinton to India.25

The Talbott–Jaswant talks were successful in laying the groundwork for a resumption of Indo-US engagement and in 2002 the two countries signed the Agreement on General Security of Military Information Agreement.²⁶ The agreement enabled the sharing of military intelligence between the two countries.²⁷ Subsequently in January 2004, India and US began the Next Step in Strategic Partnership (NSSP), which was an important step to widen and deepen its technological, strategic and defence engagement between the two countries.²⁸ In 2005, both countries agreed to the adoption of the New Agreement for Defence Cooperation.²⁹ Additionally, in 2005, the United States took a landmark step in overturning its decades-long nuclear nonproliferation policy, and the July 2005 Joint Statement between President George W. Bush and Prime Minister Manmohan Singh paved the way for return of India to the nuclear mainstream after close to five decades.³⁰ In 2016, the US declared India a major defence partner. This announcement facilitated the collaboration and deeper defence engagement between the two countries.³¹

The operationalisation of the Indo-US Nuclear Deal in October 2008 transformed the relations between the two countries in the defence sector as well. Prior to 2008, the defence trade between the two countries was limited to non-lethal weapons such as naval choppers and counterbattery radars, etc. Since 2008, India has imported defence items worth US\$ 20 billion from the US, including some of the state-of-the-art systems, such as P-8i Anti-Submarine Warfare (ASW) Maritime Patrol Aircraft (MPA).³² India was the first import customer of the P-8i.33 This underlined the closeness between the two countries for niche defence technologies.

In the initial phase, cooperation was limited to the direct sale of military hardware from the US to India and bilateral military exercises like Vajra Prahar and Cope India. However, over the past decade, defence cooperation has expanded its scope from seller-buyer to license manufacturing and codevelopment of critical defence technologies. The proposed contract for the licensed manufacturing of the General Electric GE 414INS6 engine in India is a notable case in point.³⁴

Apart from licence manufacturing, both countries are moving ahead with the joint development of critical technologies. Initiatives such as US-India Initiatives on Critical and Emerging Technology (iCET) and Indo-US Defence Acceleration Ecosystem (INDUS-X), have been framed to strengthen collaboration in emerging advanced technologies. In January 2023, iCET was formed, and under the iCET, both countries expanded their cooperation in the fields of Artificial Intelligence, Quantum, Semiconductors, Space, etc.35 In 2023, India and the US also agreed to create a defence startup fund (INDUS-X) to support Indian start-ups operating in the defence sector. Likewise, the US Defence Innovation Unit and India's Innovations for Defence Excellence (iDEX) are deepening their collaboration for the adoption of cutting-edge commercial military technologies for military applications.36

However, there are many hurdles and challenges that both parties have to address. The Indo-US defence cooperation has not yet reached the level that India-Russia defence relations have reached.

EXPANDING INDO-US DEFENCE TRADE

India-US defence trade has grown manifold over the last two decades. In the past decade itself, India has procured US\$ 20 billion of defence hardware from the US. Tables 4, 5 and 6 show the wide range of defence platforms that have been imported by India's military between 2000 and 2024 from the US. These purchases include a variety of defence products ranging from small-calibre rifles to large strategic airlifting aircraft. Several big-ticket defence trade items have been procured by India from the US. In 2007, the Indian Ministry of Defence secured a contract with a US military aircraft manufacturer Lockheed Martin for the acquisition of C-130J tactical airlift aircraft (06 nos.) worth US\$ 962 million.³⁷ This was followed by the US\$ 2.1 billion worth of orders for acquiring the P-8i MPA-ASW aircraft (08 nos.) for the Indian Navy.³⁸ Apart from the complete weapon systems, India has procured vital components from the US for its domestic defence aerospace programmes, like aircraft engines. The US-origin GE404 and GE414 jet engines, which will be used in various variants of the LCA, are going to be the mainstay of India's indigenous defence aerospace programmes for the coming decades.³⁹

Table 4 India's Defence Imports of Major F	Platforms fro	om the US (2000 to	2024)
(Air Syster	ms) ⁴⁰			

Sr. No.	Weapon System (Air)	Quantity	SIPRI TIV Value in Million
1	AH-64 Apache	22	330
2	AGM-114 Hellfire ATGM	1,354+	83.94
3	Stinger MANPAD	245	19.6
4	APG-78 Longbow combat helicopter radars	12	36
5	Spare helicopter turboshafts	6	4.5

6	CH-47 Chinook transport helicopters	15	300
7	C-130 Hercules transport aircraft	13	520
8	C-17 Globemaster III heavy transport aircraft	11	1540
9	MQ-9A Reaper UAVs (two-year lease in 2020)	2	13
10	CBU-97 guided bombs	512	76.8
11	Aircraft turboprops (228 delivered)	234	
12	Aircraft turbofans (48 delivered)	147	
	Total		2923.84

Table 5 India's Defence Imports of Major Platforms from the US (2000 to 2024) (Naval Systems)

Sr. No.	Weapon System (Naval)	Quantity	SIPRI TIV Value in Million
1	Austin-class amphibious transport dock	1	53.3
2	MH-60R Seahawk naval helicopters (6 delivered)	24	198 (12)
3	P-8I Poseidon patrol and ASW aircraft	12	1500
4	Mk-54 ASW torpedoes (32 delivered)	48	16 (32)
5	S-61 Sea King ASW helicopters	6	14.4
6	Harpoon anti-ship missiles	53	63
7	Harpoon Joint Common Test Set (accepted)	1	
8	Naval gas turbines (6 delivered)	24	70
	Total		1914.7

Table 6 India's Defence Imports of Major Platforms from the US (2000 to 2024) (Land Systems)

Sr. No	Weapon System (Land)	Quantity	SIPRI TIV Value in Million
1	Firefinder counterbattery radars	12	_
2	M-777 towed 155 mm howitzers	145	_
3	M-982 Excalibur-guided artillery shells	1,200+	52
4	SIG Sauer SIG716 assault rifles	72,400+	
5	AH-64 Apache	6	45 (3)
	Total		97

A closer analysis of the Indo-US defence trade indicates that it is mostly limited to transport aircraft, artillery guns, ASW helicopters, assault rifles and munitions. Trade in big-ticket and technology-intensive items such as fighter aircraft, main battle tanks, submarines and destroyers, is largely absent. The exception to this rule is the P-8i Neptune MPA-ASW aircraft, which is known as one of the world's most advanced ASW aircraft, with India having the distinction of being the first international customer for this platform.

MAJOR MILESTONES IN INDO-US DEFENCE COOPERATION

This section will detail the major milestones and the institutional frameworks which have given shape and structure to Indo-US bilateral defence cooperation over the past few decades.

2-2 Ministerial Dialogue

In 2018, India and the US launched the 2-2 Dialogue mechanism to strengthen the strategic relationship between the two countries.⁴¹ Under this mechanism, defence ministers and external affairs ministers of both countries meet annually in order to bolster collaboration on various bilateral and global issues. So far, five rounds of the 2-2 Dialogue have been conducted successfully.42

In its latest (fifth) edition held in 2023, both countries reaffirmed their commitment to a stronger defence partnership and called for greater focus on the execution of the joint projects initiated under the June 2023 Roadmap for India–US Defence Industrial Cooperation and expanding collaboration in emerging domains, such as space and artificial intelligence. Furthermore, both countries agreed to encourage investment in strengthening India's MRO capabilities for the US naval ships, aircraft and unmanned systems.⁴³

Crucial Military Agreements

Apart from the above, there are other defence-related agreements signed between the two countries that have laid down the foundation for mutual trust and interoperability between the two militaries. These agreements are: the 2016 Logistics Exchange Memorandum of Agreement (LEMOA), 2018 Communications Compatibility and Security Agreement (COMCASA), and the 2020 Basic Exchange and Cooperation Agreement (BECA).44 Furthermore, to promote maritime cooperation, both countries agreed to commence the exchanges between the US Naval Forces Central Command (NAVCENT) and the Indian Navy. 45

In January 2023, both countries launched the US-India initiative on Critical and Emerging Technology (iCET). Under this initiative, both countries plan to work together in key domains, such as space, semiconductors, advanced telecommunications, artificial intelligence, quantum, biotechnology and clean energy.46

Initiatives for the Defence Industrial Cooperation

In the past decade, India and the US have signed multiple security agreements to strengthen their defence relations. In January 2006, both countries signed the Research, Development, Testing and Evaluation (RDT&E) Memorandum of Agreement (MoA) to promote co-development and coproduction of defence equipment. This agreement was renewed in January 2015.⁴⁷ The MoA aims to boost collaboration between the two countries in the areas of research, development, testing and evaluation, potentially leading to new or improved military capability. Under the MoA, the following activities are envisaged:

basic research, applied research, advanced technology development, concept of operation studies and analyses, advanced concept technology demonstrations, system prototypes, system development and demonstration (engineering and manufacturing development), developmental test and evaluation of system subsystem efforts, and evolutionary acquisition/ spiral development efforts associated with low rate initial production or production programs.48

The Defence Technologies and Trade Initiative (DTTI) was the first major security agreement signed between the two countries in 2012 with the aim of promoting co-development and co-production. During US President Obama's visit to India as the Chief Guest at India's 66th Republic Day celebrations, both countries worked on the completion of the 2015 Framework for the US-India Defence Relationship, which laid down the path for bilateral defence and strategic partnership for the next decade. Under this framework, both countries agreed to cooperate on Aircraft Carriers and Jet Engine Technology. Furthermore in 2018, India was added to the Strategic Trade Authorisation-1 (STA-1) list of the US, which is critical to easing export controls for high-technology product sales.

To promote co-development and co-production between two defence industries, both countries concluded a Memorandum of Intent between the US Defense Innovation Unit (DIU) and the Indian Defence Innovation Organisation-Innovation for Defence Excellence (DIO-iDEX) in 2018.49 Subsequently, in December 2019, the Industrial Security Agreement was signed to facilitate the exchange of classified/proprietary information between the defence industries of both the countries. In October 2021, they agreed in principle to establish the Indo-US Industrial Security Joint Working Group. This group was intended to meet periodically to align policies and procedures that would allow defence industries of both the countries to collaborate on cutting-edge defence technologies.⁵⁰

Integration of Indian Defence Industries into the Global Supply Chain of US Defence Companies

An important yet ignored aspect of the deepening nature of Indo-US defence cooperation is the integration of Indian defence companies into the supply chain of American defence companies like Lockheed Martin and Boeing. This is indicative of growth in the Indo-US relationship from that of a buyer-seller to one of becoming partners. In 2010, TATA Lockheed Martin signed an agreement for the assembly of the C-130 aircraft in India; both companies also established a joint venture company called the TATA Lockheed Martin Aero Structure Limited. So far, the company has produced 200 empennages for the C-130 J military transport aircraft.⁵¹ In March 2023, TATA Advanced System Limited (TASL) and Lockheed Martin signed an MoU for the initial orders (29 nos) of fighter wing shipset for the F-16 fighter aircraft.52

In the case of rotary-wing aerial platforms, the industrial collaboration was also evident in June 2009 TASL and Sikorsky signed an agreement for manufacturing the cabin of the S-92 helicopter in India. Currently, the cabin and other 5,000 precision components are being manufactured at the Hyderabad facility.⁵³ In the rotary-wing section as well, the industrial collaboration is evident and impressive. The Boeing Defense, the manufacturer of the Apache gunship, has been in collaboration with Indian manufacturer TASL. Their JV TATA Boeing Aerospace Limited, has so far delivered 190 fuselages to Boeing's Apache final assembly plant in Mesa, Arizona in the United States.54

Further, in April 2018, TASL and Lockheed Martin inaugurated their manufacturing facility at Hyderabad that carries out metal-to-metal bonding. It is India's first such facility, and it will help the company to undertake in-house manufacturing of complex aero-structures, which will boost indigenisation in the medium to long term.⁵⁵

Consultancy Support and Co-development of UAVs

In July 2021, India and the United States signed a project agreement for the co-development of the Air-Launched Unmanned Aerial Vehicle (ALUAV) under the Joint Working Group Air Systems in the DTTI.⁵⁶ Further, under the proposed deal for the acquisition of 31 MQ-9 Predator B drones for US\$ 3 billion, the US has proposed consultancy to India for developing its indigenous drone.⁵⁷ Presently, the Indian Navy has leased the two MQ-9 B Sea Guardian drones from the United States for surveillance and reconnaissance purposes.58

MISSED OPPORTUNITIES: SLIPPING BETWEEN THE CRACKS

As the above paragraphs highlight, India and the United States' defence cooperation has expanded and deepened manifold over the past couple of decades, with both countries conducting defence trade worth US\$ 20 billion. In 2016, the US designated India as the most preferred defence partner. Nevertheless, there are many such cases where both countries missed important opportunities to expand their defence trade. The following section of the article deals with five such missed opportunities, where if cooperation had fructified, it could have catapulted Indo-US defence relations to the next level.

Medium Multirole Combat Aircraft (MMRCA) 1.0

Post the 1999 Kargil conflict, India decided to acquire the medium category multirole combat aircraft to strengthen its air power. In August 2007, the Request for Information (RFI) was issued by the Ministry of Defence (MoD), inviting various global aircraft manufacturers to submit proposals for the acquisition of 126 fighter aircraft.⁵⁹ The contract had a clause for local manufacturing in India. The international arms market defined this tender as the mother of all tenders since its cost was estimated to be close to US\$ 20 billion.60 The tender was responded to by all six major fighter aircraft manufacturers, including two American manufacturers, namely, Boeing and Lockheed Martin. This was a historic moment in the history of India's defence acquisition, as for the first time, two American companies also participated in India's defence acquisition process.

The Boeing participated with its F/A18 Super Hornet and the Lockheed Martin with F-16 Block 60. However, as per the media reports in the field trials, both the aircraft failed to meet the technical specifications drafted by the Indian Air Force (IAF).⁶¹ This was surprising as the American F-16 and

F/A-18 have been successful fighter aircraft with several countries across the globe operating the same, with proven operational prowess in various conflicts across the globe. Given the fact that both aircraft have successfully proven their worth in combat roles, it was surprising to note that both failed to meet IAF's technical requirements. Only the Eurofighter Typhoon and Dassault Rafale aircraft were able to fulfil the IAF's technical requirements. Finally, the French-origin Dassault Rafale won the order due to lower cost. 62 In 2016, a limited number of Rafale aircraft was procured by the Indian government.

Honeywell Engines

In 2013, the Indian Air Force sought to upgrade its Jaguar fighter bomber fleet (56 aircraft) to the Display Attack Ranging Inertial Navigation III (DARIN III) standard. 63 Under this upgrade, the current Rolls-Royce Adour 811 engines were proposed to be replaced with American-origin Honeywell's F-125IN engine.⁶⁴ The new engine was planned to power 80 aircraft. The US firm quoted US\$ 2.4 billion for 180 engines, a price which was unacceptable to the IAF and Hindustan Aeronautics Limited (HAL), which resulted in the shelving of the engine upgrade plans. 65 This was another major defence project, which did not fructify and proved to be a setback to expanding Indo-US defence trade.

Procurement of Single-Engine Fighter Aircraft

In 2016, the Government of India proposed the procurement of 200-250 single-engine fighter aircraft from the international market as opposed to the earlier plan to procure twin-engine fighter aircraft.66 The decision to procure single-engine aircraft narrowed down the options to two vendors, which had a single aircraft under production. Firstly, the American F-16 Block 70/72, manufactured by Lockheed Martin and Gripen-E, manufactured by the Swedish firm SAAB. Both the Original Equipment Manufacturers (OEMs) offered the best offer under the strategic partnership model to jointly collaborate with Indian strategic partners with the highest degree of local production through Transfer of Technology (ToT).⁶⁷ Nevertheless, the deal was shelved, thereby derailing the American hope to enter India's aerospace market.

26 Carrier-Borne Fighter Aircraft for the IAC-1

In 2021, the Indian Navy released a tender for the acquisition of 26 carrierborne aircraft to be operated from its newly inducted aircraft carrier, Indigenous Aircraft Carrier-I (IAC-I), INS Vikrant. After a series of field evaluations and trials in 2023, the Indian Navy selected the French Rafale M

(Marine) aircraft over the American F/A-18 Super Hornet Block III. In July 2023, Defence Acquisition Council (DAC) approved the procurement of the 26 Rafale, which is planned to be an outright purchase under a government deal.⁶⁸ This was again a missed opportunity for the US to sell big-ticket defence items to the Indian armed forces.

National Advanced Surface-to-Air Missile System (NASAMS) II

To safeguard the national capital and the top political and military leadership from aerial threats, such as cruise missiles, ballistic missiles, fighter aircraft and UAVs, the Indian Defence Ministry decided to purchase the US-origin NASAMS II, often referred to as the Integrated Air Defence Weapon System (IADWS). The deal included the 5 AN/MPQ-64 Fl Sentinel radar systems, 118 AMRAAM AIM-120C-7/C-8 missiles (the surface-to-air version of the medium-range air-to-air missile), 3 AMRAAM Guidance Sections, 134 Stinger FIM-92L missiles, and associated accessories.⁶⁹ In 2018, the DAC cleared the Acceptance of Necessity (AoN) for the purchase with an estimated cost of US\$ 1 billion. 70 However, the deal was not concluded as the American side increased the cost to US\$ 1.86 billion. In July 2020, Live Fist Defence reported that the IAF had rejected the acquisition of this US-made system in favour of an indigenous air defence system.⁷¹

An analysis of the missed opportunities listed above highlights the fact that in many cases, the American option on offer, whether it was aircraft or air defence systems, was overlooked due to higher cost as compared to other options on offer. This is an important takeaway for the American side, given the cost-conscious Indian leadership. Therefore, it might be important for the American side to sweeten the deal by offering transfer of technologies or assistance in other related high-technology areas, which might make the American offer more acceptable to India.

Another possible reason could be the historical distrust towards the US as a reliable partner, given its actions in the 1965 and 1971 wars and more recently in the Kargil conflict. Though the recent 2005 nuclear agreement and other military, diplomatic initiatives between the two countries have gone a long way in alleviating this historical baggage, past American actions, especially during conflict situations, might still be bearing on bilateral relations.

Comparative Analysis of India's Defence Imports (2000–2023)

Since independence, imports have been the major source of meeting India's defence needs. Over this period, defence imports witnessed multiple trends,

such as between 1947 and 1962, Britain remained the major source of India's defence imports. Post 1962 till 1990, the Soviet Union emerged as the primary source of India's defence needs. The American assistance during and immediately after the 1962 border clash with China was an exception to this general rule. Following the disintegration of the Soviet Union, India started to make efforts to diversify its defence imports. This was as a result of economic liberalisation, as well as a conscious attempt to move away from the former Soviet Union, due to bottlenecks, lack of regular supplies and challenges in finding spares. In the post-2000 period, this diversification became more visible with new actors, such as Israel and the United States, securing major supply contracts. However, as the analysis below shows, Russia continues to be the major supplier for meeting India's defence requirements.

Methodology for Table and Graph: The data in Table 7 (and other tables in the article) and Figure 3 have been prepared by the authors using the data available on the SIPRI Arms Transfer database. 72 For a better assessment, the authors have compiled imports on an annual basis for each country rather than by weapon category.

Table 7 India's Defence Imports from Russia, USA, France and Israel (2000–2023)

Year	Russia	France	USA	Israel
2000	245.7	20.16	-	3.5
2001	118.14	9.16	,	6.7
2002	78.56	1.66	1	50.7
2003	436.99	1.66	-	43.87
2004	417.17	32.01	-	73.42
2005	72.44	29.51	-	98.42
2006	69.24	0.01	16	55.42
2007	122.9	1.51	63.7	38.67
2008	140.13	4.51	-	25.4
2009	162.82	5.26	1	63.8
2010	205.1	10.76	47	93.15
2011	192.58	10.01	47	110.95
2012	1522.95	10.01	132	68.77
2013	1780.51	13.76	266.65	17.02
2014	179.73	12.41	266.65	68.52

2015	213.71	41.16	125.65	82.02
2016	209.06	39.66	2.85	98.3
2017	161.82	333.03	43.65	53.3
2018	106.3	32.16	3.2	50.55
2019	102.34	386.43	244.49	5.33
2020	108.46	90.04	173.69	7.68
2021	174.64	399.47	143.7	99.65
2022	120.95	390.86	151.76	86.33
2023	75.22	33.07	18.79	103.3
Total	7017.46	1908.28	1746.78	1404.77

Source: Data collected from the SIPRI website. Note: All values in SIPRITIV are in millions.

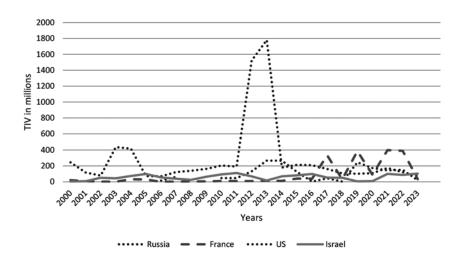


Figure 3 India's Defence Imports from Russia, USA, France and Israel (2000-2023)

Source: Data collected from the SIPRI website. Note: All values in SIPRI TIV are in millions.

An analysis of Table 7 and Figure 3 indicates that Russia continues to be India's largest defence equipment supplier by a large margin. During the period 2000-2023, Russia has sold 3.6 times more defence equipment to India as compared to France, and four times more than the United States. Thus, while attempts to diversify in the aftermath of the Soviet disintegration have had some impact, Russia is still the largest supplier of defence equipment to India.

RECOMMENDATIONS AND THE WAY FORWARD

India and the US have largely belied their potential in the defence sector, and more so given the fact that the US has not been able to emerge as a primary, if not the largest, source for India's drive to modernise its defence forces, equipment and platforms. As the data analysed in the article point out, over a two-decade period from 2000 to 2023, not only has Russia held the pole position as the major supplier for meeting India's defence imports, but Russia, as compared to the US has sold four times more defence equipment and platforms to India.

History is the only part of the story here. Of course, the Indian military has historically been reliant on Russian/Soviet defence platforms, whether it be the MiG series of fighter aircraft or the T-72 MBT or various naval platforms. However, in the post-Cold War era, India has consciously attempted to diversify the sources of its defence imports.

A key takeaway for the US from a closer study of Indo-Russia defence trade is that Russia, in addition to being a reliable supplier, has built an exclusive, unique partnership with India in the defence sector. This bonhomie has transferred into India, solely relying on Russian platforms for air defence platforms, missile destroyers and tracked armoured vehicles in addition to dominance in various other categories of defence platforms. The United States, too, will have to build such a unique and exclusive partnership with India. A start has been made with the sale of the P-8i ASW MPA.

Pursue Big-Ticket Defence Items

The United States' strike rate in securing big-ticket sales to India has not been great. One of the big successes has been the heavy-lift transport aircraft. The US will do well to pursue the Multirole Fighter Aircraft (MRFA) 2.0, wherein India wishes to acquire 114 combat aircraft. Two American manufacturers, namely, Lockheed Martin (F-21 - India-specific version of F-16 Block 70/72) and Boeing (F-18 Block III and F15 EX) responded to the Indian government's tender. While Lockheed Martin has collaborated with TATA Advanced Systems Limited for their F-21, Boeing has collaborated with HAL and Mahindra Aerospace for their F-18.73 The deal has not made

much progress, despite eight years having passed since the RFI was floated by the Defence Ministry.74

The second big-ticket item, again in the aerospace sector, is the licence manufacturing of General Electric's GE 404 IN20 jet engine, which will power India's indigenous LCA. Given that the Indian Air Force has already ordered 123 aircraft, and an additional 97 aircraft are at an advanced stage of contract negotiations. Thus, the number of LCA Tejas aircraft with the IAF will reach 220 (equivalent to 10 to 11 squadrons).75 Thus, in terms of quantity, the LCA will be IAF's mainstay fighter aircraft after the Su-30 MKI. Currently, 260 Su-30s are operational with the IAF. India will, therefore, need over 250 engines to operate the 220 LCA Tejas aircraft.

As the LCA Tejas aircraft will be the mainstay of the Indian Air Force for the coming several decades, it is a great opportunity for the US conglomerate General Electric, which has already signed an MoU with HAL for local manufacturing of 99 GE 414 engines that are going to be powered by the LCA Mark II aircraft. As opposed to this, the GE 404 will be required in larger numbers and in the short term. Therefore, it is a sensible option to enter into an MoU with HAL or another Indian company to manufacture it locally. This could very well be important, as the ongoing supply chain bottlenecks are causing delays in the delivery of the GE404. The disruption of the supply chain of the GE 404 engine has hampered the production and deliveries of the first batch of the LCA Mark IA. Earlier, the aircraft was planned to be delivered by March 2024; however, now it is expected to be delivered by September 2025.76 In case the disruption continues, it could very well paint the US as an unreliable partner.

Need to Expand the Nature of Defence Platforms on Offer

The primary focus of the defence trade between India and the US has been on the sale of mid- to high-value aerial platforms, such as rotary-wing aircraft, cargo planes and MPAs. Even in the case of aerial platforms, the trade remains constrained to the transport aircraft and MPAs. The US has not been able to successfully clinch a deal in the fighter aircraft category. To increase the defence trade with India, the US should opt for two strategies: firstly, by expanding the scope of the defence products; and secondly, by offering niche technologies to India. India should shift its focus away from aerial platforms and focus on naval and land platforms. Such a shift has twin advantages-firstly, it will allow the US the opportunity to clinch highvalue deals; secondly, it will also allow the US to leverage its technologically superior platforms in the land and the naval domains.

Take a leaf out of the Russian Playbook

Instead of offering non-core technologies or assembling the military platforms in India, the US should focus on offering core state-of-the-art technologies to India, such as metallurgy and material technology, computing, and engine and associated technologies. The primary reason for the robust India-Russia partnership has been the fact that Russia has valued the Indian partnership and has not shied away from sharing core technologies with India, viz. aircraft carriers to nuclear submarines. As a result, the majority of defence platforms and production capabilities of the Indian defence industry were mainly developed with Soviet assistance during the Cold War. Therefore, to replace Russia as India's large defence partner, the US has to focus on transfer of technology, co-development, and co-production of defence platforms. Further, the US should offer India cutting-edge technologies they have offered to other allies, like nuclear attack submarine technology to Australia under AUKUS, and technical assistance to South Korea for developing its KF-21 Boramae fighter aircraft.⁷⁷

Promoting Reverse Export from India

At present, the United States is India's top defence export customer. However, the export does not include any major and complete weapon platforms. The majority of these exports include spare parts, components and sub-assemblies manufactured by Indian manufacturers, such as TATA and HAL, for American weapon manufacturers like Boeing and Lockheed Martin.⁷⁸ This is an area wherein India could work with the US to widen its scope of defence exports to include complete weapon systems or platforms.

A small beginning was made in 2020, when it was reported that India had pitched for India's LCA Naval variant to meet the US Navy's requirement for a trainer aircraft to train its pilots for carrier operations.⁷⁹ However, no significant updates emerged on the subject later. More recently, in February 2025, India's Kalyani Strategic Systems signed a Letter of Intent with the American firm AM General to supply artillery cannons.80 This marked a milestone event in the history of India-US defence cooperation. Although, in comparison to imports from the US, these figures seem tiny, it is a step in the right direction to emerge as closer defence partners.

Focus on Joint R&D and ToT in the Defence Sector

Currently, India has several domestic weapon development and production projects underway; these projects seek crucial components that India is outsourcing from multiple sources in the international market. For instance,

India's aerospace programmes in both fixed-wing and rotary-wing aircraft are currently based on foreign-sourced engines. In this case, US can cooperate with India by offering engine technology, technical assistance, or co-development and co-production of a completely new engine. The US has already made a good beginning in the area through the ongoing acquisition of GE 414 INS6 engines (99nos) for India. In June 2023, an MoU was signed between US engine manufacturer General Electric and India's HAL.81 It is important to note that for the first time, the United States has shown interest in sharing critical technologies with India, as under the deal, state-owned HAL will be manufacturing GE engines in India, with 80 per cent of manufacturing technologies being shared with the Indian industry.82

India and the US have also begun cooperation in the manufacturing of gas turbines for naval platforms. In February 2023, the American firm General Electric's subsidiary GE Marine signed an MoU with India's stateowned HAL for expanding the marine gas turbine manufacturing. Under the MoU, GE will help HAL to expand its production capabilities to undertake assembly, inspection and testing (AIT) of their LM5000 series gas turbine engine in India. Since 1986, HAL has been engaged in AIT for LM5000 series gas turbine engines. Following this, HAL has delivered 22 such engines, which are powering 11 Indian Navy warships, including India's first indigenous aircraft carrier IAC-I, INS Vikrant.83

The above changes are indicative of the change in American outlook towards India from just a buyer to that of an important and valued partner. If this partnership is continued over the next few decades, the US could well become a major supplier of Indian military equipment and defence platforms. This, in turn, could benefit American interests as well. For example, India's growth as a logistic MRO hub for aircraft and naval vessels in the Indo-Pacific region will reduce turnaround time for US naval vessels, in addition to integrating the Indian defence industry into the global supply chains of US defence and aerospace companies. India and the US have already identified the following domains for fast-track technology collaboration and co-production: the priority areas are 'air combat and support (including aeroengines); ISR systems; ground mobility systems; undersea domain awareness; and smart munitions, including long-range artillery ammunition'.84

Thus, in conclusion, Indo-US defence cooperation has the potential to expand manifold over the next few decades. Concerted efforts are essential to overcome historical baggage and suspicions. Importantly, the US seems to be learning from the past mistakes and failures and treating India as a valuable 'partner' instead of just an export destination for its defence platforms. This change will make American efforts to export its defence platforms more acceptable to India, given that it fits into New Delhi's larger plans of greater self-reliance in the defence sector.

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