

India's Quest for Fighter Jets:

Make in India vs. Make America Great Again

Bharath Gopalswamy



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Cover photo: Soldiers from 1st Stryker Brigade Combat Team, 25th Infantry Division and the 2nd Battalion, 9th Gurkha Regiment of the Indian army take part in the closing ceremonies for exercise Yudh Abhyas 14 at Chaubattia, India, Sept. 30, 2014. More than 100 US Soldiers participated in the exercise, which began Sept. 17 and too place at Ranikhet Cantonment, Utterakhand, India. Yudh Abhyas is an U.S. Army Pacific Command-sponsored exercise and is geared toward enhancing cooperation and coordination through training and cultural exchanges and building skills and relationships necessary during a peacekeeping operation. *Source:* U.S. Army/ Staff Sgt. Mylinda DuRousseau, 1/25 SBCT Public Affairs

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EXECUTIVE SUMMARY

This report analyzes the extent to which the sale of US fighter jets to India is an optimal way to boost the grander bilateral strategic convergence between the world's two largest democracies. This is a convergence of great significance, in the context of the United States' shift in strategic focus from the Asia-Pacific to the Indo-Pacific. Since then, the US government has enshrined this greater focus on the region in its 2017–2018 National Security Strategy (NSS), which stated, "A geopolitical competition between free and repressive visions of world order is taking place in the Indo-Pacific region...The U.S interest in a free and open Indo-Pacific extends back to the earliest days of our republic."¹

In recent years, China's regional ambitions in the Indo-Pacific have become a serious security concern for both India and the United States. Chinese infrastructure projects in the region's smaller and poorer countries—under China's Belt and Road Initiative—have raised concerns about the susceptibility of these economies to the predatory economics that have recently characterized the Chinese regional approach. China's economic ascension has been accompanied by the tendency of Chinese leaders to pay little heed to established international protocols—evident in Japan, the Philippines, and, most recently, in India. The country's bellicose incursions in

the Indo-Pacific are challenging US geostrategic supremacy in the region. Working in tandem with India to improve its capacity to play a stronger role in the region and uphold the existing liberal order, would be a critical stride for US grand strategy.

This paper will assess how the prospective sale of US fighter jets to India will contribute to empowering India to achieve greater "command of the commons," considering Barry Posen's framework.² In Posen's analysis, he referred to an unparalleled US dominance in the domains of "space, sea, land and air." This report focuses on the air component, as well as the broader strategic landscape pertaining to India's quest toward its purchase of its Medium Multi-Role Combat Aircraft (MRCA). The development of this aircraft is critical to the grander modernization of the Indian Armed Forces (IAF), which has long been a strategic priority of that country's leadership.

Recently, the future of the MRCA has been uncertain, because of the competing imperatives of "Make in India" and "Make America Great Again," and the policies that have been implemented and touted under these frameworks. The report argues that these frameworks are complementary, rather than contradictory, in the context of greater US-India strategic convergence in the Indo-Pacific.

1 White House, "National Security Strategy of the United States," December 2017, <https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf>.

2 Barry Posen, *Command of the Commons: The Military Foundation of U.S. Hegemony* (Boston: MIT Press Journals, 2003), vol. 28, no.1, <http://web.mit.edu/SSp/people/posen/commandofthecommons.pdf>.

INTRODUCTION

Within the last five years, China's regional ambitions have become a serious security concern for both India and the United States. Since its economic liberalization, China's expanding economic influence has seen it rival the United States as the most important trade partner for many countries, especially in Asia. China's economic ascension has been accompanied by its leadership's increasing aversion to following established international protocols. Specifically, Beijing's development of islands in the South China Sea presents security challenges to the United States and its regional allies. China's advancements in the Indian Ocean Region (IOR)—and, more specifically, the China-Pakistan Economic Corridor (CPEC)—raise alarms. India does not consider China's engagement in South Asia to be altruism aimed at bolstering Pakistan's economy, but instead a strategic ploy intended to expand Beijing's sphere of influence.³ The rise of China has directly challenged the legitimacy and reality of US supremacy—in the South China Sea, in the Asia-Pacific, and in the broader region. This is not helped by the fact that, since these incursions began, China has paid little heed to any international court ruling that has not gone its way. The June 2017 standoff in Doklam demonstrated the extent to which the history of bilateral disputes between the two nations has not been resolved and offers potential for military conflict. Most recently, the political turmoil in the Maldives demonstrated the extent of Chinese influence in that country, and the nexus that smaller, poorer South Asian countries occupy in the context of an emerging struggle for regional influence between China and India.

At an October 2017 event on the growth and future of US-India ties, former US Secretary of State Rex Tillerson spoke publicly about China's regional incursions. Tillerson rebuked the Asian power for subverting the global order, undermining the sovereignty of its neighbors, and being prone to predatory economic policies, which are of grave concern to both India and

the United States. In Tillerson's words—said during the same address, which occurred in the context of the US shift in strategic focus from the Asia-Pacific to the Indo-Pacific—both nations are set to become the joint “beacons of the Indo-Pacific.”⁴ Since then, the US government enshrined this greater focus on the region in its 2017-2018 National Security Strategy (NSS), which stated, “A geopolitical competition between free and repressive visions of world order is taking place in the Indo-Pacific region...The U.S interest in a free and open Indo-Pacific extends back to the earliest days of our republic.”⁵ This grand strategic preference, embodied in the existent liberal international economic order, is being increasingly challenged across the region by projects under China's BRI framework. In the Indian Ocean Region, the set of projects posing the greatest threat is CPEC, which seeks to bolster Sino-Pakistani cooperation, as well as Chinese influence over trade routes and critical hard-infrastructure developments in the Indian Ocean.

From New Delhi's perspective, CPEC is meant to offset China's excess capacity and encircle India. Excess Chinese labor will be used to build CPEC-related infrastructure.⁶ Chinese financial institutions will extend high-interest loans to Islamabad. And, when completed, the port of Gwadar and connecting roads will provide China with the necessary bases its navy needs to potentially confront India in the future. External observers have called this Chinese-led development just one facet of a Chinese “string of pearls” agenda, to build a network of military and commercial interests along its sea lines of communication, and to become the preeminent power in the Indian Ocean. Additionally, as documented in the 2017–2018 United States NSS, “China has mounted a rapid military modernization campaign designed to limit U.S. access to the region and provide China a freer hand there.”⁷

It is on these bases that Beijing's growing presence presents a security threat to India's sphere of influence

3 Daniel Markey, “Why the China-Pakistan Economic Corridor Will Worsen Tensions in Southern Asia,” *War on the Rocks* (blog), Texas National Security Network, September 28, 2017, <https://warontherocks.com/2017/09/why-the-china-pakistan-economic-corridor-will-worsen-tensions-in-south-asia/>.

4 Rex Tillerson, “Defining Our Relationship with India for the Next Century,” speech delivered at Center for Strategic and International Studies, October 18, 2017, <https://www.csis.org/events/defining-our-relationship-india-next-century-address-us-secretary-state-rex-tillerson>.

5 White House, “National Security Strategy of the United States.”

6 Salman Rafi Sheikh, “CPEC Turns into a Chinese Albatross on Pakistan's Neck,” *Asia Sentinel*, December 1, 2017, <https://www.asiasentinel.com/econ-business/cpec-chinese-albatross-pakistan-neck/>.

7 White House, “National Security Strategy of the United States.”

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in the Indian Ocean Region. It is critical that offsetting such security risks remains a strong facet of US-India collaboration. This collaboration must permeate further into the spheres of defense and security, as well as into intelligence, surveillance, and reconnaissance. One of the key areas where India can benefit from the United States is via the latter's sophisticated, deep technological expertise. This will provide India a better position in the Indo-Pacific, not only to address its own security interests, but also to complement US security interests for the broader peace and stability in the Indo-Pacific.

Several initiatives are providing solid frameworks for the growth of this relationship—most notably, the Quadrilateral Security Dialogue, which consists of Australia, Japan, India, and the United States—but the US-India relationship can, and will, grow independently of multilateral groupings. One of the key aspects is strengthening India's military capabilities. The Indian Navy must be advanced for India to be able to project power in the Indian Ocean Region. In attempting to further consolidate India's progress toward blue-water-navy status, it is crucial that this collaboration intensify. The likelihood of greater naval cooperation within the Quadrilateral Dialogue, as well as between the United States and India, is high in context of India's

senior political and military officials being in favor of such an engagement.⁸ Additionally, this cooperation would play into India's own objectives of "playing the role of a 'leading' instead of a 'balancing' power in Asia," an agenda outlined by former Foreign Secretary Subrahmanyam Jaishankar in March 2015.⁹

Thus, given that both countries have seen convergence "on their approach towards Beijing...both nations realize the need to ensure that Beijing behaves in accordance with the rules of the liberal, postwar institutional order."¹⁰ Specifically, "there are three main areas where the United States could help itself by assisting India in improving its capabilities to dominate the commons in the Indian Ocean Region. They are: carrier aviation, space surveillance, and cyber."¹¹

In going forth with this cooperation, it is important for US policymakers to note that "Post-independent India has always viewed itself as one of the world's five major centers of civilization and a key manager of the global order."¹² Building capacity, then, is the issue in taking the US-India partnership to a new level. The United States could do this most effectively by providing India enhanced means to command the commons in the Indian Ocean Region.¹³

8 Keith Johnson and Dan De Luce, "Spooked by Beijing, India Embraces Closer US Ties," *Foreign Policy*, May 2, 2016, <http://foreignpolicy.com/2016/05/02/spooked-by-beijing-india-embraces-closer-u-s-ties/>.

9 Bharath Gopalswamy and Jon Huntsman Jr, "Transforming India from a Balancing to a Leading Power," *National Interest*, April 14, 2015, <http://nationalinterest.org/feature/transforming-india-balancing-leading-power-12624>.

10 Bharath Gopalswamy and Manish Tewari, *Transforming India from a Balancing to a Leading Power* (Washington, DC: Atlantic Council, 2017), http://www.atlanticcouncil.org/images/publications/Transforming_India_from_a_Balancing_to_Leading_Power_web_0622.pdf.

11 Gopalswamy and Huntsman, "Transforming India from a Balancing to a Leading Power."

12 Ibid.

13 Barry R. Posen, "Command of the Commons: The Military Foundation of U.S. Hegemony," *International Security*, Vol. 28, No. 1 (Summer 2003).

INDIA'S QUEST FOR FIGHTER JETS

China's bellicose incursions in the Indo-Pacific are challenging US geostrategic supremacy in the region. Consequently, improving India's capacity to play a stronger role in the region would play a critical role in US grand strategy.

The four domains of sea, air, space, and cyber are the foundation of present US hard military power-projection capabilities.¹⁴ The United States can restrict the capacity of rivals to operate in these spaces. The United States also has global primacy in the domains of carrier aviation, space surveillance, and cyber; US-built electromagnetic aircraft launch systems (EMALS) are the most advanced launch systems in the world. In October 2017, the Donald Trump administration announced that the EMALS system would be provided to the carrier being built by the Indian Navy. Similar cooperation in the other domains is needed quickly, to consolidate a stable relationship by allowing India to enhance its capacity in these domains and command greater influence in the Indian Ocean Region. The United States should continue to assist India's development, given the present deficits of India's infrastructural capabilities in these sectors. Those capabilities are not where they need to be to fulfill India's national aspirations as a leading power in the region.

This report focuses on the air domain, as well as the broader strategic landscape as it relates to India's quest toward its purchase of its Medium Multi-Role Combat Aircraft (MRCA). The development of this aircraft is critical to the grander modernization of the Indian Air Force. Recently, the future of the MRCA has been uncertain, because of the competing policy frameworks of "Make in India" and "Make America Great Again," and the policies that have been implemented and touted under these frameworks. The report assesses the specific fighter-jet sales in context of these broader frameworks, and argues that these frameworks are complementary, rather than contradictory, in the

context of greater US-India strategic convergence in the Indo-Pacific.

Air Power

An area of concern for the Indian administration, however, has been counterbalancing air power in the region. The Indian Air Force is operating dangerously below its minimum of 39.5 authorized squadrons.¹⁵ Presently, the IAF is undergoing a major modernization project, aiming to reach a targeted forty-two squadrons by 2032, while retiring its aging Mig-21 and Mig-27 fleet.¹⁶ To this end, the Indian Air Force has been looking for a new MRCA over the last decade and a half. India's attempt to indigenously service this requirement, via the HAL Tejas, has been met with mixed responses from both the IAF and the Indian Navy (IN). Since, the Indian military has decided to look beyond its own shores to meet this requirement, and defense manufacturers Lockheed Martin and Boeing have decided to enter the competition to meet the growing needs of both branches.

Plans for India's New MRCA

The IAF has primarily looked to meet its MRCA requirement with single-engine aircraft, whereas the IN has chosen to go the twin-engine route for new MRCAs.¹⁷ Accordingly, Lockheed Martin has positioned the newest Block 70 variant of its F-16 aircraft for the IAF, while Boeing has offered its F/A-18 Super Hornet Block III for the IN. The two aircraft have been positioned complementarily, and the purchase of the pair is an interesting proposition for policymakers from both countries. Recently, however, the Indian government has asked the IAF to consider twin-engine planes, but there has not yet been a formal change in the request for information (RFI).¹⁹ This could potentially make the F/A-18 a competitor for both the IAF and IN, if the IAF revises its RFI to include twin-engine platforms.

¹⁴ Ibid.

¹⁵ Dhiraj Kukreja, "The Rafale Merry-Go-Round," *Vayu: Aerospace Review*, no. 5, 2016, http://www.vayuaerospace.in/2016_issue5/pdf/44.pdf.

¹⁶ "IAF to Reach Full Squadron Strength by 2032: Air Chief," *Economic Times*, October 5, 2017, <https://economictimes.indiatimes.com/news/defence/iaf-to-reach-full-squadron-strength-by-2032-air-chief/articleshow/60958636.cms>.

¹⁷ Ajai Shukla, "IAF Kicks off Contest to Make Single-Engine Fighters," *Business Standard*, October 8, 2016, http://www.business-standard.com/article/current-affairs/iaf-kicks-off-contest-to-make-single-engine-fighters-116100800638_1.html.

¹⁸ Ashley J. Tellis, "The Americans Are Back: F-16 for the IAF and F/A-18 for the Indian Navy," *Carnegie Endowment for International Peace*, August 2, 2017, <http://carnegieendowment.org/2017/08/02/americans-are-back-f-16-for-iaf-and-f-18-for-indian-navy-pub-72706>.

¹⁹ Sanjeev Miglani and James Freed, "India Eyeing Boeing's Super Hornet in Latest Twist to Air Force Procurement," *Reuters*, March 15, 2018, <https://in.reuters.com/article/india-boeing/india-eyeing-boeings-super-hornet-in-latest-twist-to-air-force-procurement-idINKCNIGR07V>.

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It is critical for US policymakers to consider that New Delhi has already procured the Sukhoi fourth-generation fighter from Russia, and is entertaining the prospect of buying the Swedish-made Gripen. Additionally, India has also signed an agreement with Russia to jointly develop a fifth-generation fighter aircraft (FGFA). The project is a joint Sukhoi/Hindustan Aeronautics Limited project, which aims to design an all-new fighter for India. However, with the program's sluggish initial progress, it will still be some time before India develops its own FGFA. Hence, for some time to come, the Indian Air Force will need to rely on a fighter such as the F-16.

The United States is not the only game in town, and India has other options involving eager vendors. However, the overriding rationale for buying from the United States is that, more than a plane, India will buy a long-term strategic partner. This is a very compelling argument for New Delhi. For example, India's defense relationship with Russia is a critical component of its decades-long strategic partnership with that country. The majority of Indian defense platforms are Russian, though this is changing. Allowing for the majority of platforms to be American instead could help India and the United States to forge a comprehensive, long-term strategic and enduring partnership.

India has made it clear that any aircraft it buys will need to be manufactured in India, in a bid to encourage indigenization and technology transfer. Per India's defense requirements, all foreign aerospace companies competing for the MRCA proposal will need to form a partnership with an Indian firm to produce said planes in India. While this was envisaged to be a cause for concern, Lockheed Martin has put this issue to bed, claiming that there will be no loss of US jobs if the F-16 program shifts to India, due to the expansion of the F-35 program at the same US facility—allowing a defense relationship led by the F-16 to be an economic winner for both sides. This would allow Trump to deliver on his “Make America Great Again” campaign, while Indian Prime Minister Narendra Modi can bring fighter-jet manufacturing onshore, building upon his

Make in India policy to boost indigenous manufacturing capacity in India and increase the share of manufacturing in India's gross domestic product (GDP) to 25 percent by 2025. Meanwhile, both sides would deepen their engagement, while India shores up its defense capabilities to thwart a stronger China's advances in the Indian Ocean Region.

There is scope for enormous cooperation, based on the purchase and manufacturing of fighter jets. If pursued, such a defense deal between the two countries can help deliver on both strategic and economic fronts. If both sides agree to a deal that allows for US fighter jets to be built in India, it will likely beget additional deals. This, in turn, will help spur additional US jobs, as future parts and components will be needed. Meanwhile, India will be able to boost manufacturing employment, while a closer defense partnership will help ensure that India always has a strategic partner in the United States. Effectively, this could “strengthen America's long-term position in the region within the context of a multifaceted reorientation: that effort should include a vigorous initiative to rehabilitate key bilateral alliances...and a credible plan to compete with or at least supplement the roster of economic initiatives that China is advancing across the region.”²⁰

“India has made it clear that any aircraft it buys will need to be manufactured in India, in a bid to encourage indigenization and technology transfer.”

Why Defense Holds the Key

Bilateral defense cooperation has “shot from \$1 billion to over \$15 billion” over the last decade.²¹ Despite the potential risk of offsets, the “United States uses arms sales to enable closer partnerships and interoperability with its friends and allies,” affirming the trajectory of this relationship, as the United States continues to bank on Indian support in consolidating the Indo-Pacific region under a security architecture led by both countries.²² While the Indian government will need to make major investments for defense, which it will recoup through per-unit cash and an infusion of capital for defense, a lot of the issues surrounding the relationship would be offset by the advent of a sophisticated technology-trade agreement between the two countries. This framework

20 Ali Wyne, “The Danger of Might Without Power,” *Interpreter* (blog), Lowy Institute, February 28, 2017, <https://www.lowyinstitute.org/the-interpreter/danger-might-without-power>.

21 Joshua T. White, “What's Next for US-India Defence Ties?” *Hindu BusinessLine*, August 1, 2017, <http://www.thehindubusinessline.com/opinion/indous-ties-improve-under-modi-and-trump/article9797379.ece>.

22 Cara Abercrombie, “Removing Barriers to U.S.-India Defense Trade,” *Carnegie Endowment for International Peace*, January 10, 2018, <http://carnegieendowment.org/2018/01/10/removing-barriers-to-u.s.-india-defense-trade-pub-75206>.



Air is a critical domain that India must command. *Source:* flickr/Ejército del Aire Ministerio de Defensa España/Sergio Ruiz González

has been mooted at many official fora, notably by US Trade Representative Robert Lighthizer in October 2017, during a meeting with Minister Suresh Prabhu, India's minister of Civil Aviation, in Washington, DC.

Admittedly, defense may seem an odd place to start; after all, defense is often a sensitive issue, particularly through the prism of US-India ties. Throughout the Cold War, India procured most of its weapon systems from the Soviet Union, which, in turn, enabled Moscow to back India at crucial moments in its history as a nonaligned state. Meanwhile, Pakistan was the recipient of US economic largess and arms, including F-16 fighter jets. Relations between the United States and Pakistan prospered, as the latter supported US efforts in Afghanistan.

For India, working with the United States means unlocking sensitive defense technology. Closer economic links will translate to a relationship in which the United States will need to ensure India's well-being for its own prosperity, given India's growing significance as the most viable regional counterweight to China's increasingly bellicose overtures in the Indo-Pacific. India is also a "key component" for the United States in its

new strategy on South Asia and Afghanistan, making a strategic India-US relationship even more important.²³

However, this natural joining of forces is complicated by the divide between Make in India and the trade preferences encapsulated under President Trump's "Make America Great Again" campaign. A closer US-India partnership would benefit from increased military sales. However, under Make in India, such products will need to be made within India, which stands in stark contrast to President Trump's public statements about trade deals.

India's Interest in Jets

For a few years now, India has shown an interest in acquiring Western-developed fighter jets. Specifically, the Indian Air Force is looking to modernize its fleet, which could amount to 200-250 new jets. Meanwhile, the Indian Navy is looking to procure its own aircraft-carrier-based plane.²⁴ However, in line with Make in India, any purchases must eventually be locally manufactured, with some degree of technology transfer. Accordingly, there are two potential US platforms that could fit the bill for India's needs. The first is Lockheed

23 Jim Garamone, "President Unveils New Afghanistan, South Asia Strategy," *DoD News*, US Department of Defence, August 21, 2017, <https://www.defense.gov/News/Article/Article/1284964/president-unveils-new-afghanistan-south-asia-strategy/>.

24 Franz-Stefan Gady, "India Seeks 57 New Naval Fighter Jets for Carriers," *Diplomat*, January 27, 2017, <https://thediplomat.com/2017/01/india-seeks-57-new-naval-fighter-jets-for-carriers/>.

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Martin's marquee F-16 fighter jet, and the second is Boeing's F/A-18 Super Hornet. The two systems are not mutually exclusive, as both can be leveraged by the two branches of the armed forces.

While offshoring both the F-16 and F/A-18 assembly lines would appear to contradict Trump's promise to create more manufacturing jobs in the United States, nuances in that policy could open a window of opportunity.

The F-16s and the F/A-18 Super Hornets manufactured in India would not be sold to the United States. The F-16 production line will be used to service the orders from the Indian Air Force, as well as any follow-on international orders. The US Air Force has not bought an F-16 since 1999, and is transitioning its multi-role fighter force to the F-35. So, any additional F-16 orders would be for non-US customers. Due to a reduction in purchases for the fighter jet over the last decade, hundreds of jobs have been threatened among the suppliers of various F-16 parts.

Without further international orders, the F-16 production line—currently in Greenville, South Carolina—would ultimately need to shut down. Lockheed Martin reports that about eight hundred US workers will get to keep their jobs supplying various components and spare parts to the production line in India. So, an India partnership presents a way to sustain F-16 production, with all the economic and strategic benefits that result.

The F/A-18 Super Hornet production line would also be used to service orders for the Indian Navy, with all US orders manufactured in the United States. Despite the shift of production lines, there is a considerable work-share component in the proposals by Lockheed Martin and Boeing, which would present a reasonable case for setting up production lines in India, despite the obvious hindrances that such an operation would ordinarily pose for a foreign investor.

Presently, around sixteen thousand people are involved in the F/A-18 program. Major production hubs for the fighter in the United States, most notably St. Louis, benefit enormously from foreign sales of the jet. US Representative Ann Wagner, R-Ballwin, said in 2016, "These jets are also critical to the St. Louis manufacturing base and support 5,000 families whose loved ones build these jets, as well as thousands of additional

jobs across Missouri." These jobs are largely in the skilled-manufacturing sector.

Meanwhile, Lockheed Martin plans to move its entire F-16 production line to India, with the Fort Worth, Texas, facility solely used for F-35 production. Due to the rapidly growing F-35 program, Lockheed Martin claims that there will be no loss of jobs, as the entire facility will shift to

manufacturing F-35s. In addition to production for use by the Indian Air Force, Lockheed Martin plans to produce aircraft, spares, and components for international orders in India. This will give India an opportunity to participate in the huge global upgrade and modernization programs of current F-16 users, numbering more than three thousand aircraft worldwide—including a large user base in the Indo-Pacific itself, with Singapore, Taiwan, and Thailand operating large fleets of the aircraft. Currently, at least five countries are seriously considering a first-time purchase of F-16s. If the sale of aircraft to India is finalized in time, Lockheed Martin will also be supplying these international

orders from the India production line.

The Balancing Act in the Sky

President Trump has promised to add 1,800 jobs to the Fort Worth area through the Lockheed Martin plant, signaling that the F-35 aircraft will be a key object of focus for the US Air Force. In another positive development for the company, Republican Representative Kay Granger, who represents the Fort Worth district where the Lockheed Martin plant is located, was named chair of the House Appropriations Defense Subcommittee in January. Several other countries have shown interest in the F-35 program. It already has eight international partners, with other countries—such as Germany, Finland, Singapore, Taiwan, Saudi Arabia, and the United Arab Emirates—looking at the fifth-generation fighter as a prospective purchase.

These signs collectively signal that the Fort Worth facility will increase the number of people it employs, despite Lockheed Martin's plans to shift the F-16 production line to India. In the coming years, Lockheed Martin will hire hundreds of new personnel, who need to undergo a lengthy training process in the context of ramped-up F-35 production. This opens the door for the assembly line to shift to India, with minimal political fallout.

“While offshoring both the F-16 and F/A-18 assembly lines would appear to contradict Trump’s promise to create more manufacturing jobs in the United States, nuances in that policy could open a window of opportunity.”



An F-16 Fighting Falcon, 510th Fighter Squadron, deployed to Krzesiny Air Base, Poland, in support of Aviation Detachment rotation 17-3, exercise BALTOPS and exercise Saber Strike flies over Latvia, June 7, 2017. *Source:* U.S. Air Force/Staff Sgt. Jonathan Snyder

In other words, moving the assembly line to India solely for Indian purchases is a win for US jobs, if suppliers remain in the United States, due to technology-control decisions and commonality with the F-35.

Making “the F-16” in India

India’s allotted defense budget for the 2017-18 fiscal year is \$53.5 billion, an increase of about 6 percent from the previous year.²⁵ However, the more important figure is that of capital expenditure for defense. This figure has gone up 9 percent from last year, and has been earmarked for the armed forces’ planned defense-modernization projects. This trend of increasing capital expenditures is expected to continue for years, with India looking to renovate its aging military. The modernization budget for the IAF alone is up nearly 18 percent from last year’s expenditure, which signifies

India’s intent. However, the overall defense budget is unlikely to increase in the short term, and the discretionary portion of the annual defense budget is insufficient for capability acquisitions and associated tasks.

India’s ambition to transform itself into a leading power in the region is demonstrated in its naval Five-Year Plan. The actualization of this geopolitical objective has been hindered by the fact that the Indian Defense Ministry has termed the plan “unrealistic (in context) of projected national growth and spending power.”²⁶ Consequently there will be a burden on Washington to ensure that this very important bilateral relationship continue to gain strength and traction. Proposed initiatives, such as the Asia Pacific Stability Initiative, are effective ways “to signal the United States’ intent towards India...and could be a starting point for further India-US engagement in the years to come.”²⁷

25 Laxman K. Behera, “India’s Defence Budget 2017-18: An Analysis,” *Institute for Defence Studies and Analyses*, February 3, 2017, <https://idsa.in/issuebrief/india-defence-budget-2017-18>.

26 Manu Pubby, “Defence Ministry Blocks Navy’s ‘Unrealistic’ Five-Year Acquisition Plan,” *Print*, September 13, 2017, <https://theprint.in/national-security/defence-ministry-blocks-navys-unrealistic-five-year-acquisition-plan/9928/>.

27 Bharath Gopalaswamy and Manish Tewari “Transforming India From a Balancing to a Leading Power,” Atlantic Council, June 22 2017, http://www.atlanticcouncil.org/images/publications/Transforming_India_from_a_Balancing_to_Leading_Power_web_0622.pdf

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If the Fort Worth facility is to be completely taken over by the F-35 project, there will be no loss of jobs from shifting F-16 production to India. The increasing orders and backlogs for the F-35 project have led to an expansion of the Fort Worth facility; the F-35 project alone was responsible for generating 23 percent of Lockheed Martin's total revenue in 2016.²⁸ The US Air Force declared operational readiness for the F-35, and is expected to order around 1,700 aircraft in the coming years. There have been plenty of international orders for the F-35 as well, with Japan ordering forty-two, Italy ordering ninety, and Denmark ordering twenty-seven aircraft. Canada, which has not committed to buy the F-35 to date, has paid to be a partner in the program, and remains one to this day. Other buyer nations include Israel, Japan, South Korea, and, potentially, Singapore. The net sales for the aeronautics division increased by 14 percent in 2016, by a figure of \$2.2 billion—of which \$1.7 billion, a whopping 77 percent, came from increased sales of the F-35.²⁹

The F-16 continues to be a source of revenue for Lockheed Martin, with significant lifecycle service and upgrade orders, as well as new purchases. The service orders for the F-16 grew by approximately \$250 million from 2015 to 2016. The volume of backlogs indicates that Lockheed Martin will create more jobs soon. Eight F-16 aircraft are in backlog for 2017, which is exactly two-thirds of all F-16s delivered in 2016. South Korea

Backlogs of the Lockheed Martin Aeronautics Division for the Past Three Years

2014	2015	2016
\$2.76 billion	\$3.18 billion	\$3.42 billion

“The F-16s assembled in India will continue to have their major components supplied by American companies, supporting jobs in the United States.”

has already awarded Lockheed Martin a lifecycle extension order, which will continue well into 2020.³⁰ The backlogs for the aeronautics division have continued to increase, signaling that jobs in Lockheed's US aeronautics plants are here to stay.³¹

The F-16s assembled in India will continue to have their major components supplied by American companies, supporting jobs in the United States. As part of the agreement, the supply chain for most F-16-unique components will shift to India over the decade, though many other parts will be manufactured in the United States. Major components include the F110 engine, manufactured by General Electric Aviation, and the preferred engine for most F-16s. Each engine costs approximately \$5 million. Considering the Indian Air Force is expected to order approximately two hundred F-16s, this would raise a demand for approximately

450 engines, including spares, which would amount to \$2.25 billion in revenue for General Electric.³² This does not factor in the requirement for additional orders to increase the lifecycle of the engines once in place, or the need for spare engines down the road. Similarly, the cost of a Northrop Grumman SABR radar—an essential for the Block 70 variant of the F-16 that India is buying—costs nearly \$2.15 million per radar. If one were to estimate an order of approximately 250 radars required, including spares, the contract for the radar's installation and service might go up to \$550 million for Northrop Grumman from India alone. India is likely to order armaments such as the AGM-65 Maverick, which is used on both the F-16 and the F/A-18, as most international customers prefer this missile.³³ Most aircraft can carry six of these Raytheon-manufactured missiles, which cost approximately \$50,000 per missile. Though the F-16 will be manufactured exclusively in India, these sizable component orders will still go a long way toward bringing

28 Brian Matthews, “Lockheed Martin Corp.: Soaring High with its F-35 Fighter Jet,” *Dividend.com*, November 29, 2017, <http://www.dividend.com/news/2017/11/29/lockheed-martin-corp-soaring-high-with-f35-fighter-jet/>.

29 Lockheed Martin, “2016 Annual Report: Lockheed Martin Corporation,” December 28, 2017, <https://m.lockheedmartin.com/content/dam/lockheed/data/corporate/documents/2016-annual-report.pdf>.

30 Scott Nicholas, “Lockheed to Extend Support for South Korea's Tactical Reconnaissance Aircraft, Mission Equipment.” *ExecutiveBiz* (blog), January 2, 2018, <http://blog.executivebiz.com/2018/01/lockheed-to-extend-support-for-south-koreas-tactical-reconnaissance-aircraft-mission-equipment/>.

31 Evan Hoopfer, “Lockheed Martin Gears Up for Increased Production of F-35 in Fort Worth,” *Dallas Business Journal*, June 7, 2017, <https://www.bizjournals.com/dallas/news/2017/06/07/lockheed-martin-f-35-fort-worth.html>.

32 Franz-Stefan Gady, “Is India Buying 200 F-16 Fighter Jets?” *Diplomat*, January 4, 2017, <https://thediplomat.com/2017/01/is-india-buying-200-f-16-fighter-jets/>.

33 GovTribe, “Federal Contract Opportunity: Maverick AGM-65 Missiles for Foreign Military Sales (FMS),” June 23, 2017, <https://govtribe.com/project/maverick-agm-65-missiles-for-foreign-military-sales-fms>.



An Su-30MKI line-up and Eurofighter Typhoon landing in the background. At Ex- Indradhanush, Kalaikunda Air Base, West Bengal.
Source: flickr/Jaskirat Singh Bawa

business to many US defense companies and supporting jobs in the United States. It is also important to note that nearly 50 percent of the F-16 supply base is common to the F-35. With the F-16, the F-22, and now the F-35, Lockheed Martin and its global supply base command the lion's share of fighter-aircraft-systems manufacturing for the future. Thus, the F-16 deal gives India's industry an opportunity to become part of the world's most successful fighter-supply base for thousands of aircraft, while reaping the benefit of technology sharing with the world's most advanced fifth-generation aircraft for decades.

Since 2011, Lockheed Martin has already participated in a joint venture with TATA Advanced Systems Limited (TASL). This successful joint venture is now the world's sole supplier of C-130 empennages, and has already delivered more than eighty empennages and twenty-eight center-wing boxes from Hyderabad—all on target for price, quality, and schedule.

Enhancing Indian Capabilities

The F-16 Block 70 version is being offered for sale to the Indian Air Force in response to the RFI for a Medium Multi-Role Combat Aircraft (MRCA). India needs to replace an aging fleet of Russian MiG-21 aircraft, which the IAF is retiring at rapid rates. The Indian Air Force has thirty squadrons currently commissioned, its lowest number in the last decade. The retiring of MiG aircraft will further deplete eleven squadrons over the coming years. The IAF faces a current requirement of ninety aircraft, and that number is expected to increase

to about two hundred due to the MiG-retirement program. These numbers signify the immense opportunity that both planes could fulfill the IAF's major modernization ambitions.

With Indian defense priorities shifting from Pakistan and toward China, the IAF is seeking an aircraft that will provide it greater strategic reach. India has highlighted the need for the use of electronic warfare (EW) equipment aboard its MRCAs, to balance current Chinese superiority in this domain. The Block 70 variant boasts one of the most modern EW capabilities, and pilot capabilities that are vastly better than those of the F-16s owned by Pakistan, and a worthy match in the skies against China. The fifth-generation Northrop Grumman AESA radar, which is slated to be part of the Block 70 variant offered to India, comes from a family of highly successful radars used on the F-22 as well as the F-35, ensuring that the F-16 has the most modern avionics aboard its trusted frame.

The F-16 is a combat-proven platform. Even though the manufacturing of the aircraft began in the 1970s, the newer variants are some of the most advanced fighters in the skies, despite minimal modifications to the plane's basic airframe of the plane—indicating the platform's robustness. The F-16 has a long-standing reputation for being one of the safest aircraft in the sky, with an impeccable operational history across multiple continents. Lockheed Martin will also add a collision-avoidance system onboard the variant offered to India, enhancing pilot safety.

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Lockheed's partnership with TATA also ensures that there is a defense supplier with a proven track, not only for the Indian Air Force and Indian Navy, but for other militaries as well, through partnerships with Lockheed Martin, Boeing, and Sikorsky.

Lockheed has also successfully engaged with the Indian government on a multitude of programs over the years. Lockheed Martin has been a supporter of the Modi administration's Startup India program. It funds the India Innovation Growth Programme, which has fostering entrepreneurship in India since 2007. The decision to purchase either aircraft for the Indian Air Force will be based as much on the manufacturing and job-creation aspects as the capabilities of both fighters.

The Twin-Engine Jet

Over the course of the last decade, China has invested heavily in a robust naval-modernization program, to serve its ambition of regional maritime dominance. Accordingly, Beijing has expressed its intention to deploy four aircraft carriers, and has recently exhibited its ability to indigenously develop these vessels.

Acknowledging this threat, India has decided to ramp up its naval arsenal to balance China's growing influence and has laid down ambitious long-term plans to match the Chinese naval presence in the region. A focus of this modernization plan is India's aircraft-carrier program.

India recently commissioned its new aircraft carrier, the INS Vikramaditya, a refitted Russian hybrid carrier-cruiser. It also expects to fully commission a new, indigenously built aircraft carrier, the INS Vikrant, by 2023, and has laid down plans for the INS Vishal, which will be India's largest, and first nuclear-powered, aircraft carrier.

The INS Vikramaditya sports the STOBAR takeoff-and-landing mechanism, which was initially thought to make most US and European fighters unusable—including the Boeing F/A-18 Super Hornet, which is compatible with a CATOBAR mechanism. However, Boeing claims its research shows that the Super Hornet is

suitable for takeoff from STOBAR-equipped ships, such as the INS Vikramaditya, and can perform optimally on such ships.³⁴ This claim, if validated through testing by the IN, will make the Super Hornet suitable even for the first Indigenous Aircraft Carrier (IAC-I), INS Vikrant, which is currently under development and will be commissioned soon. This puts the F/A-18 platform in competition against the MiG-29K, a rotary-wing aircraft, for being deployed onboard the INS Vikrant.

Boeing's association with the Indian Navy will have longer-term benefits for the United States as well. The soon-to-be-commissioned INS Vishal will feature the CATOBAR takeoff-and-landing mechanism. India has already signed an agreement with the United States to form a carrier working group, to seek areas of cooperation on aircraft-carrier development. If existing Indian aircraft deploy the F/A-18, then it would be natural for India to develop the INS Vishal and any additional carriers with CATOBAR—not EMALS—in conjunction with the United States, per the cooperation agreement. The MiG-29K has no experience being deployed onboard a CATOBAR-equipped aircraft carrier, limiting the choice to US and European fixed-wing aircraft, and making the Super Hornet a strong competitor. The Indian Navy "has requested a carrier based multi-role fighter for the [INS] Vishal, and is set to acquire 57 platforms for its deck. While previous carriers relied heavily on the Russian MiG-29K for combat roles, a platform designed for the Soviet Union's own STOBAR dependent carriers, India's induction of its first CATOBAR capable carrier has allowed the navy to choose from a far wider range of fighter platforms."³⁵

Boeing and India have a fruitful relationship, owing to India's purchase of eight P-8I Neptune long-range aircraft, in a deal worth \$2.1 billion. Boeing has also provided India with the Apache and Chinook helicopters, parts of which have been manufactured in India as part of a joint venture with Indian conglomerate TATA.

Like Lockheed, Boeing notes that setting up a production line in India would not be a threat to jobs in the United States. The firm will keep its St. Louis plant

“Over the course of the last decade, China has invested heavily in a robust naval-modernization program, to serve its ambition of regional maritime dominance”

34 “F18s Compatible With Indian Naval Carrier Fleet: Boeing,” *Business Standard*, August 28, 2017, http://www.business-standard.com/article/news-ians/f18s-compatible-with-indian-naval-carrier-fleet-boeing-117082800802_1.html.

35 Abraham Ait, “US and French Fighters Contend for a Place Aboard India's New Aircraft Carrier,” *Diplomat*, February 24, 2018, <https://thediplomat.com/2018/02/us-and-french-fighters-contend-for-a-place-aboard-indias-new-aircraft-carrier/>.



Secretary of Defense Jim Mattis meets with India's Defence Minister Nirmala Sitharaman in New Delhi on Sept. 26, 2017. *Source:* Department of Defense/U.S. Air Force Staff Sgt. Jette Carr

operating at current scale well into the 2020s, to service the growing number of international orders. Like the F-16, components and spares for the F/A-18 will not be manufactured in India. Furthermore, when India bought the P-8I aircraft, it leaned on both Raytheon and Airborne Systems to supply onboard components. Similarly, US-based defense manufacturers will likely see an expansion in orders and business because of the F/A-18 deal, even if the planes are built in India.

The Boeing F/A-18 Hornet is a “combat-proven,” twin-engine platform that has been in service within the US Navy for just under thirty-five years.³⁶ Considering that the F/A-18 is expected to be part of the US fleet until approximately 2040, the US Navy has requested funding for an advanced version of this aircraft in the 2018 budget. In context of this development, many American officials do not see the (Advanced) Super Hornet as replacing the F-35 jet, but see the two jets as complementary.

The Block III variant, which is also being offered to India, consists of enhanced air and wing capacities, in addition to the presence of conformal fuel tanks (CFTs) and structural adjustments to lower the aircraft's radar cross section, with improved attack-sensor angles. This development is important in the path to the RFI that the Indian Defence Research and Development Organization (DRDO) released in January 2017, on specific fighter requirements in the context of India's plan to develop Advanced Medium Combat Aircraft (AMCA) by Hindustan Aeronautics Limited (HAL). This is part of India's goal to build a single-seat, twin-engine, all-weather multirole stealth fighter. The Indian Aeronautical Development Agency Development began to develop this fighter in 2008, to replace its increasingly aging fleet of MiG-23 fighters. The development of the Block III Super Hornet variant is expected to begin in March 2018, with fourteen aircraft scheduled to be produced in fiscal year 2018 (FY-18), and another

³⁶ Boeing, “F/A-18 Super Hornet,” <http://www.boeing.com/defense/fa-18-super-hornet/>.

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sixty-six from FY-19–FY-22, according to Boeing's presidential fiscal-year budget for 2018.

Weaponry and spare parts will also be easier to come by, with the Boeing jets using standard weaponry and spare parts available to all NATO countries. Boeing has signified its intent, with its top brass making an appearance in India to convince the IN to go with the Block III Advanced Super Hornet as its choice of multirole fighter for the foreseeable future, and is looking to arrive at an agreement with the Indian government soon.

It is critical to consider the cost per flight hour (CPFH) for the relevant fighter jet. In the US context, "Life Cycle Cost is...the sum of four major cost categories: (1) Research, Development, Test and Evaluation, (2) Flyaway/Production Cost of the primary system, (3) Initial Logistics Support, including support equipment and initial spares, and (4) Operations and Support of the primary and supporting elements over its life."³⁷

While it is an arduous task to gauge the CPFH of fighter jets, various sources have estimated a range of pricing for the F-18, F-16, and F-35.^{38 39}

The Deal that Opens Doors

India plans to spend approximately \$250 billion in defense-modernization deals over the next few years. Thus, advancements in one deal (like the F-16 or F/A-18) can unlock subsequent purchases in other areas, involving the same company.

For example, in 2015, India signed a deal with Boeing, purchasing the Apache and Chinook helicopters in an agreement worth \$2.5 billion. The finalization of this deal took considerable effort and time on Boeing's part, but it is believed that one of the deal's tipping points was Boeing's decision to have a joint venture with TATA Advanced Systems for the manufacturing of various

parts for these helicopters. This deal led to the Indian government also signing an agreement with the US administration to procure various technology related to the use of the helicopters, worth approximately \$500 million. To equip these helicopters, India has expressed its intent to buy Hellfire missiles from the United States as well.

Similarly, Lockheed Martin sold India six C-130J Super Hercules transport aircraft in 2008, in a deal worth \$1.06 billion. Satisfied with the performance of the Hercules, the Indian government signed a deal to buy an additional six aircraft in 2013. Lockheed Martin also develops various parts for the C-130J in India, through a joint venture with the TATA group. Sikorsky, a Lockheed Martin-owned company, has also had significant successes manufacturing in India. Sikorsky, in partnership with TATA Advanced Systems, has been manufacturing a number of components for its S-92 helicopter from India for its US assembly plant since 2010. The Sikorsky Seahawk has also been selected by the Indian Navy as a multi-role rotorcraft of choice.

“India plans to spend approximately \$250 billion in defense-modernization deals over the next few years. Thus, advancements in one deal (like the F-16 or F/A-18) can unlock subsequent purchases in other areas, involving the same company.”

The Indian Navy has filed an RFI for fifty-seven multi-role combat aircraft to go onboard the carriers of the Indian Navy, including the two IACs under development. The navy is looking for complete support from whichever aircraft supplier it chooses, including maintenance, training, and logistical solutions. The navy is said to be willing to pay \$15 billion for the fifty-seven aircraft, which would be a massive deal for Boeing.⁴⁰ Additionally, this deal could easily double over the next few years, with the navy looking to set up two new fixed-wing aircraft squadrons. The IN recently paid \$2.1 billion for eight Boeing P-8I Neptune aircraft, and has signed another contract worth \$1 billion for another four Neptunes, showing it is willing to fork out the money when the need arises. Additionally, on June 20, 2017, the navy awarded Boeing an additional three-year maintenance contract for complete

³⁷ Air Force Contract Augmentation Program (AFCAP), Navy Visibility and Management of Operating and Support Costs (VAMOSOC)

³⁸ Ibid.

³⁹ Kyle Mizokami, "The F-35 is About to Get a Lot Cheaper. Sort Of," *Popular Mechanics*, July 11, 2016, <https://www.popularmechanics.com/military/weapons/a21776/f-35-cheaper/>.

⁴⁰ "Indian Navy Gets Quotes From 4 Jet Makers for \$15 Billion Naval Fighter Deal," *Sputnik International*, May 31, 2017, <https://sputniknews.com/military/201705311054159694-india-navy-deal-naval-fighter/>.

support of the Neptunes, an indicator of the earnings Boeing could accrue through maintenance of this huge fleet.⁴¹

The F/A-18 deal would also benefit other US defense suppliers. Approximately 125 GE-414 Turbofan engines would be needed to service the current request. These engines would bring approximately \$450 million in revenue for GE, which will continue to produce in the United States. The F/A-18 Super Hornets are

equipped with the new Raytheon AN/APG-79 radar, which costs about \$2.8 million per unit. The F/A-18 also has a Raytheon-built targeting pod, which is priced at around \$3 million per unit. If Boeing signs this deal, Raytheon stands to earn about \$350 million in revenue—not counting any additional money for armaments—which will also produce jobs in the United States. These figures are likely to at least double over the next decade, thanks to the second squadron being raised for the Indian Navy.

⁴¹ "Boeing Wins Three-Year Contract for Indian Navy P-8I Upkeep," *Naval Today*, June 20, 2017, <https://navaltoday.com/2017/06/20/boeing-wins-three-year-contract-for-indian-navy-p-8i-upkeep>.

CONCLUSION

In conclusion, the future of defense convergence between the United States and India, in the context of their present administrations' frameworks, is positive rather than negative. It is crucial for both nations to identify potential bottlenecks, and constraints on enhanced military convergence, in the short, medium, and long terms. This convergence goes beyond the sale of aircraft to the sphere of naval cooperation, in the context of rising multilateral frameworks that are consolidating in the face of bellicose Chinese excursions in the Indo-Pacific. Since China's economic ascent, it has increasingly acted as a bellicose actor in the region. Despite efforts to socialize China into the existent liberal international economic order, its incursions in the Indo-Pacific and South China Sea demonstrate the extent to which it is a wild card, of which the United States is wary. Subsequently, US grand strategy must seek to empower India with command of the commons in its neighborhood, to push back against these incursions and preserve the existent maritime and strategic order.

This report has assessed the extent to which the sale of fighter jets to India is one of the most optimal ways to boost this strategic convergence. The sale of the F-16 and the F/A-18 will serve several purposes for India and the United States. The aircraft will both buoy the services and aid India in counterbalancing Chinese air power in the Indo-Pacific. It will also be a significant advancement in the strategic partnership between India and the United States, in addition to opening the

door to several other defense-partnership and technology-transfer agreements between the two.

In keeping with President Trump's "America First" policy, outlined in his inaugural address, defense cooperation between the United States and India must primarily follow the logic of US economic and national security interests. However, as President Trump outlined in Davos in January 2018, "America First does not mean America Alone." Fortunately, with enough points of economic convergence in pending bilateral defense transactions, it seems unlikely that short-term political considerations will stymie long-term prospects.

Many mutually beneficial compromises can be reached over the manufacture of US defense platforms in India, which would meet Prime Minister Modi's manufacturing objectives while facilitating critical high-technology transfers. Additionally, both countries would consolidate their defense partnership within the framework of a resurgent Quadrilateral Dialogue, to secure open seas and an ecosystem conducive to pluralism in a volatile region. India's new Make in India set of policies has two goals. First, it aims to court additional foreign direct investment (FDI), supporting India's overall balance of payments by offsetting current account deficits, and to maintain healthy macroeconomic fundamentals. The second goal of the initiative is to create the jobs needed by the ten million Indians who enter the workforce every year.

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