India's Military Aviation Market

Opportunities for the United States

Amit Gupta

What are India's future aviation requirements and what political, military, and economic opportunities do they present to the United States? Three factors are important in understanding these two phenomena:

- Indian policy makers are beginning to think in terms of projecting power extra-regionally and, therefore, are investing in the weapons systems necessary to achieve this objective.
- The US-India relationship is changing, and the transfer of technology is becoming a central part of the transformed relationship.
- India's economy is shifting from a Soviet-style command economy to a modern economy, and this is starting to impact on the procurement and development of weapons systems.

In this context, examining the Indian aviation market provides a better understanding of what are the opportunities and challenges in the broader US-India strategic relationship.

Background

As India moves toward becoming an extra-regional power, it has begun putting more muscle into its military aviation. Indian security interests require power projection beyond South Asia and into the Indian Ocean littoral and Central Asia. Further, Indian analysts view China as a long-term security concern and, therefore, see the need to develop a robust deterrent against that country; this requires enhancing both the conventional and the nuclear capabilities of India's armed forces. Logically, airpower becomes an integral part in developing an extra-regional capability. Coupled with this development is

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a recognition of the changing nature of warfare. The Indian armed forces were loath to use airpower as part of their counterinsurgency strategy, for reasons discussed below. Recently, however, they have begun to shift from this position and seek to build a counterinsurgency air capability.

To create this extra-regional capability, the Indian armed forces are modernizing the air components of each service. The Indian air force (IAF) has added air refueling tankers and an airborne early warning (AEW) system to its fleet. When coupled with the long-range Su-30 multipurpose fighter, the force is emerging with a significant capability in the Indian Ocean region. Indian naval aviation is expected to be enhanced by the acquisition of the *Admiral Gorshkov* carrier, which will permit the Indian navy to have a more effective air capability. The Indian army is also seeking to build up its own air arm. Additionally, India requires new light and medium helicopters, a medium-range combat aircraft, new reconnaissance planes, and an advanced AEW capability. What we have, therefore, is a large Indian military aviation market waiting to be tapped by every major arms producer in the world.

The requirements for new weapons systems are taking place within the context of the political and economic shifts that have come about in India in the past decade. India's market reforms have started to slowly dismantle a Victorian-era bureaucracy and a Soviet-style command economy. Politically, India has moved towards a more positive relationship with the United States—one that has opened the possibility for increased military cooperation between the two countries.

Until recently, the bulk of Indian aircraft procurements were from Russia (or the erstwhile Soviet Union), but now the Indians are seeking to move towards a more diversified procurement strategy. This creates a major opportunity for the United States to sell weaponry to India, thus not only cementing the emerging strategic relationship with the country, but also bringing lucrative business for American arms companies. Getting India's business, however, requires thinking proactively and understanding what the Indian market wants, what makes the Indians suspicious about the United States, and how the United States can help the Indians think about what their future threat environment will be like.

The Development of Indian Airpower: Rationale, Acquisition, and Production Trends

The development of Indian airpower—both land-based and maritime—was based on the Indian leadership's nationalistic vision and on the supply and resource constraints that the country faced in the attempt to build up its military capability. India's national leadership decided in the 1950s to build a domestic aviation industry from scratch. Thus, the Indian government decided to design and develop a primary piston-engine trainer, a subsonic jet trainer, and a supersonic fighter. Jawaharlal Nehru, India's first prime minister, wanted India to become one of the most technologically advanced countries in the world, and this included the development of a modern arms industry.[1]

Early Indian efforts to domestically produce aircraft led to mixed results. The piston-engine trainer and the jet trainer were put into service but only after developmental and production delays. This led India to procure emergency batches of TS-11 Iskra trainers from Poland. The supersonic jet fighter (the HF-24 Marut) was put into service in 1964 after considerable delay but never reached supersonic speed and was technically obsolete by the time it finally entered service.[2] The program was eventually abandoned in the 1970s when an attempt to put an afterburner on the plane ended in a fatal crash.

The reasons for this dismal performance lay in resource, technological, personnel, and bureaucratic constraints. India was a developing country seeking to build advanced fighter planes at a time when it lacked the experienced personnel, the industrial infrastructure, and even the basic machine tools to successfully carry out such a program. Further, the Indian government was loath to provide scarce resources for bringing such programs to fruition, depending instead on domestic industry to deliver the goods. The Indian government thus refused to pay Bristol Aero Engines the fees it required to develop the Marut's proposed engine to supersonic capability. Instead, driven by cost constraints and political agendas, the government sought to unsuccessfully collaborate with the Egyptian Helwan fighter project.

Bureaucratic constraints also affected the procurement process. The Indian armed forces viewed themselves as a professional fighting force, based on British traditions and operating within a globalized military environment. They based their requirements, therefore, on what was considered state of the art in the field of military aircraft and imposed these standards on the domestic arms industry. So instead of asking the

domestic aviation industry to build what was technologically feasible, they instead set impossible standards by asking for what was militarily desirable. Not surprisingly, the domestic aviation industry could not deliver an acceptable product.

Finally, India's defense scientists have been prone to seeking technologically ambitious as opposed to technologically feasible projects. This was seen in the 1980s when the Indian government decided to sanction the development of a light combat aircraft (LCA)—essentially a lightweight supersonic fighter to replace the IAF's aging MiG-21 workhorse.[3] The Indian arms industry had not successfully built a supersonic fighter, let alone an engine to power it, but was once again willing to take on the project. At the same time, the IAF was seeking an advanced jet trainer—a high-subsonic trainer with a weapons payload capability—and had entered into negotiations with British Aerospace for the Hawk. Building an advanced jet trainer would have been within the technological competence of the Indian arms industry but it, instead, chose to build the more complex LCA. Among the reasons given for this choice was that building the jet trainer would condemn India to "technological colonialism." India, therefore, pursued the LCA with familiar results: cost overruns, lengthy delays, obsolescence, and the inability to meet pressing air force needs for fleet replacement.[4] The IAF eventually ended up buying the Hawk, after a 20-year delay, at the cost of $5 billion to the Indian exchequer. The attitudes of the defense scientists have not changed, as they continue to demand projects that are beyond the current industrial base and technological capability of the country.

Coupled with the constraints posed by the domestic arms production and acquisition requirements were problems of suppliers and resources. As a developing nation, India's arms-procurement efforts were determined by the availability of suppliers and resources. When resources—hard currency—were available, India was able to buy aircraft from the West, most notably the United Kingdom and France. When hard currency was unavailable, it had to depend on the Soviet Union, where it was able to make purchases in Indian rupees. This led to India getting planes that did not necessarily fit its requirements or the quality that the IAF desired. India was denied the Su-24 Fencer by the Soviet Union and instead had to make do with the less-capable MiG-23BN Flogger. Spares were also a constant problem, as the Soviet Union and its successor state, Russia, were tardy in supplying them.

Even though the Cold War ended and the US-India relationship improved through the 1990s, deep-rooted suspicions remained in military and political circles alike in India about the trustworthiness of the United States as a weapons supplier. Critics liked to point out that the United States hit India with arms embargos in both the 1965 and 1971 India-Pakistan wars (although the sanctions were far more damaging to Pakistan, which was heavily dependent on US weaponry, while India had diversified its procurement), that the USS *Enterprise* was sent to the Bay of Bengal in 1971 to pressure India to halt the Bangladesh campaign, and that after the 1998 nuclear tests, India was once again a victim of US sanctions that led to significant delays in the LCA program, amongst other projects. Even now, despite significant changes in the relationship, some Indian political groups—notably the communist parties—are averse to a significant strategic partnership with the United States.[5]

Finally, US arms manufacturers did not grasp the importance of the Indian aerospace market until recently, and consequently, did not have a permanent presence in India. In contrast, the Russians, the French, the British, and even the Israelis had established permanent offices in India. In the last couple of years, however, the situation has changed as India's willingness to buy American weapons systems and the boom in Indian civil aviation have made it vital for companies like Boeing and Lockheed to set up shop in New Delhi.

Continuing Trends in Acquisition

The history of India's acquisition and production of weapons has left behind several trends that are likely to continue into the near future. One of these is the existence of a large defense production public sector that employs thousands of people. At the apex of this public sector pyramid is India's defense science base. Traditionally, defense scientists have commanded considerable political influence since, as discussed earlier, succeeding Indian governments have recognized the prestige that comes from indigenous weapons-production projects—especially in the aeronautical, space, and nuclear spheres—as well as the potential autonomy that an indigenous weapons-production capability provides. At the same time, most of India's indigenous defense projects have met with lengthy delays, cost overruns, and, when they do come to fruition, the tendency of the user

service to decline large-scale purchases because of quality questions—the Indian army recently decided to discontinue buying the Arjun main battle tank because it wanted to move on to a state-of-the-art tank.[6] Yet the Arjun spent 30 years in development and was meant to satisfy the army's requirements well into the current century.

As a consequence, India will continue to provide projects to keep its defense science base employed and ensure that its public sector companies continue to produce weapons systems. Any arms purchases that it makes, therefore, are likely to include offsets and licensed production of the weapons systems. At the same time, the poor completion and production records of the domestic arms industry will require collaborative ventures with foreign companies. India is now, for example, seeking a foreign partner to help develop the Kaveri engine for the Tejas, a power plant that has been in development for nearly three decades. Increasingly, there will be pressure to have joint development of products. In recent years India has codeveloped the Brahmos supersonic cruise missile with Russia and is seeking to jointly develop a medium-range transport aircraft as well as a fifth-generation combat aircraft with the Russians. As argued later, one step for prospective sellers may be to join such programs at the conceptual planning phase and provide critical inputs on engines, avionics, and electronics.

The other piece of historical baggage comes from the series of embargos that were placed on India during its wars with Pakistan and following its nuclear weapons tests in 1974 and 1998. These sanctions hurt the Pakistani war effort more than India's since Pakistan's arsenal was mainly of American origin while India's was a mix of Soviet and European weapons systems. India, however, viewed the embargos as an attempt at coercion, and this engendered suspicion about US motives. Matters worsened after the 1974 nuclear tests because of the technology cut-offs that set back the Indian civilian nuclear program. Residual suspicion remains in India about US motives and, therefore, there is the concern that any significant military purchases from the United States would leave India vulnerable to sanctions and coercive diplomacy in a future conflict. Eradicating this fear will be a difficult hurdle for American policy makers and aeronautical companies.

Continuing suspicion about US intentions can be seen in the lengthy and heated public debate in India about the proposed joint nuclear deal. As part of the deal, India will separate its civilian and military nu-

clear facilities and put the former under IAEA safeguards. Part of the opposition to the deal stems from concerns that India will be losing its nuclear autonomy and giving the United States a crippling control over its nuclear weapons program. In addition, the Indian Left parties are concerned that the deal would take away the foreign policy maneuverability:

> In the discussions on foreign policy and security matters, the Left has exposed the vital area of extraneous "nonnuclear" conditions inherent in the nuclear deal. The 40-year civilian nuclear agreement will put severe constraints on our independent foreign policy given the approach of the United States as reflected in the Hyde Act and the 123 Agreement. India is sought to be bound to the United States' strategic designs through the nuclear deal.[7]

The Left's opposition came despite the fact that the deal was going to remove some of the crippling sanctions that had constrained India's civilian nuclear program.

A third historical hangover comes from the traditions of the various Indian armed services. Having British traditions and British-based military doctrines, moving to an American-style force structure, doctrine, and maintenance method will prove to be a difficult but not impossible jump for the Indian armed forces and, in real terms, may also be considered unnecessary. Achieving organizational and cultural change will, therefore, require a broader debate in Indian political and military circles (that is currently ongoing) to determine the exact nature of the modern military doctrine that India wishes to pursue.

What is clear, however, is that all three services of the Indian armed forces are seeking to augment their air components. The army and the navy are seeking helicopters, UAVs, and in the case of the army, even tactical refuelers. But the major purchaser of aerial weapons systems will be the IAF. To understand the role of Indian airpower in a strategic perspective, one needs to discuss the issue in *purple* (joint) terms—even though that may not actually exist in the Indian case.

Airpower in Indian Strategy

The IAF's doctrine was taken from the Royal Air Force, from which it was born in 1947. The British influence continued into the post-independence era, since the first Indian chief of the air force was appointed only in 1954. Consequently, IAF doctrine was focused on World War II–related mis-

sions like strategic bombing and interdiction, and the service sought to procure aircraft that could carry out these tasks.[8]

In the 1965 India-Pakistan war, this doctrine led the IAF to target Pakistani air bases and engage in interdiction efforts. These tactics met with limited success because Pakistan based its aircraft deep inside its territory; the IAF suffered unnecessary and considerable losses in trying to attack these targets.[9] India had no forward bases along the border with Pakistan, and this allowed Pakistani ground forces to penetrate the area without Indian aerial interference. Further, there was little coordination with the army or the navy to provide air defenses to their forces.

By the 1971 war, the then air chief, Pratap Chandra Lal, decided that the IAF's mission, in descending order of importance, would be to (1) defend the airspace of the country, (2) provide air support to the army and the navy, (3) undertake strategic bombing, and (4) carry out operations like paratrooping and transport.[10]

The next major use of Indian airpower took place with the Kargil war of 1999. The Indian army discovered in 1999 that Pakistani forces had placed troops on the Indian side of the Line of Control (LOC) in Kashmir. The dispute had a long history. In the 1980s India had taken over the disputed Siachen glacier in Kashmir and, in subsequent years, shelled the Pakistani supply lines in the Neelam Valley that were used to resupply the Pakistani troops that faced the Indian troops on the glacier. In the winter of 1998–99, Pakistan placed troops in the Kargil and Dras sectors of Kashmir from where they could put pressure on Highway 1A, India's main artery into northern Kashmir, thus cutting off Indian access to Siachen.[11]

The Indian army discovered the incursion in May 1999 and responded with an artillery and infantry assault on Pakistani positions. The IAF was brought in after a 20-day delay (which led to a subsequent heated debate in India on jointness in war fighting), and the IAF saw itself thrown into a very different type of limited war. The IAF was not permitted to cross the LOC to bomb Pakistani supply lines. At the same time, it faced a hostile combat environment that it was unprepared for. The high, snow-covered mountains made target acquisition difficult, and the Pakistani troops were well bunkered in and had been supplied with a range of shoulder-fired, surface-to-air weapons. The latter made it difficult to fly in at low levels and, given that the Pakistani troops were lodged at 14–18,000 feet, the slant range of the SAMs was as high as 30,000 feet.[12] Carrying out air opera-

tions, therefore, was fraught with difficulties. The IAF tried to improvise by using a GPS and a stopwatch to make its munitions drops accurately but eventually had to use precision-guided munitions (PGM) to successfully attack targets—however, according to one source, probably no more than a dozen PGMs were used.[13] It made the IAF recognize that it needed better electronic countermeasures as well as dedicated aircraft to take out such targets in a future conflict.

In 2001, following a terrorist attack on the Indian parliament, the government mobilized its troops on the India-Pakistan border in an attempt at coercive diplomacy.[14] Both sides eventually backed down, and there were claims that the Pakistani government had threatened the first use of nuclear weapons. In Pakistan's subsequent public declaration about its nuclear weapons doctrine, it has been argued that the Pakistan army would use nuclear weapons if there were a fear of being overrun by Indian troops.[15] This led to discussion in India of how to use airpower in the future without crossing the red lines that would trigger a Pakistani nuclear response.[16] The preferred course of action, it would seem, would be to develop airpower so that strikes could be carried out with pinpoint accuracy to fulfill limited objectives rather than precipitating a full-scale conflict. Along with the need to find new approaches to regional conflict situations has been the call for an air force that can play an extra-regional role.

With the growth of India's role and stature in international affairs, there has been the call to make the Indian military more capable of extra-regional power projection. The current chief of the Indian air force, Air Chief Marshal Fali Major, described the changed strategic parameters of the IAF as follows:

> The redrawn strategic boundaries of a resurgent India, therefore, extend from the Persian Gulf to the Straits of Malacca and from the Central Asian Republics to the Indian Ocean. The enlarged strategic dimensions necessitate not only a radical change in our strategic thinking but also accentuate the role of aerospace power in the new security arena.[17]

The future threat environment has, therefore, been described as one that encompasses a range of scenarios that includes:

> To summarise, in the geopolitical, geostrategic and security environment that is likely to prevail in the 2020s, the dictates of national security would place the following demands on armed forces of the nation:

- To be prepared for a prolonged and widespread multi-front border war with China with only a remote possibility of employment of nuclear weapons.
- To be prepared for a short and intense conflict with Pakistan with the real possibility of the first use of nuclear weapons by the adversary.
- To be prepared for simultaneous conflict with both the potential adversaries acting in collusion.
- To sustain the capability to fight a prolonged low intensity conflict in Kashmir and other sensitive regions of the country in the pursuit of internal security.
- To develop and maintain the capability for rapid strategic intervention and power projection in the region extending from the Straits of Malacca to Central Asia and the Gulf to safeguard and promote national interests.
- To play a dominant role in the management of disasters and natural calamity in the region of interest.[18]

The IAF has responded to this expanded mission by acquiring a fleet of aerial refueling tankers and getting a long-range combat aircraft in the Su-30. It has also purchased the Phalcon airborne early warning system from Israel and put it on Russian Il-78s. Additionally, the indigenous AEW system designed by the Defense Research and Development Organization is to be integrated with Embraer jets.[19]

The Indian navy, similarly, has been enhancing its maritime air capability. The 1990s saw the acquisition of the Bear reconnaissance aircraft, and more recently, the government has acquired the Russian aircraft carrier *Gorshkov* with a component of MiG-29K fighters.

Both the navy and the air force see themselves as projecting Indian power, given the challenges posed by maintaining the free flow of energy supplies, helping in humanitarian missions, and the need to tackle regional threats in the Indian Ocean. Additionally, the IAF sees itself taking on a two-front threat from China and Pakistan. In terms of conventional airpower, Pakistan is viewed as less of a problem, since India should be able to maintain air superiority in a future conflict.

Given the changing requirements of the Indian armed forces, there is a recognition that they require more versatile and better-quality weaponry to fulfill the changing missions that they will be tackling. What may facilitate the acquisition of such weaponry is India's changed political worldview—particularly its opening to the United States.

The Changed Environment

For two reasons, the Indian arms market has changed to provide more favorable conditions for the United States: an improved relationship with the United States and the "normalization" of the relationship with Russia. Since 2005 India has reshaped its relationship with the United States, with Washington very clearly making the decision to help India become a major power. The centerpiece of this proposal has become the India-US nuclear deal.

The other reason for a changed environment is the problems in the relationship with Russia. The collapse of the USSR first saw Moscow lose interest in the relationship with India and, at a practical level, there was a contraction in the spare parts available to sustain India's largely Soviet military arsenal.[20] The relationship was revived in the late 1990s (with Vladimir Putin's 2000 visit to India leading to about $3 billion in Russian arms sales) but it became a purely commercial one.[21] The Russians wanted payment in dollars and were unwilling to sell weapons at the friendship rates that were given in the Soviet era. Since then, India has purchased Su-30MKI fighters, Il-78 AWACS platforms, Mi-17 helicopters, Kilo-class submarines, T-90 tanks, and various types of missiles from Russia. India has also agreed to jointly develop a "fifth-generation fighter aircraft," the Sukhoi T-50 PAK-FA, with Russia although the degree to which India will actually participate in the development of the plane has been questioned.[22]

More recently, the relationship has run into some turbulence because of the delays in providing new weaponry to India, the fact that Russian weapons are not matching their stated standards, and hefty cost overruns, with the Russians playing hardball with their Indian counterparts. Thus, India recently refused to accept updated Kilo submarines because the Klub missile system that was added to it did not work properly.[23] Similarly, the Russians have told the Indian navy that they require an additional $1.2 billion to complete the refurbishment of the carrier *Gorshkov* (now renamed *Vikramaditya*).[24] This puts India over a barrel since it has bought the supporting air wing based on the configuration of the carrier. India's naval chief publicly complained that the Russians had used Indian money to modernize their shipyard facilities and, in doing so, were now able to attract new business and push the Indian carrier project onto the back burner.[25] Also, the India-Russia medium-range transport aircraft project has run into funding problems.

What the Russians have also been doing is essentially tying the availability of certain weapons systems to the purchase of others. Thus, one of the reasons for buying the *Gorshkov* was that the Russians would subsequently sweeten the pot by offering India strategic systems like the Akula-class submarines (reports now indicate that India will be leasing two Akula-class boats) and Tu-22 Backfire bombers (a deal subsequently scrapped).[26] Further, when deals fall through in one area, there have been repercussions in the purchase of other weapons. When India declined to purchase Russian nuclear reactors after coming close to inking the deal, Moscow retaliated by asking for price increases on a series of weapons programs that included the *Gorshkov* and the Su-30MKI fighters.[27]

One should stress, however, that this is not the end of the India-Russia military relationship in the way that the Egypt-Soviet Union relationship ended in the early 1970s. The Indian defense minister was quick to distance his government from the remarks of the Indian navy chief about the delays and price increase with the *Gorshkov* project. Further, the Indian government continues to be interested in oil exploration in Sakhalin, has entered into an agreement with Russia to develop a fifth-generation fighter aircraft, and retains plans for the possible joint development of a transport aircraft. What we are likely to see, therefore, is a continued link with Russia, but at the same time, India will move towards other suppliers to reduce the critical dependence on Moscow in some fields.[28] It is due to this factor that a market opportunity has arisen for the United States.

The United States possesses one other advantage, and that lies in the changing geostrategic calculations of India vis-à-vis the Asian security environment—specifically, the rise of China. Indian policy makers and military strategists face the same dilemma that most Asian countries now face: on the one hand they all reap huge economic benefits from the rise of China; alternatively, they are concerned about China's military and political forays.[29] India now has a nearly $40-billion bilateral trade relationship with China, and the goal is to expand it to $60 billion by 2010 (although one estimate puts it at about $75 billion by 2010).[30]

Moreover, several contentious issues remain between India and China. Beijing has not settled the border dispute with India, and more recently, the Indians have complained of increased border incursions by Chinese forces into Indian territory. Moreover, China has moved away from its previous position of not claiming areas with settled populations and has

laid claims to the Indian province of Tawang. Politically, as the Indian commentator M. D. Nalapat argues,

> While Beijing tries to woo New Delhi away from an embrace with Washington, the Chinese leadership has tried to ensure that India does not gain significantly from any China concession. The reality is that the relationship between India and China is more competitive than complementary. While China needs to overcome India's current advantage in computer software and in other fields of the knowledge economy, India will have to become a manufacturing platform that can rival China if the country is to ensure a high level of blue-collar employment.
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> In short, both will ultimately poach on the other's turf as they are competing for the same markets and sources of technology. Thus, there is a limit to the distance China will go in seeking to convince New Delhi that it has morphed into a close friend. There will need to be much more atmospherics than substance [during a recent visit by India's prime minister to China], and the CCP leadership will be hoping that India takes such intangible "gains" or, as some Chinese experts call it, "sweet water."[31]

China remains opposed to India becoming a permanent member of the United Nations Security Council, and it continues to have a military relationship with Pakistan that in the past has led to the transfer of both nuclear and missile technology. India also remains concerned about the fact that China is "locking down" energy supplies around the world and that this will shut out New Delhi and adversely affect India's future economic development.[32] Given this future challenge, Indian analysts see a friendlier relationship with the United States and the prospects of a true strategic partnership as the way to balance the rise of China in Asia. Part of this growing strategic partnership lies in the procurement of weapons systems to have interoperability for possible joint missions in the future.

Requirements in the Indian Aviation Market

As India modernizes its airpower, it requires combat, transport, reconnaissance, and AEW aircraft. Additionally, it has a need for light- as well as heavy-lift helicopters that can reach high altitudes to service Indian troops in the Himalayas. Along with manned aircraft, India has a growing need for unmanned aerial vehicles to patrol its borders, carry out surveillance missions, and be used in counterinsurgency operations.

Much of the buzz around aviation sales in India centers on the proposed medium multirole combat aircraft (MMRCA) competition. The IAF initially planned to purchase 126 Mirage 2000 aircraft to phase out

its fleet of aging MiG-21s. Dassault subsequently cancelled production of the aircraft and upped the ante by suggesting that India buy the more expensive Rafale. Instead of single-sourcing the order, the Indian government decided to hold a competition for the procurement, and this led to bids by the manufacturers of the Swedish Gripen, the Typhoon Eurofighter, the MiG-35, the F-16, and the F-18.

This is a $9- to 10-billion deal, so it has assumed a high level of visibility in the Indian and international press; both Boeing and Lockheed are pressing hard to win the bid. As is the case with most Indian arms deals, and despite the proclamation of new procurement guidelines, the acquisition process has been marked by lengthy delays. Coupled with these delays have been the unique dynamics of Indian coalition politics.

Nominally speaking, India has had a national consensus on its foreign and national security policies. This consensus dictated that India pursue a policy of nonalignment, retain a nuclear weapons program, and seek autonomy in international affairs. In real terms the consensus has been broken by the narrow political interests and ambitions of the various political parties both within and outside the ruling coalition. The Indo-US nuclear deal was delayed because the different political parties in the ruling coalition could not agree as to whether the deal was in India's long-term interest. The various communist parties, who account for over 60 of the 545 seats in parliament and have supported the ruling Congress Party coalition from the outside, have ostensibly argued that the deal would not allow India to conduct further nuclear tests and this would impinge on its sovereignty. The communist parties' resistance has been attributed to a degree of anti-Americanism, the belief that the deal would not best serve India's energy interests, and to questions of sovereignty, although cynics observe that the communist parties have traditionally been opposed to the pursuit of an Indian nuclear weapons program.

In the opposition, the right-wing nationalist party—the Bharatiya Janata Party (BJP)—has also been opposed to the deal, even though the party has been traditionally viewed as pro-American. Again it seems narrow political calculations rather than a broader national interest may be prevailing in the decision-making process in this case. Coalitional politics, therefore, makes progress even slower than it normally would be in the Indian system.

India's checkered history of weapons procurement, with repeated charges of bribery and corruption, has also led governments to be cautious about

how to carry out the acquisition process.[33] The present government has sought to create a transparent acquisition process, but it seems to have shelved the acquisition of the MMRCA for the time being, since elections are due in early 2009. Thus the entire process will be carried over for about a year. The next government will then have to short-list three airplanes for flight tests—which could take another couple of years—and only then would a choice be made and negotiations begun. We may well see negotiations that stretch into a five-year process.

From the perspective of Lockheed, which is trying to sell the F-16, this could be problematic, since it would mean keeping a production line open for another 5–6 years in the hope that the Indians agree to the deal. It is also likely that by the time the Indian government reaches a decision, the F-35 production line will be opening up, in which case the argument may be made, why not offer the F-35 to the Indians? This may serve to be the win-win situation that both countries want to help further their broader relationship. It would cement the relationship with the Indians by offering a fifth-generation aircraft instead of the F-16, which the Indians see as dated and flown by Pakistan—which is viewed unfavorably in Indian circles. The F-35, on the other hand, would be viewed not only as a state-of-the-art fighter but would also suggest to New Delhi that India is valued as a serious friend and ally by Washington. It could also help New Delhi distance itself from Moscow, since it would lessen the dependence on Russia for advanced weapons systems. From an American perspective, the sale of what may eventually be between 100 and 200 F-35s would help cement the future of that program by reducing costs significantly. Additionally, the plane would be a better fit for the Indian navy—rather than the F-18 Super Hornet, the naval version of the Rafale, or the MiG-29K—which has already expressed an interest in the jump-jet version of the aircraft. The configuration of the new Indian aircraft carrier, the *Vikramaditya*, requires an aircraft that can take off vertically or using a ski jump and land using arrestor wires. This effectively rules out both the Rafale and F-18, which require a catapult launch. That leaves the MiG-29, which can be launched using the carrier's ski jump but is technologically a generation behind the Rafale and the Super Hornet and would not significantly add to the Indian navy's airpower capabilities.

UAVs

The Indian armed forces have learned from the use of UAVs and UCAVs in the war on terror as well as in counterinsurgency operations in Iraq. UAVs are an ideal tool for India, which faces several insurgencies, has a rugged border terrain, and covers large maritime areas of responsibility. Infiltration by jihadi elements continues from Pakistan across the LOC in Kashmir, and India requires the capability to monitor such intrusions. The growing Maoist insurgency within the country also requires security personnel to have better surveillance and monitoring capabilities. And there is the problem posed by the insurgencies in several of the northeastern states of India, where difficult terrain and soft borders with Bangladesh and Myanmar make reconnaissance and surveillance a problem. The cost of poor aerial surveillance became apparent following the Mumbai terror attacks of November 2008, as the terrorists were able to come in undetected by sea.

To date the Indian government has refused to use airpower internally, making the argument that insurgents are citizens of India, and therefore, aerial bombardment cannot be used against them. The fear of collateral damage has also made the government reluctant to carry out air strikes.[34] Indian analysts argue that the use of airpower would up the ante and lead insurgent groups to get more advanced weaponry, like antiair munitions. There is a belief, however, that airpower can be used in an unobtrusive manner to ensure security and that is by using UAVs to carry out surveillance and monitoring—UAVs have, in fact, been used for such purposes in India.[35]

India has its own UAV program, but it has had to import unmanned aircraft from Israel. In the future, it will require more-advanced UAVs to carry out missions both within the country and along the border. There have been several incidents along the border with Pakistan of both countries' aircraft straying across and violating the other's airspace. The political ramifications of shooting down a manned aircraft are serious, as in the case of the Pakistani Atlantique reconnaissance plane that was downed by India when it strayed over Indian airspace (Pakistan claimed the plane was shot over its own airspace). In such circumstances a UAV reduces some of the political tension that would result if a similar manned flight were brought down. Further, given that the Indian government needs 24/7 coverage of the LOC to prevent jihadi infiltration, an unmanned vehicle becomes the most effective and cost-saving way to conduct such a monitoring effort.

Further, the Indian army and the Indian navy are both calling for the development of their own air arms so that they can more effectively pursue their operations. The Indian army, in what looks like a turf battle with the IAF, is seeking to have an integral "tactical" air arm that includes UAVs, helicopters—both for transport and assault—and tactical fixed-wing transport aircraft. The army is arguing that it would have control over tactical systems and leave the strategic part of the war effort to the IAF. It is too early to say how this battle will be settled, but there is likely to be an Indian market for small UAVs the size of the Raven.

Helicopters

India has a requirement for light- and medium-lift helicopters, and in both areas, American firms are competitive. The Indian government overturned an IAF decision to acquire AS 550 Eurocopters and instead—following protests by Bell, which was trying to sell its own 407—asked that the competition be reopened. The IAF also would like to acquire 80 medium-lift helicopters as well as heavy-lift helicopters; the Boeing Chinook has been mentioned as a possible purchase. The army has stated as part of its attempts to acquire an organic air capability and the Indian government has issued a request for proposals to buy 22 combat helicopters—Boeing was asked to submit a proposal for the sale of the Apache AH-64 attack helicopter.[36]

India, therefore, is seeking to develop airpower to meet the challenges of a twenty-first-century battle environment as well as to project power extra-regionally. The Bush administration recognized India's aspirations and since 2005 has taken steps to help it develop into a world-class power. However, translating this commitment into a working relationship marked by large-scale arms sales is going to require a lot more time. Residual suspicions about American intentions are only one part of the problem. The lengthy nature of the Indian arms-procurement process, along with the problems created by coalitional politics in that country, make major arms sales a long and difficult process.

There is also the fact that competing nations can offer better terms of trade or inducements. Russia's ability to not only provide conventional weaponry but also extra-regional systems like the Akula subs—a comparable transfer of nuclear submarines would not be possible under US laws—places the United States at a disadvantage in the Indian market. On the other hand, both of India's major political parties—the Congress

and the BJP—are pro-American in their orientation; this is evident in the encouragement given to US firms to compete in the defense sector. Rival firms even complain that the United States is able to successfully pressure the Indian government to cancel competitions to afford US firms a better chance (this has been one of the allegations about the cancellation of the award of a helicopter deal to Eurocopter).[37]

The opportunity, therefore, exists to succeed in the Indian aerospace market and to work towards building a long-term strategic relationship with New Delhi. Arms sales will, however, be only a small part of this process, and failure to get lucrative projects like the MMRCA should not be viewed as setbacks to arms sales or to the long-term relationship. Instead, it should be understood that the Indian government will continue to push contracts in the direction of the United States while not shutting off traditional suppliers like Russia and the EU. One should most likely expect "Solomonesque" decisions, where the Indian government splits contracts and procures weapons systems from multiple suppliers. The other possibility is that the United States gets a series of smaller contracts to allow it to be a player in the Indian market and slowly increase Indian confidence in Washington as a reliable arms supplier. We may already be witnessing this trend, as India has agreed to purchase eight Boeing P-8I maritime reconnaissance aircraft.[38] If this is viewed as a long-term process, then there is a lucrative aerospace market for the United States to develop. SSQ

Notes

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