

DYNAMICS OF INDIA-USA STRATEGIC PARTNERSHIP AND DEFENCE INDUSTRIAL COOPERATION

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DECLARATION

I, **Adithyan S. Palayi** hereby declares that the data presented in this Dissertation report entitled, "Dynamics of India-USA Strategic Partnership and Defense Industrial Cooperation " is based on the results of investigations carried out by me in the MA. International Studies at the School of International and Area studies, Goa University under the Supervision of **Dr. Almin Cicily Jose** and the same has not been submitted elsewhere for the award of a degree or diploma by me. Further, I understand that Goa University or its authorities will not be responsible for the correctness of observations / experimental or other findings given the dissertation.

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PREFACE

In an era marked by rapid technological advancements, geopolitical shifts, and evolving security challenges, the significance of robust defence industrial cooperation between nations cannot be overstated. Against this backdrop, this dissertation seeks to explore and analyse the nuanced dynamics of defence industrial cooperation between two pivotal players in the global arena: India and the USA. The genesis of this dissertation stems from a deep-seated curiosity and a fervent desire to unravel the complexities inherent in the defence partnership between these two nations. As a student of international relations with a keen interest in defence and security studies, I have long been captivated by the strategic implications of bilateral defence collaboration, particularly within the context of the burgeoning India-US relationship.

Through meticulous research, analysis, and synthesis of existing literature, this dissertation endeavours to provide a comprehensive understanding of the evolution, scope, and impact of India-US defence industrial cooperation in the 21st century. By delving into historical narratives, diplomatic manoeuvres, technological advancements, and strategic imperatives, it aims to shed light on the multifaceted dimensions of this critical partnership.

I am deeply indebted to my academic advisors, whose guidance, insights, and encouragement have been invaluable throughout the journey of conceptualising and

executing this dissertation. Their expertise and unwavering support have served as beacons of guidance, steering me through the intricacies of research methodology, theoretical frameworks, and analytical approaches. Furthermore, I extend my gratitude to the numerous scholars, researchers, policymakers, and practitioners whose seminal works and contributions have laid the foundation upon which this dissertation is built. Their pioneering efforts have not only enriched the academic discourse but have also shaped the contours of defence cooperation between India and the USA.

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ABSTRACT

This dissertation critically examines the intricacies and implications of defence industrial cooperation between India and the USA in the 21st century. This study delves into the scope and scale of this cooperation, offering an overview of the Indian arms industry and the robust agenda for collaboration it presents. It explores joint ventures and technology transfer initiatives, shedding light on the evolving landscape of defence technology cooperation and the intersection of "Friendshoring" and "Make in India" initiatives. Collaborative research and development projects are also explored, particularly in the aerospace sector, highlighting the strides made in defence innovation through bilateral efforts. Challenges and opportunities in this cooperation, including regulatory hurdles and strategic alignment, are thoroughly analysed. This study assesses the effectiveness and strategic impact of India-US Defence industrial cooperation. Through an evaluation of the new roadmap for defence collaboration, it examines the tangible impact on defence capabilities and technological advancement, emphasising the role of technology transfer in bolstering defence innovation. Furthermore, it considers the broader contributions of this cooperation to regional security, particularly in the context of India's threat environment and geopolitical dilemmas. Lessons learned from past collaborations are distilled, providing valuable insights for shaping the future trajectory of Indo-US defence industrial cooperation.

ABBREVIATIONS

Entity	Abbrevi
United Nations Munitions List	USML
International Traffic in Arms Regulations	ITAR
Director General of Foreign Trade	DGFT
Special Chemicals, Organisms, Materials Equipment and Trade	SCOMET
Defence Artificial Intelligence Council	DAIC
Defence Artificial Intelligence Project Agency	DAIPA
Unmanned Underwater Vehicle	UUV
Autonomous Underwater Vehicle	AUV
Defence Research and Development Organization.	DRDO
Central Mechanical Engineering Research Institute	CMERI

Bharat Electronic Limited	BEL
Jet Propulsion Laboratory	JPL
Geosynchronous Satellite Launch Vehicle	GSLV
initiative on Critical and Emerging Technologies	iCET
Indian Space Research Organization	ISRO
CLPS- Commercial Lunar Payloads Services	CLPS
Arms Export Control Act	AECL
Countering America's Adversaries Through Sanctions Act.	CAASTA
Ordnance Factories	OF
South East Asia Treaty Organization	SEATO
Central Treaty organization	CENTO
Peaceful Nuclear Explosion	PNE
Light combat Aircraft	LCA
Nuclear Non Proliferation Act	NNPA

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Chapter 1:

INTRODUCTION

The strategic partnership between India and the United States stands as a testament to the evolving dynamics of international relations in the 21st century. As two of the world's largest democracies, India and the USA have navigated a complex geopolitical landscape, marked by shifting power dynamics, emerging threats, and shared aspirations for global stability and prosperity. Their relationship has evolved significantly over the years, encompassing key diplomatic engagements, robust defence collaborations, and extensive economic agreements. This dissertation aims to explore the historical evolution and contemporary dynamics of the strategic partnership between India and the USA, with a particular focus on the role of diplomatic, defence, and economic cooperation.

By delving into the intricate tapestry of interactions between these two nations, this study seeks to analyse the drivers, challenges, and implications of their strategic alignment, shedding light on the multifaceted dimensions of their relationship. From foundational defence agreements to joint military exercises, from trade agreements to development assistance, the India-US partnership encapsulates a wide array of engagements that have

shaped regional and global geopolitics. Through a comprehensive examination of these engagements, this dissertation seeks to elucidate the underlying factors driving the strategic convergence between India and the USA, while also acknowledging the limitations and complexities inherent in such a partnership. By critically evaluating the historical trajectory and contemporary dynamics of the India-US strategic partnership, this study aims to contribute to a deeper understanding of the evolving dynamics of international relations in the 21st century and the implications for regional and global security.

1.1 RATIONALE OF THE STUDY

This research aims to provide valuable insights into one of the most significant bilateral relationships in the contemporary world order: the strategic partnership between India and the United States. Over the years, India has transitioned from being a dependent country to a strategic partner of the USA, marking a remarkable journey in international relations. As two major powers, India and the USA wield substantial influence and play pivotal roles in shaping the security landscape of not only the Indo-Pacific region but also beyond. Their partnership encompasses various dimensions, including diplomatic engagements, defence collaborations, and economic agreements, with defence industrial cooperation occupying a central position. Understanding the intricacies of defence industrial cooperation is essential as it not only strengthens the strategic relationship between these nations but also has implications for trade, investment, technology transfer, and innovation in the defence and high-technology sector. Moreover, analysing the India-US partnership aligns with India's national interest, given its significance in shaping

regional and global geopolitics. By delving into the historical evolution and contemporary dynamics of the India-US relationship, this study seeks to unravel the drivers, challenges, and implications of their strategic convergence. Ultimately, gaining a deeper understanding of this strategic partnership will not only enrich academic discourse but also contribute to informed policymaking and enhance international cooperation in addressing shared challenges and promoting peace and stability in the 21st century.

1.2 RESEARCH OBJECTIVES

The primary objective of this research is to identify the key drivers and restraining factors influencing the strategic partnership between India and the United States. By examining diplomatic, defence, and economic engagements between the two nations, the study aims to unravel the underlying factors shaping their relationship, including geopolitical considerations, shared interests, and divergent priorities. Another objective is to understand the crucial role of strategic partnerships in the modern age of international relations. By analysing the India-US partnership in the context of contemporary global dynamics, the research seeks to elucidate the significance of strategic alliances in addressing common challenges, promoting mutual interests, and shaping the evolving landscape of geopolitics.

Additionally, the research aims to assess the impact of military-industrial cooperation on defence capabilities, including advancements in weaponry, equipment, and defence systems. By examining collaborative projects, technology transfers, and joint ventures in the defence sector, the study seeks to evaluate the extent to which defence industrial

cooperation enhances the military capabilities of both nations and contributes to their strategic objectives. Lastly, the research seeks to understand and analyse the new roadmap for USA-India Defense Industrial Cooperation. By examining recent initiatives, policy frameworks, and collaborative projects outlined in the roadmap, the study aims to assess the potential opportunities and challenges for enhancing defence industrial cooperation between the two nations. Through a comprehensive analysis of the roadmap, the research aims to provide insights into the future trajectory of defence collaboration and its implications for the strategic partnership between India and the USA.

1.3 CONSTRUCTION OF HYPOTHESIS

1. The historical analysis of the strategic partnership between India and the USA will reveal a pattern of increasing collaboration in diplomatic, military, and economic domains over time, indicating a trend towards deeper alignment and cooperation between the two nations.
2. The assessment of current military industrial cooperation between India and the USA will demonstrate that joint ventures, technology transfers, and collaborative research and development initiatives have led to significant advancements in defence capabilities for both countries, thereby reinforcing their strategic partnership and fostering mutual trust and interdependence.

1.4 RESEARCH QUESTIONS

1. How have key diplomatic engagements, military collaborations, and economic agreements contributed to the historical evolution of the strategic partnership between India and the USA, and what role have they played in shaping the overall trajectory of the relationship?

2. What is the current scope, scale, and effectiveness of defence industrial cooperation between India and the USA, and how do joint ventures, technology transfers, and collaborative research and development initiatives contribute to enhancing bilateral defence capabilities and strengthening the strategic partnership?

1.5 RESEARCH METHOD DESCRIPTION

The methodology used is based on qualitative study and will use historical and descriptive approaches to understand the ongoing India-US Strategic Partnership.

Data Collection Methodology

1. The primary data is collected through Government bills, Government policies, reports and the official statements of both states .

2. Secondary data collected through books, eBooks, Journal articles, news articles , news websites, online webinars and research journals published by various think tanks in general which will provide in-depth understanding of the research topic,

and provide reference material in answering research questions and providing conclusions and findings.

1.6 THEORETICAL APPROACH

- In realism countries tend to work towards maximising their national interest and strategic calculation to have dominance and secure national security. The US and India are collaborating to secure an upper hand in critical military technologies by knowing their pivotal role.
- The concept of Balance of Power, the USA arises from their shared perceptions of external threats, such as China's rising power and regional instability, which compel both countries to bolster their defence capabilities and forge closer strategic ties.

1.7 CHAPTERIZATION SCHEME

Chapter 1: Introduction

Introduction chapter provides a foundational overview of the dissertation, outlining the rationale for studying defence industrial cooperation between India and the USA in the 21st century. It delineates the research objectives, which guide the study's trajectory, along with posing specific research questions to explore various dimensions of the topic.

Additionally, a hypothesis is formulated to provide a theoretical framework for investigation. Finally, the chapter conducts a comprehensive literature survey to review existing scholarship, identifying key themes and gaps in the literature.

Chapter 2: Historical Evolution of the India-US Strategic Partnership

This chapter provides a concise exploration of the historical evolution of the India-US strategic partnership. It begins with an examination of Cold War legacies and strategic alignment, followed by an analysis of post-Cold War developments. The chapter concludes by delving into the intricacies of nuclear cooperation between the two nations.

Chapter 3: Key Diplomatic, Military, and Economic Developments in 21st century

This chapter provides a comprehensive overview of the India-US relationship in the 21st century. It begins by exploring the evolution of the partnership, emphasising deepening ties and strategic alignment. This is followed by a discussion on military collaboration, highlighting joint exercises and defence agreements that strengthen cooperation. The chapter then delves into economic engagement, focusing on trade relations and investment flows that illustrate growing economic ties and mutual benefits. Lastly, the impact of global events and regional dynamics on the relationship is analysed, shaping its trajectory in the contemporary era.

Chapter 4: Military Industrial Cooperation: Scope and Scale in 21st Century

Chapter 4 delves into the intricacies of Military Industrial Cooperation in the 21st century, examining the collaborative efforts between India and the USA. It begins with a thorough exploration of the defence industries in both nations, highlighting their capabilities and strengths (4.1). The chapter then delves into the mechanisms driving innovation and knowledge exchange through joint ventures and technology transfer initiatives (4.2). Collaborative research and development projects take centre stage in the subsequent section, showcasing the joint efforts to advance military technology and capabilities (4.3). Lastly, the chapter addresses the inherent challenges and opportunities present in defence industrial cooperation, offering valuable insights into navigating this complex landscape (4.4).

Chapter 5: Assessing Effectiveness and Strategic Impact

Chapter 5 delves into the critical task of evaluating the effectiveness and strategic impact of defence industrial cooperation. It begins by introducing an evaluation framework tailored for this purpose, providing a structured approach to assess the outcomes and performance of collaborative efforts (5.1). The chapter then scrutinises the impact of such cooperation on defence capabilities and technological advancement, shedding light on how joint ventures and technology transfer initiatives contribute to enhancing military prowess (5.2). Furthermore, it examines the broader implications for regional security, analysing the role of defence industrial cooperation in fostering stability and cooperation among neighbouring nations (5.3). Finally, drawing from the experiences and outcomes observed, the chapter distils valuable lessons learned and outlines future prospects for furthering cooperation in the defence sector (5.4).

Chapter 6: Conclusion

Chapter 6 provides a succinct summary of the dissertation's findings, highlighting key insights derived from the research process (6.1). It underscores the significance of the India-US strategic defence partnership, emphasising its implications for regional security and global stability (6.2). Additionally, the chapter offers reflections on anticipated future trends and challenges in defence cooperation, providing insights into potential areas of focus and development (6.3).

1.8 LITERATURE SURVEY

In "An Unnatural Partnership?: The Future of U.S.-India Strategic Cooperation" by Ganguly and Mason (2019), the authors provide a nuanced analysis of the trajectory and challenges of U.S.-India strategic cooperation. The literature underscores the momentum in U.S.-India relations, highlighting recent agreements that signify a growing convergence of interests between the two nations. However, it also sheds light on the presence of an anti-American streak within India's political culture, which poses a hurdle to deeper collaboration. Furthermore, the authors identify legal barriers to foreign investment in India's nuclear power sector as a significant obstacle to enhancing bilateral cooperation, particularly in the realm of nuclear nonproliferation. Despite these challenges, the literature emphasises the concerted efforts made by two U.S. administrations to integrate India into the global nonproliferation regime, reflecting a strategic imperative to engage with India as a key partner in maintaining global security. Overall, the literature review provides valuable insights into the complexities and opportunities inherent in U.S.-India strategic cooperation, highlighting the need for

sustained diplomatic efforts and policy initiatives to navigate and overcome existing challenges.

Weitz's (2017) report on "Promoting U.S.-Indian Defence Cooperation: Opportunities and Obstacles" offers a comprehensive examination of the evolving dynamics between the United States and India in the realm of defence cooperation. The literature review delves into various aspects of this cooperation, ranging from counterterrorism efforts to regional security concerns, foreign arms sales, and international defence interoperability. Notably, the report underscores the United States' proactive efforts to fulfil Indian requirements for offsets, technology transfers, and other forms of support aimed at bolstering India's defence industrial base and fostering job creation in both countries. Furthermore, the authors highlight the strides made in enhancing U.S.-Indian military ties, including advancements in defence-industrial collaboration, intelligence sharing, and the normalisation of nuclear ties. A key aspect emphasised in the literature is the need for a crisis management strategy to address major terrorist incidents and regional threats, advocating for joint development between the United States and India. Additionally, the report suggests expanding cooperation with allies such as Australia, Japan, NATO, and other third partners to amplify the impact of the U.S.-Indian security partnership, reflecting a broader strategic outlook on regional stability and global security concerns. Overall, Weitz's report provides valuable insights into the multifaceted nature of U.S.-Indian defence cooperation and outlines potential pathways for further strengthening this vital bilateral relationship.

Behera and Balachandran's (2018) article, "Indo-US Defense Industry Cooperation: A Prognosis," sheds light on the significance of defence industrial cooperation as a crucial aspect of the Indo-US relationship. The literature review underscores the notion that while defence cooperation has been a cornerstone of the strategic ties between India and the United States, defence industrial collaboration has not received commensurate attention. The authors highlight the Indian offset policy, which allows foreign companies the flexibility to choose the nature of their contributions, thereby offering avenues for enhancing defence industrial cooperation. Specifically, they point out the initiatives undertaken by the TATA group, which has established joint ventures with US companies for manufacturing aircraft parts, exemplifying the potential for fruitful collaboration in the defence sector. Overall, Behera and Balachandran emphasise that defence cooperation serves as a defining element in the broader Indo-US strategic relationship, suggesting its potential for further strengthening bilateral ties and fostering mutual security interests.

In Khan's (2017) article, "Growing India-US Strategic Cooperation: An Analysis," the focus is on the evolving strategic partnership between the United States and India. The literature highlights the emergence of this partnership and emphasises the growing strategic convergence between the two nations. Khan delves into the potential for further growth in the US-Indian strategic relationship under the Trump administration, suggesting avenues for enhanced cooperation in various strategic domains. Particularly noteworthy is the discussion surrounding US reliance on India in response to the China-Pakistan Economic Corridor (CPEC), underscoring India's role as a key regional player and partner for the United States. Additionally, the article examines India's broader role as a global

partner and ally across different strategic levels, indicating the multifaceted nature of the Indo-US strategic cooperation. Overall, Khan's analysis provides valuable insights into the dynamics of the growing strategic partnership between India and the United States, shedding light on the factors driving closer collaboration and the potential implications for regional and global security.

In Hedrick's (2009) paper, "India's Strategic Defense Transformation: Expanding Global Relationships," the focus is on India's evolution in defence relations and its ascent as a significant regional and global military power. The literature provides a historical overview of Indian defence relations, tracing its trajectory from its inception to its current state. Hedrick discusses the implications of India's strategic defence transformation for US foreign and defence policy, highlighting the importance of understanding and engaging with India's evolving role in the international arena. Furthermore, the paper takes a global perspective on India's rise, exploring potential conflicts with its legacy as a leader of the Non-Aligned Movement. By examining India's expanding global relationships and its growing military capabilities, Hedrick's analysis offers valuable insights into the shifting dynamics of regional and global security, as well as the implications for US strategic interests and policy formulation.

The article by Gul et al. (2021) titled "Assessing Various Opportunities and Challenges in India-US Strategic Partnership" delves into the intricate dynamics of the Indo-US strategic partnership, particularly in the context of China's growing influence and assertiveness in the region. The study underscores the evolving nature of the partnership between India and the USA, with a specific focus on how the China factor shapes their cooperation. By examining key geopolitical issues such as the South China Sea disputes and the US-China trade conflict, the authors highlight the complexities and

challenges faced by the Indo-US partnership. Furthermore, the article explores the implications of the US Indo-Pacific strategy for cooperation with India, emphasising the strategic alignment between the two nations in the face of shared concerns regarding China's rising power. Overall, Gul et al.'s research provides valuable insights into the opportunities and challenges inherent in the India-US strategic partnership, particularly in the context of the evolving geopolitical landscape shaped by China's increasing influence.

In Lodhi's article, "India-US Strategic Partnership, the Asian Balance of Power, and the Greater Middle East," published in the Indian Foreign Affairs Journal, the author examines the complex dynamics of the strategic partnership between India and the United States, particularly in the context of the evolving geopolitical landscape in Asia and the Greater Middle East (GME). Lodhi outlines key elements of American strategy, which prioritise addressing radical Islamist terrorism, containing "rogue" states, countering the rise of China, and managing challenges posed by re-emergent Russia and assertive Europe. In Asia, the US aims to sustain its pre-eminence through bilateral and multilateral alliances to counter China's rise, while also emphasising the significance of the Greater Middle East and the Indian Ocean regions in its strategic calculus.

The article highlights that India shares strategic threat perceptions with the US regarding China and Islamist terrorism, while also seeking to engage with China and prevent any regional power from threatening American primacy. However, Lodhi also points out differences in expectations between India and the US, especially regarding Pakistan and Iran. These differences stem from divergent strategic interests and historical complexities, particularly concerning India's relations with its immediate neighbours. While India perceives Pakistan as a security challenge due to cross-border terrorism and instability,

the US has often sought to maintain a delicate balance in its relations with both India and Pakistan. Similarly, India's approach towards Iran differs from that of the US, as India has sought to maintain robust economic and energy ties with Iran despite American sanctions. Lodhi's analysis sheds light on the nuanced dynamics of the India-US strategic partnership, highlighting both areas of convergence and divergence in their respective strategic priorities and regional outlooks.

In Upadhyay's article, "India-US Defence Partnership: Challenges and Prospects," featured in the Indian Foreign Affairs Journal, the author explores the significance of the Major Defence Partnership (MDP) between India and the US, particularly in the Indo-Pacific theatre. The MDP facilitates greater supply-chain efficiency and streamlined processes for exporting dual-use and high-technology items to India, underscoring the deepening defence ties between the two countries in recent years.

Upadhyay also discusses proposals for enhancing the defence partnership, including the incorporation of drone warfare, lightweight arms, and virtual augmented reality technologies. These proposals signify the evolving nature of defence cooperation between India and the US, reflecting efforts to modernise and strengthen defence capabilities in response to emerging security challenges in the region. However, while highlighting the prospects of the India-US defence partnership, the article also alludes to challenges that may hinder its further development. Although specific details regarding these challenges are not provided, they likely encompass a range of issues such as bureaucratic hurdles, divergent strategic priorities, and geopolitical complexities.

1.9 Limitation of Study

- Firstly, access to classified defence data can be restricted thereby hampering in-depth analysis.
- Secondly, absence of industrial visits and interviews with relevant stakeholders, which could have provided firsthand insights into the research.

CHAPTER 2

HISTORICAL EVOLUTION OF THE INDIA-US STRATEGIC DEFENCE PARTNERSHIP

India and the US are generally perceived as the world's biggest and oldest democracies respectively. The connection between these two nations is in this manner quite possibly the most entrancing cooperation seen in the relations among countries. The additional huge elements are set apart by the way that India is perhaps the most established civilisation on the planet, while the US is moderately a more youthful civilisation. Be that as it may, as far as statehood experience, it is the US, which is significantly more established than India. At the point when India accepted birth as a recently free country in 1947, the US was at that point over hundred years and a half old. Furthermore, after Indian independence , it had arisen as a worldwide multi-aligned power. Factors connected with civilisation, statehood and administration consequently made the relations among India and the US as perhaps of the most mind boggling reciprocal connection in world history.

Not long after independence, India decided not to join any of the two power alliances, and embraced the approach of non-alignment. It became a sovereign state in 1947. India had held the greater part of the military modern facilities that were worked during English

rule, including 16 Ordnance Factories(OFs), three shipyard fix offices (Mazagaon Dockyard, Garden Reach Shipyard and Goa Shipyard) and an aircraft repair facilities (which later became Hindustan Flight Limited) (Subrahmanyam, K. ,2005). While the majority of its military gear was met by the arms manufacturing plants, India was basically reliant upon Western hotspots for meeting its developing defence hardware needs. While the English and the French were prime providers to India during those years, the US was likewise a cutting edge provider of military hardware

2.1 COLD WAR LEGACY AND STRATEGIC ALIGNMENT

As a matter of fact, defence collaboration among India and America can be traced to the 1950s when they participated in joint activities with the UK and Australia. Arms deals from the US to India date back to 1951 when the US gave India five T-6 Texan Trainer airplanes. In 1952, Indian requested countless tanks and aircrafts to modernise its military. The solicitation for 200 Sherman tanks worth \$19 million was endorsed rapidly, however a solicitation for 200 stream aircraft was not supported. Be that as it may, the US acquiesced to India's solicitation to sell 54 C-119 aircraft. In 1954, Nehru would not acknowledge President Eisenhower's proposal of military help. In May 1960, the US conveyed the US C-119 aircraft purchased by India. (Leighton, R. M. 2001).

Again in 1962, the US surged crisis military help during the Sino-India battle, in spite of the way that it would hamper its ties with Pakistan. It is eminent that, as of now, India's dear companion, the USSR, first embraced a place of lack of bias and afterward nearly

upheld the Chinese by recommending that India and China examine the Chinese proposition on the boundary issue and even went to the degree of briefly halting MIG 23 conveyances to India. Indeed, even India's uncommitted companions, other than Nasser and Tito, didn't show up to openly endorse India. Notwithstanding, the US just sent hardware like light arms, correspondence gear and ammo that would be more valuable in mountain fighting. It would not give the air safeguard equipment requested by India and the American Representative effectively deterred India from heightening the contention by the utilisation of air power. The US did, nonetheless, guarantee military help with the future to India. In December 1962, President Kennedy endorsed a crisis military guide program for India worth \$60 million and the two nations held joint air guard practices in September 1963, yet this was only an oddball case. Dennis Kux claims that President Kennedy was nearly supporting a five-year military bundle for India when he was killed. The Johnson organisation supported a five-year military guide bundle to India, however it would not give the F-104s that India needed, as the Pentagon felt that these would cause strains in US-Pakistan relations (PTI. 2015,October 14)..

After the 1965 Indo-Pak war, the US shut down all arms commodities and military help to India. In 1969, India had ten Hughes-300/TH-55 Light helicopters from the US, which were conveyed in 1971-1972. Yet, once more, on December 2, 1971 during the Bangladesh War, Washington reported a suspension of military deals to India, which implied that the offer of a \$70 million correspondences framework pointed toward further developing India's air defence capacities was halted. During the Reagan organisation, the US endorsed some high innovation collaboration with India's defence industry and facilitated boundaries to the innovation movement and a MOU on move of innovation

was endorsed in 1984. The main participation in defence in the last phase of the 1980s was the joint effort with the US Aviation based armed forces in India's Light Combat Aircraft project, for which India got F-404 motors for use in the undertaking. During the Reagan organisation, as a component of its 'opening up to India' strategy, defence relations got a push when US Defence Secretary Blunt Carlucci visited India. This was trailed by an equal visit by the Indian defence ministry. The tactical guide provided by the US to India between 1950 and 1990, 94%, was a piece of the understanding made in the mid 1960s. Subsequently, arms deals and thus defence and reciprocal relations during the Cold War were hampered by India's apprehensions about the US' dependability as an arms provider, as additionally by its aversion to the terms of US government arrangements (Business Standard. 2013, August 16) .

Dependability factor keeps on impinging on India-US guard relations even today. As and when the US advanced the development of military coalitions and security collusions, India energetically went against them. India was especially concerned about the arrangements of South East Asia Treaty Organisation (SEATO) and Central Treaty Organisation (CENTO). These two associations carried Cold Conflict to India's entryway ventures with Pakistan turning into a functioning part in them. As the coalition legislative issues moulded the US thinking on a progression of political occasions and furnished clashes all over the planet and non-arrangement moulded the Indian reasoning, New Delhi and Washington contrasted on greater part of such issues. The Cold War-related political divergences among India and the US were especially apparent and articulated on issues connected with de-colonisation of frontier domains, the Korean Conflict, Vietnam War, Suez emergency, Hungarian Emergency, Czechoslovakia Emergency, and People's

Republic of China's enrollment in the Assembled Countries. In any case, India and the US likewise firmly varied on specific issues connected with India's public safety. These were the Kashmir issue; American arms moved to Pakistan and the atomic issues.

- **Kashmir Problem:** The Kashmir problem began with the Pakistan backed tribal invasion of Kashmir in 1947. As the Maharaja of Kashmir agreed to Kashmir's accession to India and requested the Indian military help, the first war between India and Pakistan began soon after India's independence. The US failed to recognise Pakistani aggression, imposed arms embargo against both India and Pakistan and supported the UN Security Council resolution that did not condemn aggression. India complained that the US equated the victim with the aggressor through its policy. The US took a similar stand during the second Pakistani aggression on Kashmir in 1965. The US tilt towards Pakistan in the third round of Indo-Pak war in 1971 was an act of hostility towards India. But after the Indian victory in the war, the US began to support the Simla Agreement, which called for the resolution of the issue through bilateral dialogue. Nonetheless, Washington continued to view Kashmir as a disputed territory and did not accept the Indian point of view that it was an internal affair of India (Shah, K. M, 2021, October 20) .

- **US Arms Transfer:** Six years after the first Indo-Pakistan war, the US signed a Mutual Defence Agreement with Pakistan in 1954. It signed another agreement in 1959 on military cooperation. And in between, Pakistan had joined the SEATO and CENTO. Consequently, Pakistan received millions of dollars of military assistance from the United States. A substantial amount of that assistance was spent by Pakistan in procuring advanced weapons from the US. India, time and again, brought to the notice of Washington that its arms transfers policy encouraged arms race in the subcontinent and

generated regional instability. Washington assured India that the US-supplied weapons to Pakistan were meant to contain communism rather than to be used against India. However, Pakistan did use those weapons during its war against India (U.S. Department of State. 2017)..

- **Nuclear Issues:** The nuclear issue came to dominate India's relations with the US ever since China went nuclear in 1964. Washington suspected that India would follow China and detonate its own bomb sparking off further proliferation of nuclear weapons. The US, along with several other countries soon started a process to deal with proliferation, which culminated in the signing of a Nuclear Non-Proliferation Treaty in 1968. India refused to be a party and opposed this treaty on the ground of its in-built discrimination against non-nuclear weapon states. It sought to prevent others from going nuclear, while allowing vertical nuclear proliferation by five nuclear weapon states—the US, USSR, Britain, France and China. Disregarding this discriminatory document, India conducted a Peaceful Nuclear Explosion (PNE) in 1974. It created yet another round of political hostility between India and the US, since India did so after about three years of defeating Pakistan in 1971 War and in the midst of American decline indicated by US withdrawal from Indochina. Notwithstanding the military distance and political differences between India and the US during the Cold War, the two countries had good working relations in other areas. New Delhi and Washington never perceived each other as enemies. In fact, when Sino-US détente coincided with Indo-Soviet friendship and cooperation in early 1970s, the political distance between India and the US further widened. But even this development did not lead to a serious fracture in the bilateral relationship. India had been a recipient of American food assistance during drought and famine and token economic

assistance through the Cold War years. The US did use food aid as a political weapon occasionally creating resentment in India, but there is little doubt that India benefited from the US assistance as well (Chakma, B,2005)..

India's entrance into the international community of countries as an autonomous political entity nearly matched with the spread of the cold war between the two erstwhile superpowers — the US and the Soviet Union. As the two superpowers conflicted and vied for spreading their impact all over the planet, India was confronted with a One choice amongst lots of bad options to favour one side in the Cold War. State leader Jawaharlal Nehru ruled against pursuing a decision and reported a strategy of Non-Alignment. This strategy tested the moral premise of the Cold War, pointed toward forestalling the Cold War and looked to embrace an approach that would work with India's accommodating relations with both the US and the USSR. By and by, now and again the Indian position was hated by the U.S. also, it made a special effort to help Pakistan and embraced enemies of India has been obtaining its tactical hardware from Western nations of all time (Business Standard , 2013, August 16).

2.2 DEFENCE RELATIONS AFTER THE END OF COLD WAR

In spite of the fact that there was an unwinding in the cold war since the mid-1980s with the ascent of Gorbachev to drive the previous Soviet Union, the cold War basically reached a conclusion with the deterioration of the Soviet Union in December 1991. India's relations with the US had significantly improved during the unwinding of the Cold

Conflict, however the breakdown of the Soviet Union exposed remarkable vulnerabilities to worldwide relations, including Indo-US relations. With the US rising as the main superpower on the planet, there was little uncertainty that it wouldn't have the option to focus on its relations with India during this season of extraordinary progress in world affairs. A few experts contended that South Asia was an area of low need during the Cold War and it was impossible that it would get any high need in the new setting of the post-Cold Conflict period (Lüthi, L. M. 2016).

Indications of financial worries, which tended towards inversion of stand in both the U.S and Indian mindset. India decreased India's reliance on the Soviet Union for monetary and military development. A fortuitous event of the need to reevaluate shared impression of one another's system and strategy happened when Rajiv Gandhi coming to drive in 1984 excited the cycle previously set in the mid eighties by a significant progression of Indian economy at one dive. The very rationale and result of this strategy was to rely upon the western market for contemporary made items to fight off the further slide in its equilibrium of economy.

A Memorandum of Understanding(MOU) was endorsed in November 1984 prompting a move of innovation and facilitating American limitations on exchange. The Indo-US connection denoted an improvement when limitations on the inventory of double use innovation were lifted. To take a choice to concede India a permit to purchase of the line General Electric F 404 Stream motors for its light battle air create was critical considering the prior U.S. forswearing of something similar to China. One more choice to offer to India Bonkers XMP-24 super PC, however less strong than the XMP-24 was huge considering its deal to a country outside the western coalition. As affirmed by the then

U.S. Defence Secretary, Carlucci, in his visit to New Delhi in April 1988, Washington consented to sell India ring laser Gyroscope for the utilisation of its recently planned light combat aircraft (LCA). Indo-US defence participation envelops the arrangement of US radar parts for Indian surface missiles, which were tried in January 1988. As a result American maritime vessels have been permitted to visit Indian ports and US defence authorities have been allowed admittance to Indian defence facilities(Rafique, N.,2000).

In the last Gulf War, the authorization to American planes for refuelling on its air terminals by the Indian Government couldn't be astonishing in that frame of mind of the above defence participation. These changes in US cold war mentality towards India surfaced during Reagan's organisation and PM Rajiv Gandhi's climb to control. A perceptual change in understanding India, showed up in the US helped by no question the social event welter of confirmations of decline of Soviet Union as a significant danger to US interests(Lüthi, L. M, 2016).

The Indian Tilt

On the Indian side there have been wonderful slants towards the US with P.V. Narasimha Rao turned into the head of the government. The finish of both cold war and Soviet Union, disintegrated the very establishments on which non-alignment roosted up until this point. India's security partnership with the Soviet Union got a shock and became useless considering the 'Russian league' the replacement condition of the past Soviet Union being hesitant and which was not in that frame of mind to play the dead cold war game. It keeps providing the weapons to India on business premises without showing any obligation to shield India against outside hostility. The prevailing job that the US played in the Gulf emergency and its presentation since as to the removal of two Libyans thought to have

bombarded a Pan Am 103 aeroplane in December 1988 are suggestive of the strong clout that US with different powers like Germany, China and France stepping the US wrinkle give a false representation of all expectations of the third world and proclamation of Bush about the démocratisation of UN and new world request(Lüthi, L. M, 2016).

In such a changing global scene, there could have been no other level headed choice except for creating security joins with the US accessible to Rao's administration, with NAM fading in its importance and significance to take bludgeons for the third world against US was not a sober minded decision for India, when a large number of the neutral nations are ready to hunker down to US pressure strategies. In pursuance of this decision India produced military and security joins with the US. Strategic and military co-activity are being created on the recommendations of Lt. Gen. Claud Kickleighter, previously of the US Armed force Pacific, viz. visits by bosses and staff, joint armed force leader directing chamber, staff data trade, trade of faculty, aggregate preparation data trade, joined preparing exercises or co-facilitating of a Pacific militaries board workshops (Lüthi, L. M. 2016).

The maritime collaboration between them has joined with the US Pacific Command covering the Indian Ocean littoral and the Asia Pacific District. Having achieved a victorious hold in its Headquarters locale in West Asia, the US targets getting a comparable hold over the Asia Pacific District. India permitted itself to be an accomplice in US techniques around here to prevent other domineering powers like Russia or China which can be helpful for India's public interest. The Congress government under Narasimha Rao on entering office found the Indian economy deteriorating considerably.

To rescue India from such an obligation trap, the strategy makers found that reliance on World Bank, IMF and other international monetary institutions under the tutelage and directives of the US was ineluctable. At the point when the curtain of bamboo or iron were brought up in the Soviet Union and other Eastern European socialist states, the corrupt economy burdening a large number of individuals formed on Marxian speech uncovered the Indian strategy producers to question the entire rationale of adjusting to the Nehruvian economy. Affected by these powers, Rao's Administration introduced extreme financial changes which, as indicated by them, appear to be on the track and empowered India to get significant measures of advancement credit from World Bank, IMF and ADB. Help consortium leaned toward India little - interest credit from IDA and ADB (Cerra, V., & Saxena, S. C., 2002).

India's Foreign Policy declarations and plans tracked down the shortfall of its old cold war custom of dying flames at talking points like enemy of expansionism or against dominion. India upheld all goals in the Security Committee, US mooted either against Iraq or Libya, and US moved in the UN repealing its 1975 goal which had compared Zionism with racism (Joseph, S. V., & Mucheli, R. R. 2024, March 9).

2.3 NUCLEAR COOPERATION IN 20TH CENTURY

The controversy over the proposed U.S.-India nuclear agreement stems from events that occurred in 1974, when India detonated its first nuclear explosive device at Pokhran. India's test was the first illegal use of civilian nuclear facilities and materials for nuclear explosive purposes.¹ In 1978 the U.S. Congress enacted the Nuclear Non-Proliferation Act (NNPA), establishing requirements for nuclear cooperation that included adherence to Full-Scope Safeguards. India's refusal to accept such safeguards resulted in a nuclear

embargo by the United States. The embargo was expanded in 1992 when the Nuclear Suppliers Group (NSG), currently consisting of 45 countries that set rules for nuclear trade by consensus, adopted full-scope safeguards as a criterion for exports to non-weapon states. This criterion was subsequently endorsed by the United Nations.

India's program moved along slowly at first, but after Pakistan began getting close to assembling its first nuclear weapon in the 1980s, the Indian program accelerated, with new designs requiring testing for reliability (Joseph, S. V., & Mucheli, R. R., 2024, March 9)

To Test or Not to Test

The schedule for new tests was climbed by the move by the Settlement on the Non Proliferation Treaty (NPT) atomic weapon states for a vote to broaden the deal endlessly at the impending 1995 NPT Survey and Expansion Meeting instead of having it reached out for a proper period. As a trade-off for that vote, the weapon states proposed, in addition to other things, the reception of an Comprehensive Nuclear Test Ban Treaty (CTBT) (Joseph, S. V., & Mucheli, R. R. (2024, March 9)

India actually had a capacity to impede the CTBT due to an arrangement among the settlement's advocates that all "atomic fit" states needed to sign and endorse the deal for it to come full circle. Consequently, it seemed possible that India could wind up having sole liability regarding making a general CTBT unattainable, bringing about incredible tension on India to sign. For sure, India had made the main proposition requiring a prohibition on all testing in 1954 and had given an explanation in 1994 supporting the treaty. China's explosion of an atomic test, four days after the vote in May 1995 broadening the NPT

endlessly, made in the personalities of the Indian bomb hall an ideal trifecta compromising Indian security: a China with tried atomic weapons and every one of the honours concurred an extremely durable individual from the UN Security Council (UNSC); a NPT that consigns India for all time to second level "non-weapon" status; and an impending CTBT that could keep India from testing new weapons intended to be conveyed by Prithvi and Agni missiles (Medal, J., & Rennack, D, 1998, November 24).

Subsequently, the bomb entryway compelled top state leader Narasimha Rao to approve the tests. Rao directed a progression of surveys that reasoned that the tests could monetarily affect India. US passed a rigid 1994.sanctions bill called the Nuclear Proliferation Prevention Act (NPPA) supported by Representative John Glenn (leftist of Ohio).

India chose to defer the test after its survey of the outcomes. In April May 1996, Indian public decisions were held; the Congress Party was crushed, and the Bharatiya Janata Party (BJP) was approached to shape an administration, headed by Atal Behari Vajpayee. Although the BJP had upheld a nuclearised India for a considerable length of time, and its mission stage included working out "the choice to enlist atomic weapons,". Vajpayee didn't approve the test during the 12 days he was in office prior to losing a demonstration of positive support. Did that approaching vote cause the deferment, or did the BJP need additional opportunity to comprehend the financial results of testing because of the U.S. regulation? Regardless, the succeeding government, headed by H.D. Deve Gowda and later by Unfamiliar Clergyman I.K. Gujral, likewise, didn't organisation an atomic test. Three years went by before the BJP got back to contro(Weiss, L. 2007). The 1995 arrangements for a test by India were still set up, and everything that was required was an

administration choice to "press the button," which the BJP gave. It is clear that the BJP felt areas of strength adequately to endure the political reaction from the monetary assets against India that were supposed to follow. They contemplated accurately that following an Indian test, Pakistan would be feeling the squeeze to follow after accordingly, and that, except if the US changed its strategy of treating India and Pakistan in a fair manner, similar authorizations would be visited on Pakistan all things considered, since the Pakistani economy was more helpless against financial approvals than that of India, the US would take a chance with a monetary breakdown in Pakistan with obscure ramifications for the destiny of Pakistan's atomic weapons. Also, sanctions because of reasons other than aiding U.S. organisations become more serious in global business sectors are not a well known international strategy device with the U.S. business local area or its unwavering allies in Congress. India without a doubt felt it could proceed with a well balanced plan of action that the US would either not force the full array of approvals under the NPPA or not save them for long.⁹ That ended up being the situation. India's tests happened on May 11 and 13, 1998, and were followed by Pakistan's tests on May 28 and 30 (Weiss, L. 2007).

The tests were impugned by the UN Security Chamber, which embraced UNSC Goal 1172, approaching India and Pakistan to stop and move back their weapons programs, sign the CTBT, and take part in talks toward a Fissile Material Cutoff Treaty (FMCT). Sanctions under U.S. regulation started to be forced. The declaration of the approvals caused a serious drop in the Indian financial exchange, and Pakistani unfamiliar trade holds tumbled to a hazardous level. Yet, the approvals hurt business in the US also. Pakistan was going to demand offers for the offer of \$40 million worth of wheat, a ware

that U.S. horticultural interests in various states had been offering to Pakistan for quite a long time utilising the Export Credit Guarantee Program(ECGP) (PTI. (2015, October 14).

The approvals would keep that program from being utilised for Pakistan, likely making U.S. offers uncompetitive. Uproarious grumblings from farming interests brought about Congress, with the backing of the Clinton administration, passing the Agrarian Help Demonstration of 1998 on July 14, which eliminated the limitations on rural help to India and Pakistan. The next day, a change by Representative Sam Brownback (Republic of Kansas) was passed in the Senate giving the president the position to defer all financial approvals for a time of one year (The Hindu.2015, February 14)

In the meantime, a progression of strategic discussions with India had started including Deputy Secretary of State Strobe Talbott and Indian External Affairs Minister Jaswant Singh. Fourteen such gatherings were held in which Talbott attempted to get India to sign a CTBT, freeze its creation of fissile material and work toward a FMCT, foster no new rockets, further develop send out controls, and draw in Pakistan on Kashmir. Singh said that India would sign the CTBT provided that the weapon states consented to atomic demilitarisation on a specific plan, however he consented to fix India's fissile material controls and begin a discourse with Pakistan. The discussions were obviously going no place, yet the business local area was campaigning vigorously for lifting in any event a few authorizations, and on October 15, 1999, another amendment was passed, giving the president the position to postpone all NPPA sanctions on India and Pakistan with no dusk arrangement. What's more, the president could defer the approval arrangements of the Symington and Pressler amendments for Pakistan (Gwertzman, B. 2006, March 6).

This authority was practised by President Bill Clinton the next month and in ensuing years, permitting, in addition to other things, India and Pakistan to get advances and credits from global lending organisations, and Pakistan to get some tactical help from the US, however the atomic and other high-innovation bans remained (Rydel, R. J,1999). U.S. backtracking on sanctions notwithstanding shocking demonstrations of expansion had points of reference. The Reagan administration during the 1980s gave various waivers of authorizations for Pakistani infringement of U.S. limitation regulations to help the mujahideen in Afghanistan against the Soviets. The activities by Congress and the Clinton administration in 1998 and 1999 demonstrated the way that the US couldn't endure the expenses of certain authorizations even despite the most noticeable proof of proliferation atomic blasts. The fleeting approvals significantly affected the Indian economy. While the tests didn't prompt a disentangling of the NPT system, they had significant impacts in alternate ways (Rydel, R. J,1999).

2.4 NEW STEPS IN U.S. POLICY TOWARD INDIA

The 1998 tests caused a postponement in President Clinton's plans to visit India, but after he criticised Pakistan for its attack on the Indian Army at Kargil in 1999, he was issued a renewed invitation, which he accepted. The visit occurred in March 2000 and was a great success in moving the U.S.-India relationship forward. U.S. companies signed agreements with Indian and Bangladeshi firms worth billions. U.S. Export-Import Bank support for U.S. exports to India, which was allowed via the exercise of a presidential waiver, was raised to \$2 billion, and some remaining economic sanctions stemming from

the 1998 tests were lifted. Later that year, Vajpayee paid a 10-day visit to the United States, where he addressed a joint session of Congress and was guest of honour at a state dinner at the White House. During his visit, additional Export-Import Bank financing to help Indian businesses purchase U.S. goods and services was announced (Riedel, B.1999, July).

In addition, U.S. companies signed agreements to construct three large (non-nuclear) power projects in India, valued at \$6 billion. But the Clinton administration, while strongly interested in improving bilateral relations with India, would not engage in any nuclear- or military-related trade as long as India refused to make any concessions regarding its nuclear program. India clearly felt that it needed to build its program further before giving any serious consideration to a CTBT or FMCT. Its formulation for stating this was that it sought a “Minimum Credible Deterrent”.

These are restatements of the positions taken by both countries during the Talbott-Singh discussions. But the warming of relations since then, plus other factors, suggested already that the nuclear impasse could be overcome. The time was clearly not ripe so soon after the nuclear tests for the United States to send a signal that a new nuclear policy toward India was under consideration. The politics were still too sensitive. But consider the following elements, which combine to make an eventual change in policy compelling. First, the collapse of sanctions meant there was little downside to an Indian decision to produce more nuclear weapons. Thus, India now had little impediment to eventually reach its goal of a “minimum credible deterrent” regardless of how defined. Scholars of Indian doctrine have concluded that Indian decisionmakers view their nuclear weapons as a pure deterrent rather than as an instrument of war, meaning that a relatively small

nuclear force would be enough to protect India from nuclear blackmail by China or Pakistan (Riedel, B. 1999, July 4).

Therefore, once having reached some sort of deterrent/prestige parity with its nuclear rivals, particularly China, India could then support a permanent test ban and a halt to its production of fissile material for weapons as long as China (and Pakistan which was sure to follow) did the same. Moreover, having reached such a point in its nuclear development, it would make no sense for India to keep its breeder program unsafeguarded. Second, unlike with Pakistan, there is no perception in the United States that Indian weapons are a national security threat to the United States. Third, there are growing mutual interests between India and the United States on international security and on improving economic ties. Fourth, unlike with the Soviet Union during the Cold War, there is no ongoing reinforcement of antipathy toward India among the general U.S. population because of India's past nuclear violations. There is no record of the sustainability of embargos for an indefinitely long period without an extant and clear national security threat. Fifth, the growing problem of global warming, plus pro-nuclear propaganda that India's expansion of nuclear power would help the global commons, can also feed public support for a nuclear deal. Sixth, the growing power of the Indian diaspora in the United States is a powerful incentive for politicians to look with favour on the U.S.-India deal (Carnegie Endowment for International Peace. 2000, October 29)..

While these points would not be sufficient to engender support for India to be admitted to the NPT as a nuclear weapon state (which would be difficult to effect in any case due to the rules of the treaty), an alternative status recognizing India's weapons while requiring some nonproliferation standards accepted by weapon states but more stringent on

safeguards was now feasible to consider in order for India to receive nuclear trade. If India, after achieving its “minimum credible deterrent,” were to do what logic suggests, that is to accept a CTBT and FMCT and put its breeder program under safeguards. Then, given the global warming situation, the desire to improve bilateral relations, and the force of domestic U.S. politics, the issue of India’s failure to adopt full-scope safeguards would be bypassed, and almost any U.S. administration would find civilian nuclear trade with India politically acceptable. Thus, a nuclear relationship with India was simply a matter of time. Few, however, thought the time was ripe prior to the 2000 U.S. election. Attempting such an agreement at such an early time was bound to cause difficulties on all sides, especially with India’s history of antipathy to global nonproliferation norms and the current insecurity and suspicions of its nuclear lobby (Riedel, B. 1999, July 4) .

CHAPTER 3

KEY DIPLOMATIC, DEFENCE, AND SECURITY DEVELOPMENTS IN 21ST CENTURY

3.1 21ST CENTURY: DEEPENING TIES DEFENCE AGREEMENTS AND STRATEGIC CONVERGENCE

The end of the Cold War started propitiously for India-US defence relations after India gave the US refuelling freedoms during the main Gulf War. Indo-US defence collaboration was strengthened by the Kicklighter recommendations which suggested that Indo-US defence participation and military-to-military ties could be advanced through joint workshops, exercises, and so forth, and mooted extending the defence collaboration system. (MacDonald, 2003) Executive Steering Groups² were laid out in both nations in order to extend military-to military collaboration. In February 1992, Indian and US Armed force and Paratroop soldiers held their most memorable joint training exercise, codenamed 'Teak Iroquois 2, trailed by one more practice in October 1993. Thus, the two countries' naval forces directed joint practices in the Indian Sea in May 1992 and September 1995 and 1996, with regards to the US strategy of cooperative engagement

with cordial militaries. In 1995, India and the US signed the Agreed Minutes of Defence Relation , which turned into the underpinning of security relations between New Delhi and Washington till the New Framework for the India-US Defence Relationship was endorsed in 2005. (Krishnan. A, Peri.D, Bhattacharjee K, 2020)

According to the 1995 arrangement, respective collaboration was looked to be accomplished through multi-connections at the degrees of Defence Ministries; service to service(administrative) ; defence research and production as additionally at the level of senior officials from the Department of Defence and the US Office of the defence. Three gatherings were made to help conversation and work on collaborations. These were the:

- Joint Defence Policy Group (JDPG) of the Department of Defence for handling issues of defence participation. It was intended to survey issues of joint concern, for example, post-Cold war security arranging and strategy points of view on the two sides, to give strategy direction to the Joint Technical Group and Joint Steering Committee. The joint Indo-US Ministries Department of Defence Grouping additionally handled delicate issues like the CTBT and Kashmir. (MEA, 1995)
- Joint Technical Group (JTG) for examining issues connected with defence exploration and production participation, which was pointed toward upgrading the degree and content of agreeable guard examination and creation exercises. In any case, this was to be inside the regulations, approaches and settlement responsibilities of every country. (MEA, 1995)
- Joint Steering Committee (JSC) to expand the recurrence and extent of service to service collaboration. It was concurred that the accentuation of such collaboration

would be on proficient contacts and utilitarian participation, undeniable level trades, presence of eyewitnesses at one another's tactical activities, participation at workshops on subjects of common expert interest, proficient/specialised preparing and joint activities at continuously more elevated levels of scale and refinement. (MEA, 1995)

The Agreed Minutes advanced more prominent shared understanding, worked with more prominent association, recognizable proof of issues of common concern, prompted undeniable level visits and more joint activities. In any case, the US focused on that arms deals and moves of innovation were not a piece of the arrangement and that no arms/innovation move would be finished to the detriment of Pakistan. The DPG is even today the great instrument to direct India-US defence relations. Relations experienced a plunge directly following India's atomic tests in 1998. Losing no time, the US forced sanctions on India under the arrangements of the Arms Export Control Act(AECA) which (in addition to other things) ended military deals with India and pulled out item support for the F-404 motors in India's LCA project. Large numbers of these authorisations were lifted between 1998-2000 by President Clinton and President Bush lifted them absolutely on September 22, 2001. This adjustment of America's approach was impelled by India's speedy reaction to the 9/11 assaults and its help for the US battle on terrorist attack (Mohanty. DR and Purushothaman, 2021). The lifting of approvals made ready for a significant improvement in defence relations and thus prompted significant arms buys by India from the (US Office of Public Affairs, 2022, December 12).

The India-US Defence Policy Group, which was slowed down after the 1998 atomic tests, was resuscitated in 2001 and presently meets consistently. In 2000, sanctions forced on

India were renounced and from that point forward guard collaboration among India and the US has arrived at another high defence sales, joint military activities, informed authority trades, high level visits and workshops and meetings are the significant parts of the new Indo-US defence relationship. The principal significant arms deal to India was in 2002, when India purchased 12 counter-battery radar sets ("Firefinder" radars) worth \$190 million. In 2003, India became qualified for Excess Defence Articles (EDA) on award premise under the US Foreign Assistance Act. This was intended to help the conflict on psychological oppression, advance interoperability of frameworks and to modernise recently sold hardware.(Mustra V, 2023 April)

This was trailed by an earth shattering understanding, the Next Steps in Strategic Partnership (NSSP), which was endorsed in January 2004. The NSSP looked to grow participation on atomic and regular citizen space innovation, rocket safeguard and double use high technology exchange. One more settlement on the High Innovation Exchange brought about the expulsion of ISRO from the US Element Rundown. After the tsunami struck in 2004, the military of the two nations worked alongside those of Japan and Australia in a multilateral calamity the board exertion, showing that collaboration in the tactical field was not generally obliged by 39 regulatory customs. The following huge advancement accompanied the ten-year 'New Framework in the India-US Defence Relationship' ' endorsed on June 28, 2005, which graphs a course for defence relations before long as a critical part of the expanding Indo-US vital organisation. (MEA, 2005, July 15) This supplanted the Agreed Minutes of 1995 and tries to eliminate common doubt of the past and supplant it with a functioning plan for military participation

The Agreement aimed at advancing “shared security interests”, namely:

- · Maintaining security and stability;
- · Defeating terrorism and violent religious extremism;
- · Preventing the spread of weapons of mass destruction and associated materials, data, and technologies and;
- · Protecting the free flow of commerce via land, air and sea lanes.

In pursuit of these interests, India and USA agreed to:

- a) Conduct joint and combined exercises and exchanges;
- b) Collaborate in multinational operations if it is in common interest;
- c) Strengthen capabilities of militaries to promote security and defeat terrorism;
- d) Promote regional and global peace and stability;
- e) Enhance capabilities to combat the proliferation of weapons of mass destruction;
- f) Increase opportunities for technology transfer, collaboration, coproduction, and research and development;
- g) Expand collaboration relating to missile defence;
- h) Strengthen abilities of the Armed Forces to respond quickly to disasters, including in combined operations;
- i) Conduct successful peacekeeping operations;
- j) Conduct and increase exchanges of intelligence

Under this design, the framework for cooperation was furthermore supported with the creation of the Defence Procurement and Production Group and the Joint Working Group on Protection , under the careful two-sided part of the Defence Strategy Group Medal, J.,

& Rennack, D. (1998, November 24). In 2006, India bought the USS Trenton, a decommissioned American land and/or water capable vehicle dock, for \$44 million. This was consequently named the INS Jalashwa. Thus, India fired through one more \$39 million on six Sikorsky UH3H Sea King helicopters. (Rajghatta, 2007)

In 2008, India decided to buy six C-130J Hercules military vehicle aircraft worth nearly \$1 billion from the US. That very year, the Indo-US normal nuclear arrangement*was stamped, showing the creating trust between the two countries. In 2009, India purchased eight P-8I maritime observation planes worth \$2.1 billion, six C-1301J vehicle planes worth \$1 billion and 99 fly engines for the Tejas LCA worth around \$800 million from General Electric. During his visit to India, President Obama affirmed that Washington would sell New Delhi US military equipment worth \$5 billion, including ten C-17 Globemaster III military vehicle aircrafts and 100 F-414 Warrior aircrafts. The Security Participation Demonstration of 2010 (P.L. 111-266) supported. the President to move to India two Osprey-class waterfront minehunter ships as Excess Defence Articles. Obama similarly dispensed with as much as nine Indian defence and space-related associations from the Element Rundown. Nonetheless, the US has passed up by far the most compensating anticipated bargain, i.e., the bid for 126 new Medium Multi-Job Combat Aircraft (MMRCA) worth USD 10.4 billion. Regardless, this shouldn't impact safeguard ties between the two countries, as it was a decision subordinate essentially upon particular evaluation. The strength of Indo-US relations ought to be apparent from the way that despite its disappointment over not getting the game plan, the Pentagon has said that it will continue with its assurance cooperation with India (Rajghatta, 2007). There are more plans all set, as India has detailed a strategic modernisation for which it will spend around

\$100 billion all through the accompanying 10 years; in this way, India is a beneficial market for American arms makers. Interoperability is a basic pull out of all the stops pursuing the Indo-US defence relationship. Interoperability is possible right when the military of the two countries have some familiarity with each other's technique, structures and frameworks and when there is trust between them. Interoperability in like manner depends upon closeness of stuff. Joint exercises (which are a fundamental piece of Indo-US defence relations) are one way to deal with overhauling interoperability. ((Press Trust of India, 2008)

Since mid 2002, India and the US have held a couple of such exercises. The Indian and US maritime powers have consistently held what has been named as the Malabar Exercises. Basically, the US Marines and Indian Armed forces hold an exercise called 'Shatrugjeet', which revolves around land and water-able terrains. The Flying corps have held the 'Adapt India air' exercise and phenomenal powers of the two countries have held joint exercises called the 'Vajra Prahar'. Numerous Special Force officials from the US have gone to courses in India's Counter-Insurgency Jungle Warfare School. All through ongoing years, Indian and American powers have participated in more than sixty joint exercises and 44 military-to-military arrangement programs. `(PIB, 2021, September)

These exercises have helped with additional creating interoperability between the two militaries. Further created collaboration between the two militaries gives clout, unequivocally, to US public interests in India, South Asia and, the Middle East, as similarly across the globe. Dependable military ties with India works with the US ability to fight mental mistreatment, thwart the augmentation of nuclear materials and Weapons

of Mass Destruction, defend energy supply courses, fight piracy in the Indian Ocean, reconstruct Afghanistan and prevent the spread of drugs and narcotics. (PIB, 2005 March)

Indo-US military co-activity has wandered into joint peacekeeping exercises like the February 2003 "Shanti Way 03" in which they joined individuals from eleven distinct countries to get to know the methods and guidelines of peacekeeping in a multilateral environment. Anyway the upsides of extended military correspondence and responsibility will be unimportant and testing to quantify briefly, they are basically just about as huge as other more evident achievements (Joshi, M. 2024, March 15). Keeping up with a more refined organisation will help with further developing appreciation of each other's methodologies and perspectives, decrease questions, advance the penchant for cooperation, make new channels of correspondence between individuals as well as establishments, as needs be laying the groundwork for meeting and possible facilitated exertion in later crises. Such ties offer enormous entryways for the militaries of India and the US, allowing their supervisors to arrive at one another during 'time-sensitive conditions' or lessening the plans expected before noting a trademark disaster. In this way, military-to-military association among India and the US has extended through and through, expansion and repeat beginning around 2001 and India is today the US' greatest planning accessory; the last choice is most likely going to replace Israel as the second greatest weapons supplier to India soon (Joshi, M,2024, March 15).

3.2 ENGAGEMENTS: FOUNDATIONAL AGREEMENT AND GEOPOLITICAL THEATRES

The India-US vital organisation has developed over the course of the years into a huge directing power in their respective relations. Following quite a while of non-alignment and low profile, India began to understand the need to foster ties with the US towards the finish of the Cold war because of different elements. In any case, it was during the Administration of George W. Bush, when India began assuming a fundamental part in the US international strategy towards Asia. The two nations have gone into a progression of respective defence and security arrangements, including the four foundational agreements during this period. From military to financial interest, India and the US have tracked areas of strength down for collaboration. For the US, countering China comes at the highest point of its Indo-Pacific plan through all suitable means including reinforcing and equipping India. For India, the help coming from the US aid accomplishing its vision of regional strength. Moreover, the US' ventures and admittance to the Indian market demonstrates value for the two nations. India has not just accessed innovative US weapon frameworks however to exceptionally delicate ongoing knowledge information from the US. These are adding to the Indian power modernization and intensity with extreme ramifications for regional states (Samuel, 2007).

India and the US have signed four foundational agreements for enhanced military cooperation. The arrangements range from sharing and protecting military information to the basing and refuelling of aircraft and joint exercises. These agreements provide the necessary groundwork and create common standards and systems to enhance interoperability between militaries and frameworks for the sale and transfer of high-end

technologies. For the US, these are routine agreements that it signs with its partners. However, the deals have met scepticism and even opposition in India. New Delhi has raised concerns on the intrusion of the US into the Indian communication systems after signing these agreements. Therefore, the two sides have amended the contracts and tailored them to remove Indian concerns. (Rosen. M and Jackson. D, 2017).

General Security of Military Information Agreement

General Security of Military Information Agreement (GSOMIA) was the first foundational agreement signed between the two countries in 2002. The deal facilitated more generous intelligence sharing between the two countries. It also obligated both countries to protect each other's sensitive information. The discussions on the Indian request to purchase F-5G aircraft fell apart in 1981 due to the American concerns. The apprehensions were related to the leaking of sensitive information about the effectiveness of engines of the Soviet Union, and the use of technologies to advance other areas such as nuclear, space, and dual-use technologies by India. Therefore, both countries signed a Memorandum of Understanding (MoU) on technology transfer in 1984. However, the US insisted on signing GSOMIA as an additional condition and India kept refusing to sign it until 2002. (Wang S, 2019)

Besides, the agreement was a significant development in that it was signed after the removal of the US sanctions imposed on India after the latter's nuclear tests in 1998. For India, the Global War on Terror (GWOt) after the 9/11 attacks also provided the impetus for it to sign the agreement. Other factors such as the need to explore new options to diversify its defence procurement after the collapse of the Soviet Union also affect the

Indian decision making (Samuel, 2007). The agreement also paved the way for broader India-US cooperation and the signing of more deals in the future. India and the US started several military exercises after this arrangement, including the resumption of the Malabar naval exercise in 2002. (Varma. A, 2017)

Furthermore, New Delhi and Washington signed an extension to the GSOMIA, the Industrial Security Annex (ISA) in 2019, during the 2+2 ministerial dialogue. ISA allows the US defence companies to partner with the Indian private sector to manufacture military platforms, including fighter jets (Wang. S, 2019).

Logistics Exchange Memorandum Agreement

Logistics Exchange Memorandum of Agreement (LEMOA) was the second essential understanding endorsed between the two nations in 2016. It is the Indian adaptation of the Logistic Support Agreement (LSA). LEMOA permits the two nations to get to the assigned military offices on one or the other side for refuelling and replenishment. Prior, the instalments for holding practices at one another's offices were made each time they were held. Nonetheless, under the LEMOA (Peri, 2016), a system including accounting and arrangement of assigned LEMOA officials has been laid out among different means to settle instalment issues. Plus, the understanding covers joint military activities, preparing, port calls, helpful missions, and other commonly concurred military activities. The extent of strategic help under this arrangement is shared with not to cover hostile weapons. The agreement permits just calculated help and not the putting together of the military with respect to one another's bases. "The term 'calculated help, supplies, and administrations' means food; billeting; transportation (counting carrier); petroleum oils;

greases; clothing; interchanges administrations; clinical benefits; ammo; base activities backing (and development occurrence to base tasks support); capacity administrations; utilisation of offices; preparing administrations; spare parts and components; fix and upkeep administrations; alignment administrations; and port administrations (Rosen MQ Jaeleson. D, 2017). Such terms incorporate brief utilisation of general purpose vehicles and other non-deadly things of military hardware which are not assigned as critical military gear on the US Munition List proclaimed in accordance with segment 38(a)(1) of the "Arms Product Control Act".

LEMOA is fundamentally helpful to the Indian Naval force. It is assisting India with expanding its maritime effort complex because of the calculated help accessible at the US bases across the world. It is additionally upgrading the preparation and abilities of the Indian Naval force. (Munir. Z, 2016).

Communications Compatibility and Security Agreement

The third essential agreement, Communications Compatibility and Security Agreement (COMCASA) was endorsed during the debut 2+2 defence and foreign ministry discourse of India and the US in 2018. COMCASA is the changed adaptation of the Communications and Information Security Memorandums of Agreement (CISMOA) very much like the LEMOA. (Business Standard, 2018 June).

LEMOA, which is restricted to strategies as it were. The US keeps up with that the COMCASA is a "technology enabler" helping the exchange of high-tech avionics, encrypted communication, and electronic systems to India as well as ensuring the secrecy of its C4ISR (Command, Control, Communications, Computers, Intelligence,

Surveillance, and Reconnaissance) systems. It likewise lays out secure communication channels and administrations. (Peri, D, 2018).

Furthermore, COMCASA permits the US to move to India encrypted communication on the US-provided stages like the C-17, C-130, and P-8Is. These stages utilise business level communication technologies without COMCASA (Malick BK, 2018). The understanding is escalating the combination of India's few military platforms and thus increasing their strategic communication capacities. It will likewise permit the US to introduce Identification Friend or Foe (IFF) on P-8I, transfer single channel ground airborne radio systems, digital transponders, secure voice terminals, and satellite communication (SATCOM) trans-receivers. Comparably, it will empower the US to send out a high level form of robots to India (Pandit, 2018).

Nonetheless, India has a few worries over the CISMOA understanding. Those incorporate information leakage, seeing it as a nosy measure, US entrance of India's order and control, and furthermore decreased strategic autonomy of India. CISMOA expected US authorities to enter, introduce and investigate US respectability hardware at Indian military offices and stages. India likewise hosted dreaded information leakage to third parties including Pakistan that works US-made F-16 aircraft. It is likewise a concern that the entrance of the US in the Indian command and control will empower it to pay attention to or screen India's correspondence in tasks and offer it with outsiders, for example, Pakistan where the US is nonpartisan or ill-disposed. (The News, 2019)

Basic Exchange and Cooperation Agreement

The Basic Exchange and Cooperation Agreement (BECA) for geo-spatial cooperation, was recently signed during the third 2+2 ministerial dialogue on October 28, 2020. It is the last of the four foundational agreements signed between both countries (The Hindu, 2020).

The agreement would allow India access to real-time US topographical, nautical, and aeronautical data. The data will facilitate India in the navigation of missiles and drones, and the planning of forces. It will also enable India to receive training at the US National Geospatial Intelligence College. Also, BECA will greatly help India as the country has technical and technological limitations in these areas (Mishra A, 2020). Likewise, it will provide a framework for India to receive advanced navigational aids and avionics on the US provided aircraft, the absence of which has affected the navigational and flight management of them. Besides, BECA is an umbrella agreement under which the Department of Defence (DOD) and National Geospatial Agency (NGA) can sign a subsidiary agreement with their Indian counterparts. The US has signed such agreements with 57 countries. (RK Sharma, 2016).

3.3 IMPLICATION FOR THE REGION

Ratification of these foundational agreements escalates the Indo-US vital association. India seems to be on the receiving end of crucial technological and technical information and systems. In any case, such nearer Indo-US Strategic Partnership has security repercussions for the region. According to the US point of view, the cooperation aims to arm India against China principally. In any case, India has more objectives to accomplish

from this association other than countering China. The expansion in India's conventional and strategic abilities will build its provincial strength. Realtime and delicate data alongside the high level weapons frameworks, will likewise significantly influence Indian relationship with Pakistan. (Pandit R, 2018).

However, every one of the four agreements have ramifications of various nature. The extent of GSOMIA, COMCASA, and BECA is connected with mostly intelligence and information security and sharing and thus has more security implications, the LEMOA is worried about with logistics and services and has a different impact on Indian military build-up than the other three, which are related to intelligence, communication, and data and technology sharing. (RK Sharma , 2016). Also, India has acquired 11000 Extreme Cold Weather Clothing System (ECWCS) units from the US, made conceivable by LEMOA. The attire framework will be given to the Indian Armed force sent in Ladakh during the winter. (Mishra. A, 2020) Moreover, COMCASA and BECA will empower India truly by giving weapons systems and fundamental aides. The plans will likewise guarantee the two-sided trade of unclassified information which can give focusing on navigation aid, thereby, increasing the accuracy of Indian ballistic and cruise missiles and armed drones. Correspondingly, Indian supersonic and hypersonic weapons will likewise get profited from these progressions. These improvements will add to the counterforce enticements of India. Plus, the improved situational familiarity with India will likewise add to its arrangements of careful strikes inside Pakistan. (Pandit. R, 2018).

Correspondingly, India can direct drone strikes across the Line of Control (LoC) with the assistance of geospatial information obtained under BECA. A similar understanding will help New Delhi in broad observing of exercises on the northern and western border. The

Indian military can, in this way, get ready conveniently to answer those exercises. (Business Live, 2020 March)

Purportedly, India marked the COMCASA manage the US after the US impacted its dynamic on the understanding by giving knowledge data on the sending of the Chinese powers, which ended up being advantageous to India during the Doklam Standoff in 2017. (Swarya, 2018).

Likewise, India has marked BECA months after the new stalemate in Ladakh. It shows the Indian reasoning of expanding collaboration with the US to reinforce its situation in an emergency with China or Pakistan. More modest territorial nations in South Asia will likewise confront what is going on. Indian decisiveness on them will build as its military and political commitment with the US increases. They might be compelled to pick or conflict with the interests of the US and India. India's emphaticness is additionally expanding in its two-sided relations with them. (Sulthan.A, 2020).

Through The Lens of Indo-Pacific & QUAD

"The future of each of our nations- and indeed the world- depends on a free and open Indo-Pacific enduring and flourishing in the decades ahead," Joe Biden (Quad Leader's Summit 2021). Several nations in South Asia and the West have an Indo-Pacific approach in their foreign policy due to the strategic location and the growing significance of the ocean and their surrounding nations in recent times. (Tavda.K, 2022). At the 2017 APEC Summit, Donald Trump used the term "Indo-Pacific," later, the US Pacific Command was

renamed the Indo-Pacific. India's External Affairs Minister, Jaishankar, mentions in his book, "The India Way: Strategies for an Uncertain World." The author describes the complex landscape of contemporary geopolitics and provides intricate evidence of how Indian foreign policy puts national interests in priority. For instance, in the Indo-Pacific area, Jaishankar describes, 'For the U.S., a unified theatre addresses convergence that is central to its new posture.' The U.S. has changed its stance and views due to the rise of China in this region. (Gupta.A, 2020).

This changed stance deepened India-U.S. relations from just being a hard power to a combination of both hard and soft power. The U.S. reaffirmed the idea of a free and open Indo-Pacific strategy on several occasions but India asserted the idea of a free, open, and inclusive Indo-Pacific (FOIP). The U.S. views India as a potential nation to counterbalance China's growing hegemony in this region and focuses on solidifying its ties with India through cooperation, connectivity, and strategic partnerships. According to the U.S. policymakers, they desire this region to have a multilateral relationship of 'understandings, agreements, and alliances.' India is considered a "net security provider" to preserve maritime transportation routes and global commons in the Indian Ocean. (White House, 2021 October).

According to the Biden administration, the U.S. government recognizes India as a "like-minded partner and leader in South Asia and the Indian Ocean, active in and connected to Southeast Asia, a driving force of the Quad and other regional fora, and an engine for regional growth and development." (White House, 2021 October).

Coming to the Quadrilateral Security Dialogue (QUAD), it is a regional and security alliance between the US, India, Australia, and Japan. The primary aim is a free, open, prosperous, and inclusive Indo-Pacific region. This strategic forum, especially between the U.S. and India, is strengthening through shared priorities in the Indo-Pacific. For all the partners, this informal grouping is an opportunity to maintain the sea routes free from any influence and build a cooperative global region. The first in-person QUAD meeting was conducted in 2021, where a joint statement was also issued, which came to be known as 'The Spirit of the Quad.' The leaders in the summit brought upon development, cooperation in the Indo-Pacific, vaccines, technology, climate change, and supply chain management. (ORF, 2021, April).

The five focus areas released by the 'U.S. Indo-Pacific Strategy 2022' refers to India as a "like-minded partner" and "driving force" in the QUAD. The U.S. shift in the power dynamics by enhancing military alliances with existing and new nations has been in the limelight in recent years. (White House, 2022 June). U.S. policymakers envision freedom of navigation for all and maritime security by deepening the defence capabilities of the partner nations. The Indo-Pacific Economic Framework for Prosperity (I.P.E.F.) is one major initiative launched by the Biden administration recently for the economic corporations through trade, a resilient economy, clean energy, and a fair economy. The recent 2023 summit was called off but was carried on the sidelines of the G7 Summit. (PIB, 2023 March). New initiatives emanated from the meeting in areas of education, new undersea cable infrastructure projects, clean energy, technology, maritime, space, health, and cyber. In 2022, Joe Biden initiated the Indo-Pacific Partnership for Maritime Domain Awareness (I.P.M.D.A.). In 2023, the progress of the same was marked, and new steps to

enhance it using satellite-based radio frequency were discussed. India views the US in the Indo-Pacific as a strategic partner to advance the Indo-Pacific vision and counter any traditional and non-traditional threats. (IPMDA, 2023)

Military Collaboration: Joint Exercises

Starting around 2002, the US and India have been expanding the extension, intricacy, and recurrence of joint military exercise, with an emphasis on maritime security and interoperability. India presently leads more activities and staff cooperation with the US than with any other country.

Yudh Abhyas (Armed force): The 19th release of the main reciprocal ground powers practice was held at Alaska, in October 2023. Components of the U.S. Armed force's Eleventh Airborne Division participated. The activities are held at the contingent level (approximately 250 soldiers from every military), alongside detachment level mission arranging (PIB, September 2023).

Vajra Prahar (Army Special Forces): U.S. furthermore, Indian Special Force warriors have held 14 joint activities beginning around 2010, and many U.S. Special Force officers have gone to India's Counter-Insurgency Jungle Warfare School. The latest version of this company level activity was held in northeastern India in November 2023. (PIB, November 2023).

Cope India (Air Force): First held in 2004 as a contender fly preparation practice in northern India. In 2018, the two nations' aviation based armed forces relaunched these activities after a nine year break. Cope India 2023, held in April, was the 6th and biggest

cycle ever, and incorporated the support of U.S. Air Force B-1B planes and F-15 combat aircrafts (PIB, April 2023).

Tiger Triumph(tri-service): In 2019, U.S. furthermore, Indian powers led their very first tri-service practice in the Sound of Bengal. The activity, intended to foster interoperability for philanthropic and debacle alleviation tasks, involved in excess of 500 U.S. Marines and Sailors, and around 1,200 Indian warriors, mariners, and pilots, alongside U.S. what's more, Indian Naval force vessels. Other remarkable activities incorporate Tarkash joint ground force counter-terrorism practices which include U.S. Special Forces and India's National Security Guard troops, and Sangam Naval Special Force practices which unite companies of U.S. Navy SEALs and the Indian Naval force's Marine Commando Force (Economic Times, 2023).

Multilateral Military Activities Malabar (Naval force): The US and India introduced Malabar in 1992 as a respective maritime activity. Japan joined in 2014 and turned into a super durable member the following year. Australia's cooperation started in 2020, uniting maritime powers from every one of the four Quadrilateral Security Dialogue (Quad) nations interestingly since help activities directed following the 20th 2004 Indian Ocean tsunami wave. Malabar's 27 th version, facilitated interestingly by Australia in August 2023, involved a few surface boats, alongside maritime patrol aircrafts, helicopters, and submarines. Taking an interest, the U.S force included a guided-missile destroyer, a fleet oiler, a submarine, and aircraft. India sent a destroyer, a frigate, and a P-8I Poseidon aircraft. (Koushik, 2020), (PIB Tourism, 2023)

Rim-of-the-Pacific (RIMPAC, Naval force): The biennial RIMPAC allegedly is the world's biggest maritime exercise .The 28th version, held close to Hawaii with the

cooperation of 26 nations in summer 2022, incorporated an Indian Naval force frigate and a sea watch aeroplane (PIB, June 2022)

Milan (Naval force): India has this biennial Bay of Bengal Exercise (PIB, 2022), first held in 1994 with the powers of five Southeast Asian countries. The U.S. Naval force previously partook in the mid 2022 release the biggest ever sending a destroyer and a maritime patrol aircraft. This cycle included 42 countries, 26 warships, 21 aircraft, and a submarine. Over 50 nations joined February 2024 release (US Third Fleet public affairs, 2024)

Cutlass Express (Navy): In 2019, an Indian Navy frigate participated in maritime exercises held near Djibouti and sponsored by the Pentagon's Africa Command. The March 2023 edition sponsored jointly with the U.S. Central Command took place off Djibouti, Kenya, and Mauritius, and again included an Indian Navy frigate (PIB, March 2023).

La Perouse (Naval force): A two-day Indian Ocean exercise sponsored by France united components from five naval forces (Quad in addition to France) in 2023, including a stealth frigate and fleet tanker from the Indian Navy force. Ocean.

Sea Dragon (Naval force): This anti-submarine warfare theatre exercise held near Guam in March 2023 included forces from the Quad (among them an Indian Navy P-8I maritime patrol aircraft), plus Canada and South Korea (India News Network, 2024).

Pitch Black (Air Force): Australia has this biennial lowlight fighting activity, held generally as of late mid-2022, and including powers from 17 nations, including an Indian group of four battle and transport aircraft . (PIB, September 2022).

Red Flag (Air Force): The U.S. Air Force conducts aerial combat exercises with units from allied and partner countries several times each year in the United States. Indian combat aircraft and tankers joined in 2008 and 2016 (PIB, May 2016).

Other notable Issues India joined the U.S.- directed, Bahrain-based Combined Maritime Force (CMF) as a partner accomplice in 2022 (Peri. D, 2022). This multinational naval partnership has 34 members and oversees four Joint Task Forces focused on counter-narcotics, counter-smuggling, and counter-piracy. India's Defense Exhibition (DefExpo) is a biennial showcasing of Indian defence wares. The October 2022 edition, held in western India, was the twelfth and biggest ever, drawing in members from 75 nations, including the US, and in excess of 1,300 companies (PIB, 2022 Feb). Aero India is a biennial flying demonstration and presentation held beginning around 1996 in southern India, and coordinated by India's Ministry of Defense and Air Force. Purportedly Asia's biggest aviation expo, the February 2023 cycle included in excess of 730 exhibitors, and the US showed large numbers of its most progressive military aircraft. Various U.S. Defence companies took part, as did the biggest ever delegation of U.S. ambassadors (Hindustan Times, 2022 April).

3.4 EMERGING CONCERNS IN COUNTERTERRORISM

Terrorist attack patterns in India have been confronting the danger of illegal intimidation for quite a while. It was positioned as the seventh most psychological oppression burdened country out of 163 different nations in 2015. As per the College of Maryland's Global Terrorism Data set (GTD) from 2000-2015, a sum of 7,835 passings were kept in India connected with psychological oppression, which comes to a normal of 489 passings

each year (Global Terrorism Data Set, 2016). India is known to be an ethnically, semantically and strictly different country that has managed various assaults from dissenter, secessionist and fanatic gatherings throughout the course of recent many years. These include: a Sikh uprising in the province of Punjab during the 1980s, a Muslim dissident development in the territory of Jammu and Kashmir from 1989 to the present, and different ethnic dissenter developments in the northeastern states (Jamwal, 2003). Aside from this, the test presented by liberal fanatic developments (Maoist and Naxalite) in the provincial areas of eastern and focal India is likewise a question of grave concern (Curtis, 2008). Moreover, another sort of inside security danger has arisen as the radicalization of a specific segment of the populace by fear based oppressor gatherings and coordinated criminal organisations. These dread outfits have proliferated fanatic philosophies and keep on presenting serious difficulties to India's inner security possibilities (Subramaniam, 2012). The local fear bunches have joined with transnational psychological militant gatherings that are much of the time situated in adjoining nations. Such neighbourhood components of bedlam have added another aspect to the country's illegal intimidation issue, similar to the Punjab and Kashmir issue, which had solid homegrown political factors affecting, cultivating and metastasizing homegrown discontent into dread. The imperfect political decision in Jammu and Kashmir and the production of Bhindranwale by the then-existing government to check the Akalis in Punjab delineated this situation. The solid mass analysis and developing worry over expanding fear based oppressor assaults on Indian soil has constrained the public authority to reconsider its methodology towards countering terrorism.

Indo-U.S. Counterterrorism Cooperation After 9/1

The September 11, 2001, psychological militant assault on the World Trade Center changed the definition and way which the world viewed terrorism. Not long after 9/11, the U.S. security arrangement changed and Afghanistan and Iraq were beaten by U.S. officers. Following the 9/11 assaults India offered significant help to the U.S. through the course of their counterterrorism endeavours in Afghanistan. For the first time in history the Indian Army offered its military base to the United States. The army installation was not permitted even to the USSR, which was viewed as a nearby Indian partner during cold conflict (Ashley, 2005). Prior to the initiation of the U.S.- drove Operation Enduring Freedom(OEF), India gave satellite imagery of Afghanistan to the US. Besides, the Indian Naval force likewise contributed by accompanying vessels bringing freight for military tasks through the Strait of Malacca and the Andaman .

At the diplomatic level, Indian Prime Minister Atal Bihari Vajpayee visited the United States to reaffirm India's support on counterterrorism cooperation. This visit prepared for more profound intelligence sharing between the two countries, and with New Delhi giving significantly more essential help relating to the Indian Ocean and South Asian regions.

During the visit heads of the two nations gave various approach explanations mutually on the extent of counterterrorism participation. Both the pioneers featured a joint explanation on 9 November 2001 (U.S. Division of State, 2001). That's what the assertion commented, Since September 11, individuals of the US and India have been joined as never before in the battle against psychological oppression. .

They noticed that the two nations are focused on war on terror, as found in the boorish assaults on September 11 in the US and on October 1 in Kashmir. They concurred that terrorist attacks undermine not just the security of the US and India, yet additionally our endeavours to assemble opportunity, a majority rule government and global security and solidity all over the planet. As heads of the two biggest multicultural majority rule governments, they emphasised that the people who compare psychological warfare with any religion are essentially as off-base as the individuals who summon religion to commit, support or legitimise fear monger acts. .

President Bush and head of the government Vajpayee agreed that success in this endeavour would depend heavily on building international cooperation and securing the unambiguous commitment of all nations to share information and intelligence on terrorists and deny them support, sustenance and safe havens.. The two chiefs consented to counsel consistently on the eventual fate of Afghanistan. They invited the actions illustrated in the UNSCR 1373 and approached all countries to endorse and execute the existing UN Convention on Counterterrorism. They expressed support for India's draft Comprehensive Convention on International Terrorism and urged the resolution of outstanding issues to enable its adoption by the UNGA. Head of the Government Vajpayee and President Bush concurred that improvements in Afghanistan straightforwardly affect its whole area.

They underscored that the Taliban and the Al-Qaida network have transformed Afghanistan into a focal point of terrorism, extremism, and drug trafficking and have brought immense suffering to the Afghan people. They concurred that a quiet, moderate, and prosperous Afghanistan requires an broad based government, addressing all ethnic and religious gatherings, cordial with all nations in the area and then some, as well as

sizable and supported global help for Afghanistan's financial reconstruction and improvement. The two chiefs subscribed to cooperate, and in association with different nations and global associations, to accomplish these objectives. Another undeniable level visit was made by Home Minister Lal Krishna Advani and Defence Secretary George Fernandes in January 2002, which was followed by the gathering between Foreign Minister Jaswant Sinha and U.S. National Security Advisor Condoleezza Rice. The U.S. secretaries of state and defence, alongside the other top U.S. authorities, made visits to New Delhi in 2002. Various undeniable level trades occurred in 2003 (Kronstadt, 2003). The Joint Working Group has met multiple times between 2000-2002, mirroring the significance that the two sides append to global participation in battling psychological warfare. The previous year has been a watershed for the two popular governments in defying the difficulties of terrorism . During this period, India and the US have achieved a considerable amount through their counterterrorism participation; in a joint statement(U.S. Division of State, 2002), the gathering expressed the two nations have:

- Expanded their trade of data and evaluations on the global and provincial terrorist circumstance;
- Reinforced knowledge and insightful collaboration;
- Subjectively redesigned and extended terrorist of psychological oppression preparing programs for Indian Law enforcement;
- Marked a Mutual Legal Assistance Treaty;
- Sent off bilateral Cyber Security Forum, with a colossal program of activity to address cyber-terrorism and information security;
- Acquainted military-with military participation on counterterrorism to enhance the drives of the India-U.S.Defense Policy Group around here;

- Cooperated intently on multilateral drives on psychological warfare, including the execution of UNSC Goal 1373;
- Started exchange and participation on issues like homeland/internal security, fear funding, measurable science transportation security and boundary the board; and
- Taken concrete steps to detect and counter the activities of individual terrorists and organisations of concern to the two countries. Also, the group started conversations between the U.S Technology Support Working Group and its Indian partner on India's requirements, including however not restricted to counterterrorism equipment and technology apparatuses, fundamental for upgrading border management

Another significant drive — laid out after the 9/11 assaults — was the U.S.- India Cyber Security Forum which held its most memorable gathering at New Delhi in April 2002, and the second at Washington, DC, in November 2004. The principal meeting of the U.S.- India Cyber Security Forum perceived the rising interdependence among India and the US in the information technology arena.

Collaboration between the US and India is of developing significance as the U.S. government and partnerships use information technology companies in India at a rate of about \$9 billion annually. "As this pattern expands, it is critical that our legislatures and private industry cooperate together to ensure an environment for secure transactions, networks, and software development," stated the U.S. State Department Assistant Secretary for Political-Military Affairs Lincoln P. Bloomfield, Jr., the U.S. head of delegation. During the conference, the US and India reaffirmed their obligation to collaborate on getting the internet by laying out five joint working groups and distinguishing activity plans for each private industry also identified areas to strengthen

and enhance cooperation (Embassy of India, Washington, DC, 2004). During the second meeting of the U.S.-India Cyber Security Forum, both government and industry representatives from each country convened to identify areas for collaboration in combating cyber-crime, cyber security research and development, information assurance and defence cooperation, standards and software assurance, and cyber incident management and response (U.S. Department of State, 2004).). During the second meeting of the U.S.-India Cyber Security Forum, both government and industry agents from every nation assembled to recognize regions for joint effort in battling combating cyber-crime, network safety innovative work, data affirmation and defence cooperation, guidelines and programming confirmation, and digital occurrence the board and reaction (U.S. Department of State, 2004). During the meeting underlining the significance of this proposition in counterterrorism collaboration, a press report gave in November 2004, toward the finish of the second gathering of the discussion, said: Under Secretary of State for Political Affairs Marc Grossman stressed that the U.S.- India Cyber Security Forum "holds extraordinary commitment for future participation." The Indian Head of Designation, , National Security Council Secretariat Joint Secretary Arvind Gupta, conveying an assertion to the Discussion for J.N. Dixit, India's National Security Advisor, said that "Securing cyberspace will remain one of the biggest challenges facing the international community for years to come and this Cyber Security Forum has emerged as an important bilateral mechanism to address such issues". In September 2016, the two the nations held the fifth U.S.- India Cyber Dialogue in New Delhi and conversation rotated around ways of expanding reciprocal participation on an extensive variety of digital issues and reinforcing the U.S.- India strategic partnership by (as the report states):

- Trading data on digital dangers and issues of shared concern, and examining conceivable helpful measures;
- Advancing respective collaboration on policing cybercrime issues;
- Making a component for collaboration, including setting up proper sub-gatherings;
- Certifying normal goals in worldwide digital fora, particularly the use of global regulation to state conduct in the internet, the certification of standards of mindful state conduct, and the improvement of pragmatic certainty building measures;
- Affirming support for the safeguarding of receptiveness and interoperability, improved by the multi-partner arrangement of Web administration; and, Affirming support for the protection of transparency and interoperability, improved by the multi-partner arrangement of Web administration; and,
- Planning digital limit building endeavours, incorporating testing and principles as for network safety (U.S. Government office and Departments in India, 2016). With the re-appointment of President Bramble, a significant advancement arose in the U.S.- India relationship. In July 2005, President Bush and State leader Manmohan Singh gave a Joint Assertion making plans to lay out a worldwide organisation between the US and India through expanded participation, including trades of policing rehearses, joint military preparation activities, and joint methodologies in significant global fora (U.S. Division of State, 2005).

In 2006 President Bush paid a three-day visit to India to examine implications for reinforcing the bilateral "global partnership" (Kronstadt, 2007). The requirement for participation and upgrading connections to accomplish a worldwide organisation, more prominent respective counterterrorism collaboration and a more grounded military association that incorporates defence deals has been occasionally rehashed by U.S.

authorities. The undersecretary of state, Nicholas Consumes, emphasised the requirement for more grounded Indo-U.S. relations in an article distributed in 2007 in the Washington Post, and called for "two additional goliath steps" that should be taken to accomplish it. After the 26/11 Mumbai terrorist attack, India and the US marked the Counterterrorism cooperation Drive (CCI) in July 2010 to develop cooperative endeavours, and heighten trades (The Hindu, 2010). This arrangement is based on the determined exertion made by the two state run administrations towards fighting psychological oppression and guaranteeing the residents' security. These endeavours incorporated the trading of policing, complementary visits of senior-level authorities to talk about illustrations taken in, the conduction of joint military preparation works out, and the joining of powers in the global local area on key counterterrorism issues (The White House, 2010). The Indian government was granted admittance to David Headley, an American national who admitted to partaking in arranging the 26/11 2008 Mumbai terrorist attack (Kronstadt, et al., 2010). Aside from this examination, help was additionally given by the Central Intelligence Agency (CIA) and the Federal Bureau of Investigation (FBI) faculty in the 2006 Mumbai besieging assault and the 26/11, 2008, fear assault. The FBI likewise revealed having uncommon admittance to proof and insight following the last episode, subsequent to meeting approximately 70 people, including the main enduring assailant, Ajmal Kasab. The US skill know-how in preserving and analysing forensic evidence was also shared with Indian intelligence officials.

FBI legal sciences specialists later gave face to face declarations to the Indian court attempting Ajmal Kasab also (Kronstadt, 2012). In November 2010, a Homeland Security Dialogue was introduced by President Obama during his India visit to additionally extend functional participation, counterterrorism innovation moves and limit building. Homeland

Security Secretary Janet Napolitano consequently headed out to India in mid-2011 and met with then Indian Home minister P. Chidambaram, as well as delegates of private industry, with an end goal to advance respective counterterrorism and policing (Ministry of Home , 2011). One more round of this exchange was held in May 2013, with six sub-bunches guiding participation in unambiguous regions. Organisation to organisation commitment is being encouraged on a wide exhibit of significant issues, including counter narcotic, counterfeit currency, illicit financing and transnational crime, infrastructure security, transportation and trade, coastal security, and large-city policing (Kronstadt, 2012). In 2015, police commissioners from India paid a visit to the United States to learn the practices of megacity policing.

In the meantime, in September 2014 Top state leader Narendra Modi visited the US on the greeting of President Obama, 90 days in the wake of framing his administration. The visit was followed by President Obama's visit to India between 25-27 January 2015. He turned into the first U.S. president to be the special guest at the Republic Day March in New Delhi. The two chiefs gave a joint explanation which imagined the U.S.- India counterterrorism relationship in the 21st century. During Top state leader Narendra Modi's second visit to the US in September 2015, another U.S.- India Joint Announcement was given on combating international terrorism (The Indian Express, 2016)

A cutting edge improvement on counterterrorism participation happened in 2016 during the state head's second visit to the US. Through a joint statement, both the pioneers reaffirmed their obligation to reinforcing collaboration against terrorist militant dangers from fanatic gatherings, like Al-Qaeda, Daesh/ISIS, Jaish-e Mohammad, Lashkar-e-Tayyiba, D Organization and their offshoots. They planned to do as such through a developed joint effort on UN fear based oppressor assignments. Further, they

guided their authorities to distinguish explicit new areas of coordinated effort at the following gathering of the U.S.- India Counterterrorism Joint Working Group(Government of India, 2016). The leaders also applauded the finalisation of an arrangement aimed at facilitating the sharing of terrorist screening information. They likewise called for Pakistan to bring the culprits of the 2008 Mumbai and 2016 Pathankot terrorist attacks to justice. India valued the U.S. assignment of the Hizb-ul-Mujahideen pioneer Syed Salahuddin as an Extraordinarily Specially Designated Global Terrorist. In this spirit, the pioneers invited another meeting component on homegrown and worldwide fear based oppressor assignment posting recommendations (Ministry of External Affairs, 2017). In a telephonic discussion with State leader Narendra Modi in February 2017, President Trump alluded to India as "a genuine companion and accomplice in tending to difficulties all over the planet." In Spring, the Indian National Security Advisor Ajit K. Doval visited the US, met U.S. Defence Secretary James Mattis, Secretary of Homeland Security John Kelly, and the National Security H. R. McMaster. The fundamental plan of the gathering was the "development and extending of India-U.S. co-activity in by and large tending to addressing the challenge posed by terrorism in South Asia." The two sides likewise examined an extensive variety of territorial security issues including maritime security and counterterrorism. The pioneers likewise emphasised their obligation to cooperate as accomplices to "combat the full spectrum" of terrorist threats, avowing that both extraordinary democracies would stand together in the battle against psychological oppression (Indian Express, 2017).

The main close up and personal meeting held between President Trump and State head Modi occurred in June 2017. The meeting was named as a triumph in light of the fact that the US certified India's job as a critical and regular accomplice over guarantee issues of

counterterrorism, provincial security and worldwide harmony. Head of the Government Modi said that the difficulties emerging from terrorist attacks, for example, fanaticism and radicalization ought to be handled with the most extreme need. Both leaders also emphasised the need for destroying the safe havens of terrorists (Hindustan Times, 2017). In this spirit, the leaders welcomed a new consultation mechanism on domestic and international terrorist designations listing proposals. They further called on Pakistan to expeditiously bring the perpetrators of the 26/11 Mumbai, Pathankot, and other cross-border terrorist attacks to justice. These assaults were executed by Pakistan-based groups and quick activity was prescribed to counter the developing apparition of radicalization. The pioneers likewise declared expanded collaboration pointed toward forestalling terrorist travel and disrupting global recruitment efforts by expanding intelligence sharing and operational-level counterterrorism cooperation (Ministry of External Affairs, 2017.) They invited the initiation of the trading of data on known and thought fear suspected terrorists for travel screening. They further resolved to strengthen information exchange on plans, movements and linkages of terrorist groups and their leaders, as well as on the raising and moving of funds by terror groups. An important step was taken in the form of affirming support to the UN Comprehensive Convention on International Terrorism that will advance and strengthen the framework for global cooperation and reinforce the message that no cause or grievance justifies terrorism. They also pledged to work together towards preventing the proliferation of weapons of mass destruction and their delivery systems and towards denying access to such weapons by terrorists and nonstate actors .

CHAPTER 4

INDIA US MILITARY INDUSTRIAL COOPERATION: SCOPE AND SCALE IN 21ST CENTURY

Defence cooperation is a defining element in Indo-US strategic relations in the post-Cold War era. This is particularly manifested in visits of high level defence and military officials, regular exercises involving the militaries of both sides, and a booming defence trade that has reached more than US\$15 billion in a matter of a decade. In one segment, however, where the cooperation is yet a takeoff in a meaningful manner is the defence industry. This study examines the defence industrial cooperation between India and the USA and identifies the reasons for the lacklustre relationship.

In examining the defence industrial cooperation between India and the USA, the study relies largely on the munitions items (as opposed to dual-use items), which are not only specific to exclusive defence use, but the transfer of which from one country to another requires an explicit government permission in the form of a licence (US National Archives, 2020, Jan). Both New Delhi and Washington have such a public list, which are also harmonised with the munitions list of items of the Wassenaar Arrangement to which both are parties. The American list is codified in the International Traffic in Arms

Regulations (ITAR) and is found in the US Munitions List (USML). The transfer of the munitions items worth over a certain value requires the US government permission unless the government decides to transfer on its own. The Indian list, published recently, forms Category 6 of the Special Chemicals, Organisms, Materials, Equipment and Technologies (SCOMET) list which is maintained by the Director General of Foreign Trade (DGFT) of the Ministry of Commerce and Industry, for the purpose of controlling India's strategic trade(MEA,2021).

The USA, or for that matter between any two countries requires government intervention. The degree of intervention however varies from case to case. Given this, the defence industry cooperation between India and the USA is examined in three broad categories. The first category deals with government to government (G-G) industrial cooperation (MEA,2021) . Such cooperation typically arises out of a defence contract/agreement signed by both countries, requiring technology transfer, joint development and/or production. The second category deals with industry-to-industry (I-I) cooperation because of the nature of the defence contracts(MEA,2021). Such cooperation arises largely due to offset obligations on the part of the foreign suppliers of defence items. Offsets in general require the foreign suppliers to forge a degree of industrial cooperation with the buying countries. Though the obligation is caused by the government's policy, the industrial cooperation is largely left to the industry to manage their affairs. The third category deals purely with the voluntary nature of industrial partnership between the two countries (MEA,2021). The voluntary nature is primarily due to the globalisation of the defence industry by which companies of one country seek investment and partners in other countries to gain market access and/or to sharpen their competitive edge. The government

has some role to play in globalisation efforts by creating a conducive policy framework and facilitating ease of doing business to attract foreign manufacturers.

4.1 THE INDIAN ARMS INDUSTRY

India's domestic arms production has long been dominated by several SOEs (known as Defence Public Sector Undertakings, DPSUs) and by Indian Ordnance Factories, the production units under the Ministry of Defence (MOD). Four of India's five largest arms producers are the respective leading producers in aerospace, land systems, electronics and shipbuilding (Behera, L. K. 2023, October). The fifth biggest company, Cochin Shipyard, is producing India's first indigenous aircraft carrier. Despite their size and industry dominance, there are lingering concerns over the DPSU's productivity, their reliance on domestic military orders and their dependence on foreign resources (Behera, L. K. 2023, October). Against this background, Indian state-owned companies have started to diversify their business into the civil market and to set up export offices overseas. In an effort to improve autonomy and efficiency in ordnance production, in October 2021 the Indian government dissolved Indian Ordnance Factories and reformed its 41 units into 7 DPSUs (Behera, L. K. 2023, October).

The Make in India policy further supports an emergent private sector, with over 200 companies licensed to produce military items and bid for government projects, often in collaboration with major foreign arms producers. Ashok-Leyland, the only Indian private sector company ranked among the top 50 in the Indo-Pacific, one of the largest suppliers of military trucks to the Indian Army (Business Standard, 2021, May). India's other private

arms manufacturers (e.g. Larsen & Toubro and Reliance) feature neither in the country's top 5 nor the regional top 50 (Economic Times ,2023 August).

Unmanned Maritime Vehicles To support the implementation of artificial intelligence (AI) projects with military applications, in 2019 India established the high-level Defence AI Council (DAIC) and the Defence AI Project Agency (DAIPA) (PIB,2022). Such projects are expected to include USVs and Unmanned Underwater Vehicles (UUV) The Indian Naval Indigenisation Plan 2015–30 further acknowledges UUVs as a critical capability for future warfare and the country's need to import remotely operated vehicles and Autonomous Underwater Vehicles (AUV) for the shipbuilding programme (PIB,2022). The Defence Research and Development Organisation (DRDO) and the Central Mechanical Engineering Research Institute (CMERI) have been considering development of AUV prototypes In the private sector, Larsen & Turbo has been developing SUV prototypes on its own and in collaboration with foreign partners, such as Italy's EdgeLab (PIB,2022 June).

Despite the long-term efforts, India remains one of the largest importers of major arms globally: for the period 2016–20, it ranked as the second largest importer (The Economic Times,2024). India is highly dependent on imports of complete foreign major arms, including many produced under licence or as components for its domestic production. India's total volume of procurement in 2016–20, 84 per cent was of foreign origin. Licensed production accounted for 69 per cent of the imports (58 per cent of total acquisitions). Much of the licensed production has a substantial Indian content and includes some use of Indian-designed components to replace original foreign components, as in the Su-30MKI combat aircraft imported from Russia (The Economic

Times,2024,January). An important objective of licensed production is to gain capabilities to develop local design through technology transfers. However, over the decades this has not often been successful— for example, the technology transfer related to the recently completed large programme for the Russian Su-30MKI was reportedly seen in India as a ‘mistake’ since no real technology transfer took place (The Economic Times,2024 January).

Domestic production accounted for 16 per cent of total procurement. Land-attack missiles (including for use with nuclear warheads) and the Arihant a class of nuclear powered ballistic missile submarines) are domestic designs that give India’s nuclear forces a high level of autonomy (The Economic Times,2018). Most of the surface ships delivered in 2016–20 were also Indian designs . However, in recent decades domestic development has been slow and often not very successful in other categories of major arms (The Economic Times,2023).

For example, the Tejas combat aircraft, which started development in the 1980s, is still not fully operational, and only 124 of the equally delayed Arjun tanks were acquired before it was decided to continue to buy Russian T-90S tanks. In addition, domestic designs remain dependent on imported key components such as engines and radars (Vasudeva,.P.K,2017).

Despite these setbacks, India has ambitious programmes for additional nuclear powered submarines, new combat aircraft designs, autonomous weapons (e.g. a loyal wingman UCAV and autonomous reconnaissance vehicles) and associated components The earlier experiences of Indian domestic arms programmes leave serious doubts about whether

India will be able to significantly reduce its dependence on imports in the short or medium terms.

A Robust Agenda for Cooperation

Since 2021, American and Indian leaders have leant on their national-security advisors, Jake Sullivan and Ajit Doval, respectively, to initiate and arbitrate inter-departmental policies. Both sides have sought to expand the scope of strategic cooperation, including on civilian and dual-use technologies and on co-development of next-generation technologies, which will mitigate the effects of the United States' export-control policies, which remain in place (IISS,2023, July 20).

The joint statement released in 2023, June summarised the mechanisms that have been established to promote long-term mutual investments, which included the launch of an interagency Strategic Trade Dialogue and unprecedented public-private partnerships in semiconductors, artificial intelligence, advanced telecommunications, quantum computing and civilian space technology(Whithouse,2023). The first meeting of the trade dialogue occurred days after the release of the joint statement.

Under an agreement published during the visit, GE Aerospace will supply, via an 80% technology transfer, state-owned Hindustan Aeronautics Limited with the F-414 engine to be used in the next variant of India's light multirole aircraft. The joint statement said that the 'trailblazing' agreement 'will enable greater transfer of US jet engine technology than ever before' (Peri, D., & Haidar, S. 2023), . This mirrors the co-production arrangement between the US and its treaty ally, South Korea, for the same engine.

Several other plans underscore the step-change that has occurred between the US and India: India will buy 31 General Atomics MQ-9B combat intelligence, surveillance and reconnaissance drones; the two countries are at work institutionalising additional defence-specific initiatives such as the Defense Industrial Cooperation Roadmap, as well as agreements on ship repairs, space research and development and creation of a joint academic and startup network. As members of the Quad group of countries, which India will lead in 2024, New Delhi and Washington could seek to better use information-sharing platforms to enhance theirs and others' regional maritime domain awareness(Peri, D., & Haidar, S. 2023).

4.2 JOINT VENTURES AND TECHNOLOGY TRANSFER INITIATIVES

In the last two decades, the India-United States (US) relationship has made major strides and has evolved into a very broad-based cooperation. During this period, defence and security cooperation has been a key enabler in the development of a comprehensive global strategic partnership that encompasses a deepening multi-sectoral engagement (MEA,2023 June). While some areas of divergence have popped up now and then, these have so far been handled with maturity and mutual accommodation by both sides. A significant fillip was provided by the Indian Prime Minister, Narendra Modi's state visit to the US in June 2023, which raised expectations of more dynamism and robustness in the partnership (MEA,2023 June). The visit had a special focus on defence technology and industrial cooperation, as highlighted in the section on defence in the joint statement,

appropriately titled ‘Powering a Next Generation Defence Partnership’ (MEA,2023 June 10).

The India-US defence and security cooperation can be broadly classified into three distinct though interrelated areas (MEA,2023 June 10). These include cooperation in regional and global security and development affairs; enhanced and institutionalised engagement between the armed forces (exercises, information sharing, training, other exchanges and programmes); and cooperation in defence technology and industry. It is the third leg of cooperation (technology and industry) that has consistently lagged and is yet to deliver meaningfully (MEA,2023 June).

Defence Technology Cooperation

Efforts have been made in the last decade to step up defence technology cooperation. The lack of progress under the US-India Defence Technology and Trade Initiative DTTI put in place during the period 2012-14, was often attributed to the absence of suitable joint frameworks and delays in the conclusion of foundational agreements (Office of Publication and Security Review 2020, July). Attempts were made to address this by signing the Framework for US-India Defence Relations (2015), designating India as a Major Defence Partner (2016), and signing three foundational agreements (LEMOA in 2016, COMCASA in 2018, and BECA in 2020). The DTTI coordinators from both sides were to meet twice a year; a DTTI Inter-Agency Task Force and a DTTI Industry Collaboration Forum were set up; four service-led joint working groups were formed (land systems, naval systems, air systems, and aircraft carrier technology cooperation).

However, there was negligible movement in technology cooperation (Office of Publication and Security Review.2020, July)..

The inauguration of the U.S.-India initiative on Critical and Emerging Technologies (iCET) in early 2023 has created greater momentum for bilateral defence industrial cooperation. The India-U.S. defence partnership has progressed by leaps and bounds since the year 2000, when President Bill Clinton's visit signalled a resumption of normal ties following India's 1998 nuclear tests (Krishnankutty, P. 2020). In the years since, the two countries have expanded the range and sophistication of their military exercises, which now involves all services and several partner countries. They have concluded negotiations over enabling agreements covering logistics, secure communications, and other protocols (Krishnankutty, P. 2020)s. The two countries' security cooperation has been given a political and bureaucratic structure, including through the 2+2 Dialogue, Defense Policy Group (DPG), and various bilateral and Quad working groups (White House. 2023, January). Defence trade has also taken off, with the Indian armed services now using at least eight major U.S.-designed or -produced platforms. Yet defence co production and research and development (R&D) have not grown as significantly, despite some marginal successes. The Defense Trade & Technology Initiative (DTTI), despite some modest success with air-launched unmanned aerial systems, has not produced the results that were once envisioned (White House. 2023, January). As an overarching umbrella framework for technology cooperation, it covers commercial as well as defence technologies and is linked to the India-US strategic trade dialogue.

Structured discussions have progressed to take defence technology cooperation forward, but concrete outcomes are awaited. Key challenges include aligning the R&D efforts of

the private sector in the US with those of DRDO in India, tight control and strong safeguards in the US for sharing or working together on defence technologies, intellectual property rights, the strategic need to maintain technology leads, exclusivity in high-end defence technologies, and the commercial considerations for leveraging key technologies(Nadadur, G., & Jaishankar, D..2023, February). The proposal for co-development leading to co-production was first raised during the initial meetings under the DTTI. So far, it appears that the enthusiasm of the Indian side on this proposal has not been shared in equal measure by the US side (Nadadur, G., & Jaishankar, D..2023, February).

In the co-development leading to the co-production model, it would be useful to look at similar collaborative projects undertaken by the US. In many cases, even staunch US allies have not been able to retain the flexibility to independently make design changes, undertake modifications, and plug-in systems/subsystems for their own specific requirements. In design and development work share, the ‘black box’ nature and stringent control of some key parts software could not be eliminated (Verma.A, 2023).

Such collaborative programmes have numerous other challenges, but the overall benefits for India and the US—geopolitical, economic and technological—can outweigh the shortcomings (Verma.A, 2023). The model should be taken forward, leveraging the strengths of both sides and incorporating lessons from other similar programmes. Commercial and regulatory challenges will need to be addressed speedily, and a few such projects should be announced in 2024-25.(Verma.A, 2023). In addition, a few joint defence R&D projects should be initiated within the next two years.

India- US Defence Industrial Cooperation

Contrary to popular perception, India's defence industrial sector has changed significantly over the past twenty years. Indian defence industry has a long history dating back to before the country's independence, but was subsequently dominated by a handful of state-owned defence public sector undertakings (DPSUs), several labs under the government's Defence Research and Development Organisation, and ordnance factories (Behra.L.K, 2023). Many engaged in licensed production, but the lack of competition over the years resulted in inadequate technology absorption, a continuing dependence on imports, and a noticeable absence of Indian defence exports. Since about 2000, and particularly over the past few years, the Indian private sector has become much more competitive across many systems in terms of research and development capabilities, product quality and cost, and reliable fulfilment of order (Behra.L.K, 2023)s. Private Indian companies have begun to cater to both the domestic and export markets, including through joint ventures with foreign vendors. Some public sector entities have also improved their capabilities. This has resulted in many new and compelling actors in the defence industrial ecosystem capable of manufacturing for the global arms market (Behra.L.K, 2023).

Some of the leading Indian companies include the Kalyani Group, whose Kalyani Strategic Systems Limited produces artillery systems, components for armoured fighting vehicles (including gun barrels), tank tracks and wheels, precision ordnance, a range of light and armoured personnel carriers, perimeter security systems, and strategic missile integration and testing support. Bharat Forge, another Kalyani subsidiary, manufactures aerospace and marine system components, including aero-engine fan blades, compressors

and turbines, aircraft body components, landing gear structures, and engine crankshafts. Its core competencies include landing gear components, unmanned aerial systems, and fan blades (Kalyani Group, 2024, January).

Meanwhile, Godrej and Boyce (G&B) manufactures precision and hi-tech aerospace components, including space engine and satellite thrusters and aerospace composites, and is in talks with global firms to develop and produce propulsion engines (Peri, D., & Haidar, S.,2023). G&B recently delivered the first airframe assembly for the air-launched version of the BrahMos missile and is building a defence production facility at Khalapur in Maharashtra (Business Standard,2021). The company is also aiming to expand its R&D capabilities. Another market leader, Larsen and Toubro, currently holds a contract with the Ministry of Defence to supply indigenously produced Pinaka multi-barrel rocket launchers. It also contributes to guns and armoured systems, submarine and underwater platforms, missiles and aerospace systems, radar systems, avionics, sensors, and unmanned systems (Peri, D., & Haidar, S.,2023).

The major Indian conglomerates, the Tata Group has subsidiary companies focused on manufacturing in aerospace and robotics; providing security technology for homeland security, border and infrastructure protection, transportation and aviation security, urban security, cyber security, and law enforcement; developing advanced composite materials for industrial sectors, including aircraft and space systems, personal armour, vehicle armour, and telecommunications equipment; advanced systems focusing on network-centric warfare, aerospace and avionics, missiles systems, unmanned aerial vehicles, radar systems, electronic warfare, communications equipment, and emergency response networks (Economic Times. 2023). Tata Advanced Systems has a joint venture

with Boeing to coproduce several components including the AH-64 Apache combat helicopter fuselage (Economic Times,2023). Tata has also developed partnerships with Lockheed Martin involving component manufacturing for the C-130J Super Hercules aircraft, MH-60 Romeo helicopter, and the S-92 helicopter. The Tata Group is not the only legacy Indian industrial company expanding into the defence sector (Economic Times,2023). Ashok Leyland Defence Systems, part of the Hinduja Group, now produces bulletproof light vehicles for the Indian Air Force, trucks, and rocket launchers. Mahindra Defence Systems specialises in armoured vehicles, underwater warfare equipment, radars, and surveillance equipment, and was recently awarded a \$181 million contract to manufacture integrated anti-submarine warfare defence suites for modern warships for the Indian Navy (Business Standard,2022). Reliance Naval and Engineering is involved in ship building and repair and in avionics.

The Adani Group, which acquired Alpha Design Systems and PLR Systems, is interested in small arms and ammunition, anti-drone systems and maintenance, and aircraft repair (Business Standard.2022). Among state-owned enterprises, Bharat Electronics Limited (BEL) produces radars, sonar, C4I systems, electronic warfare capabilities, electro-optics, and tank electronics, and has joint ventures with Thales and GE to manufacture high voltage tanks and detector modules for computed tomography (CT) scan systems and advanced level X-ray tubes (Business Standard,2022). Hindustan Aeronautics Limited (HAL), the largest state-owned aerospace and defence company in India, has produced 15 types of aircraft and has 11 dedicated R&D centres. Its core competencies include aircraft manufacturing and upgrades, turbine engines, avionics, and composites and materials (Nadadur, G., & Jaishankar, D,2023). There are also new entrants to the defence sector .

For example, Paras Defence and Space Technologies is an emerging player whose products range from rocket and missile programs to infrared optics, including electromagnetic pulse protection solutions. The company is also venturing into the drone market and has tie-ups with global players to supply turnkey anti-drone systems for civilian airports in India. Overall, India has significant potential for defence production, both to meet its immediate needs, but also export potential. An older set of primarily state-owned or -affiliated entities have been joined by a sizable number of new private sector entrants, both traditional manufacturers and start-ups. But challenges include ensuring a level playing field, so as to facilitate healthy competition, and making a strong business case for investment and transfer of technology (Nadadur, G., & Jaishankar, D, 2023, February)

Friendshoring Meets Make In India

To benefit from immediate opportunities, companies from the United States would have to explore manufacturing partnerships with high-potential counterparts in India for commercial reasons. Such commercial partnerships could serve two benefits. First, they can help U.S. companies grow their value addition in India and demonstrate their commitment to New Delhi's "Make in India" policies. Second, relocating certain parts of the weapons value chain to India could help increase cost effectiveness, which is important for competing against alternative offerings from other countries (Glader, 2023).

Many companies in the United States and India have already successfully partnered to leverage the latter's low-cost production capabilities to increase the former's global competitiveness. In non-military industries (Department of Defense, 2021), Caterpillar is

a prominent example of a U.S. company growing its manufacturing footprint in India to boost its exports across the Global South and, more recently, to Europe (Economic Times,2024). In defence and aerospace industries, General Electric (GE), for instance, has entered into agreements with Indian partners to manufacture aero-engine components that are then exported to GE's production facilities, thereby helping to increase commercial appeal of the company's engines. Boeing and Raytheon have similarly partnered with Tata to produce components of Apache combat helicopters and the Stinger missile system, respectively, in India. These partnerships have rapidly enhanced India's capabilities in defence innovation and production, as seen in the cases of the Akash surface-to-air missile (SAM) system and a range of artillery equipment including the Dhanush gun system(Economic Times.,2024). Other areas of recent progress for India's defence industry include armoured vehicles and naval vessels. India has leveraged these successes in domestic production to make progress towards its target of \$5 billion in annual defence exports by 2025. Defence companies signed a growing number of deals between 2014 and 2022 to increase exports from around \$145 million (₹900 crore) to more than \$1.7 billion (₹14,000 crore) in this period. Recent and high-profile export deals include agreements to export high-speed patrol boats to Vietnam, and missiles, rockets, and ammunition, including Pinaka multi-barrel rocket launchers, to Armenia. As in any commercial partnership, tie-ups between U.S. and Indian defence companies will need to involve suitable market carve-outs and end-user agreements, keeping in mind commercial interests as well as relevant national security and foreign policy concerns (Economic Times.,2024). These terms may be challenging to define, particularly for more advanced weapons systems from the United States. A realistic and step-by-step approach would give priority to certain categories of defence technologies in which India could offer

co-development opportunities given its own capabilities. Attracting critical elements of the supply chains for platforms that are in high demand both for the Indian armed services and for global export markets would position India well to develop the next generation of weapon systems with the original equipment manufacturers (OEMs) (Department of Defense, 2021).

The Road Ahead

Operationalizing more defence industry partnerships between U.S. and Indian firms is contingent on commercial and regulatory factors, with the latter impacting the former. Commercial factors involve identifying weapons systems with sufficient profit potential, including not just use by the Indian armed services but critical export markets that offer both scale and strategic importance (Press Information Bureau, 2023, November). It is also about structuring partnerships with suitable market carve-outs and end-user agreements. Policy or regulatory factors, however, suffer from some important gaps: (i) in both India and the United States, between high-level political alignment and working-level policy outcomes, (ii) in India, between end user requirements and corporate incentives, and (iii) in the United States, between government and private sector in responses to Indian requests (Press Information Bureau, 2023, November). Addressing these shortcomings will require:

- Translating policy into implementation: The U.S. government has declared India a Major Defense Partner and granted it Category-1 Strategic Trade Authorization-1 (STA1) status, but that has not always translated into easier approval processes for U.S. firms' responses to Indian requests, at least for some

types of weapons systems (Press Information Bureau, 2023,November). For its part, India's Ministry of Defence could more closely align Requests for Information (RFIs) and Requests for Proposals (RFPs) for defence procurements – which can sometimes set unrealistic, short-term targets for domestic value addition and technology transfer – to its broader vision of gradually increasing tech transfers over a longer period (Press Information Bureau, 2023,November).

- Greater predictability: The Indian government could increase the long-term predictability of its procurement specifications, including volumes, timelines, and budgets. Such long-term predictability is absolutely necessary to incentivize private firms – both foreign original equipment manufacturers (OEMs) and Indian private companies – to pursue long term partnerships, investments, and technology transfer arrangements (Press Information Bureau, 2023,November).
- Closer public-private coordination: U.S. firms frequently miss opportunities in India as U.S. companies wait for U.S. government approvals for their responses to Indian requests, the U.S. government awaits confirmed interest from the Indian government before granting approval, and the Indian government waits on the U.S (Marianenko, N.2024) . firms to share specific proposals, technical specifications, or classified briefings before confirming its interest in a particular defence system. In sum, the U.S.-India defence industry partnership is ripe for acceleration given a range of factors, spanning supportive domestic policies and favourable geopolitics, including the urgent circumstances that have arisen due to the war in Ukraine. Capitalising on these factors will require making a strong business case for long-term investments and technology transfers, ensuring predictable demand

in India, improving public-private cooperation in both countries, and translating high-level political agreement into tangible outcomes (Marianenko, N.2024).

4.3 COLLABORATIVE RESEARCH AND DEVELOPMENT PROJECTS

As the United States and India get closer, they appear to be taking their space cooperation to a higher orbit. India is also increasing its collaboration in space with the other two members of the Quad, Japan and Australia. The joint statement from the third iteration of the India-U.S. 2+2 strategic dialogue held in October 2020 included some consequential cooperation in space. The decision to start working together on issues such as space situational awareness (SSA) is important in ensuring safe, secure, and sustainable use of outer space (IANS. 2021). In 2019, the Indian Space Research Organization (ISRO) set up its own SSA and management directorate at its headquarters in Bengaluru. In addition to the India-U.S. civil space dialogue, the four ministers who were part of the 2+2 dialogue agreed to also discuss potential areas of cooperation in space from a defence and security perspective. India and the United States are already engaged in a space security dialogue, which began in 2015. This was a first for India with another country (Roy, S.2021)

India USA Aerospace Cooperation.

In March this year, ISRO finished work on a synthetic aperture radar (SAR) that can capture high-resolution images of the Earth. According to an ISRO statement, on March 4, the S-band SAR payload was shipped from ISRO's Ahmedabad-based Space Applications Center (SAC) to NASA's Jet Propulsion Laboratory (JPL) in Pasadena,

California for integration with the latter's L-band SAR payload. In a recent interview, ISRO Chairman Dr. K. Sivan said spacehat once the two radars are integrated and ready, NASA would send it back to India and "it will be entirely assembled as a satellite at the UR Rao Space Center in Bengaluru (ISRO,2020,October)

The NASA-ISRO synthetic aperture radar (NISAR) project is tasked with a joint Earth observation mission "to make global measurements of the causes and consequences of land surface changes using advanced radar imaging." This mission was born from a National Academy of Science 2007 survey apprising the priorities in the area of Earth observation for the decade (National Academies Press,2007). The survey prioritised gaining a better understanding of three Earth science domains including ecosystems, deformation of Earth's crust, and cryospheric sciences . Following ISRO and NASA conversations on a possible joint radar mission, ISRO decided to join the project with its own complementary mission objectives including agricultural monitoring and characterization, and studies of landslides, Himalayan glaciers, soil moisture, coastal processes, coastal winds, and monitoring hazards (National Academies Press,2007).

According to a NASA press release from September 2014, NISAR will be the "first satellite mission to use two different radar frequencies (L-band and S-band) to measure changes in our planet's surface less than a centimetre across." NISAR will be capable of observing the Earth's land- and ice-covered surfaces on a global scale with 12-day periodicity on ascending and descending passes, capable of sampling earth on average every six days, with a baseline mission duration of three years. NASA noted that "over the course of multiple orbits, the radar images will allow users to track changes in croplands and hazard sites, as well as to monitor ongoing crises such as volcanic

eruption (ISRO. (2021, July). The images will be detailed enough to show local changes and broad enough to measure regional trends (Office of Publication and Security Review 2020, July.)

Under the project, NASA is responsible for providing the mission's L-band synthetic aperture radar, a high-rate communication subsystem for science data, GPS receivers, a solid-state recorder, and payload data subsystem, and ISRO is providing the spacecraft bus, the S-band radar, the launch vehicle and associated launch services. The mission is set for launch in late 2022 and early 2023 from ISRO's Sriharikota spaceport in Andhra Pradesh in southern India. India's Geosynchronous Satellite Launch Vehicle (GSLV 2) will be used for the mission. As for the cost, it is reported to be "the world's most expensive imaging satellite." ISRO is reportedly spending around 7.9 trillion Indian rupees (\$110 million) and NASA around \$808 million on this mission (NASA. 2022 August).

As India and the U.S. grow closer, engaging in a range of projects to study the space environment as well as the Earth, India is also pursuing a space agenda with the other two Quad partners. According to Indian media reports, Australia, India, Japan, and the United States have plans to establish several working groups focusing on climate change and emerging and critical technologies, including some focus on developing norms and standards for these technologies (Hindustan Times.,2023 June).

Sivan held a meeting with his Australian counterpart, Enrico Palermo, the head of the Australian Space Agency. The two leaders signed an amendment of the "2012 India – Australia Inter-Governmental MoU for cooperation in Civil Space Science, Technology and Education" in the presence of the Indian High Commissioner to Australia and the

Australian High Commissioner to India, making the Indian Department of Space and the Australian Space Agency the executive organisations for cooperation in this regard. The amendment also facilitates further exploration and identification of areas for bilateral space agenda. The two took the opportunity to review the status of their ongoing cooperation in the areas of Earth observation, satellite navigation, space situational awareness, and establishment of a transportable terminal in Australia to support India's human space mission, Gaganyaan.

Clearly, as the political comfort level between India and the other Quad countries grows, it is likely to be reflected in a number of areas, including space cooperation.

Cooperation in Defence innovation

The India-US Defence Acceleration Ecosystem (INDUS- X) was launched in June 2023 to coordinate efforts in defence innovation in technology, systems and products. It linked the respective national defence ecosystem bases—Innovation for Defence Excellence (iDEX) in India and the Defence Innovation Unit (DIU) in the US. Since its launch, a senior advisory group has been established; initial joint innovation challenges (undersea communications, oil spill detection/integration system) have been launched under the INDUS-X Mutual Promotion of Advanced Collaborative Technologies (IMPACT); defence investor-start-up meetings have been held; and workshops have been conducted with academia and industry (supported by the US-India Business Council and the US-India Strategic Partnership Forum) (Hindustan Times 2023, February 1).

The initial steps and efforts to work together in defence innovation are good, but the crucial test of implementation begins now. Issues related to joint funding support and commercialising successful innovations need to be incorporated into the plans. INDUS-X conceptualises a protégé-mentor concept, which will need to be spelt out in detail and suitably facilitated. In many cases, cross-linking defence start-ups with some key manufacturers on either side will be critical to enable innovations to be integrated into larger platforms and systems for effective use by the armed forces.

The space sector holds immense potential for scientific exploration, technological advancement, and economic growth. Recognizing this, India and the United States have embarked on a collaborative journey to leverage their respective strengths and forge partnerships in the realm of space exploration and research. During the forthcoming visit of Prime Minister Narendra Modi to the US later this month, space cooperation and critical technologies under ‘initiative on critical and emerging technology’ (iCET) umbrella are topping the agenda (Hindustan Times ,2023, February 1).

The US space agency NASA and Indian Space Research Organisation (ISRO) have already announced that the Indian astronauts will further train at Johnson Space Center. However there is no clarity on when the training will start and what the ““advanced training”” would entail. These astronauts who were shortlisted from the Indian Air Force (IAF) have already undergone extensive training at the Star City Cosmonaut training centre, Russia in 2020. This training was part of Gaganyaan Human Spaceflight Programme of ISRO which also includes development of a crewed spacecraft that would launch on a version of ISRO’s GSLV Mark 3 project. The NASA-ISRO Synthetic Aperture Radar (NISAR) Earth science mission is one of the biggest programmes where

India and the US are working together. NISAR features a jointly-developed SAR payload that will be integrated onto an Indian-built satellite and launched by India in 2024. Later this year according to the White House, NASA Administrator Bill Nelson will travel to India (ISRO.2021, February 17). .

Both NASA and ISRO are expected to cooperate on the American space agency's Commercial Lunar Payload Services (CLPS) programme. In this programme NASA purchases flights of research payloads on commercial lunar landers. Both agencies are expected to call a meeting of companies that have CLPS contracts with Indian companies later this year or early next year. It has been reported last month that for strengthening partnership between the two countries in new areas like Artificial Intelligence & Space, the first US-India Advanced Domains Defense Dialogue (AD3) met in New Delhi. The officials of both countries had discussed areas of convergence, opportunities for further cooperation and the unique challenges in these domains (ISRO, 2021, July 12).

Earlier this year the two countries had agreed to advance space cooperation in many areas under the iCET umbrella and this includes human space exploration and commercial space partnership. India and the US have taken significant strides in advancing the private space sector. In 2022, the US had kicked off its Artemis programme when it launched the Orion spacecraft in November towards the moon and then bringing it back. And as has been reported earlier India is getting ready to launch its first human spaceflight mission (Gaganyaan) next year. It is in this context a collaboration with the US, an advanced spacefaring nation, will help India to secure expertise and technologies. Both India and the US can cooperate in different areas in the space sector including satellite technology

space research, human spaceflight, and commercial space endeavours (K, P. 2023, June 24).

Satellite Technology and Earth Observation:

India and the US can collaborate in satellite technology, including joint development and sharing of resources. By combining India's expertise in cost-effective satellite manufacturing and the US's advanced capabilities in Earth observation systems, both countries can enhance their ability to monitor climate change, natural disasters, and agricultural patterns. Such cooperation can lead to the development of high-resolution imaging satellites, data-sharing mechanisms, and joint research projects, benefiting both nations and the global community

Space Research and Exploration:

India's Indian Space Research Organisation (ISRO) and NASA have already fostered partnerships in space research, including the Mars Orbiter Mission and joint satellite missions. Strengthening these collaborations, India and the US can jointly explore other celestial bodies, such as the Moon and Mars. Sharing scientific knowledge, data, and research findings can accelerate space exploration and contribute to humanity's understanding of the universe. Additionally, collaboration in deep space exploration missions, such as asteroid studies and space telescopes, can lead to groundbreaking discoveries and advancements in space science (ISRO. 2021, July 12).

Human Spaceflight:

The US has a rich history of human spaceflight, with NASA at the forefront of manned missions. India, on the other hand, has made significant strides in space technology and has expressed its intent to send humans to space. Collaboration between the two countries in human spaceflight endeavours can be mutually beneficial. Sharing expertise, training resources, and technological know-how can expedite India's progress in this area, while the United States can benefit from India's cost-effective approach and innovative solutions. Jointly developing crewed missions and establishing training programs can pave the way for future space exploration milestones (ISRO. 2021, July 12).

Commercial Space Endeavours:

The commercial space sector has witnessed rapid growth and is poised to become a significant contributor to the global economy. Both the countries can collaborate in this domain by fostering partnerships between their respective space agencies and private space companies. Joint investments, knowledge exchange, and market access can fuel innovation and competitiveness in the commercial space sector. Collaboration can encompass satellite launches, space tourism small satellite development, and the utilisation of space resources, creating new avenues for economic growth and job creation in both countries (ISRO. 2021, July 12)

4.4 CHALLENGES AND OPPORTUNITIES IN DEFENSE INDUSTRIAL COOPERATION

The evolving defence partnership faces three fundamental issues: a reluctant American political fraternity, regulatory hurdles, and strategic divergences.

First, absorbing foreign technology can be a time-consuming process, and the gestation period for projects under the DTTI has proved sluggish. The initiative failed to build momentum despite some successful low-scale projects. This failure was partly due to the absence of an overarching framework for technical cooperation, which resulted in both states' agencies operating independently without coordination. Consequently, achieving necessary procedural alignment became more difficult and elusive over time. Antithetical to India's desire, the United States' inclination toward arms sales over sharing critical technology with non-allies remains the primary factor behind the nominal progress of the initiative.

The White House remains unsure regarding its partner's political will to deter Chinese belligerence in the Western Pacific. The Biden administration expects more from India in deterring Chinese assertiveness in the Indo-Pacific, but aside from India's desire for peace with China, its security interests primarily lie in the Indian Ocean Region. Thus, both

states have different approaches toward tackling China, which could potentially become an obstacle to the evolving defence partnership(Marianenko, N. 2024, February 17).

Second, at odds with the MDP designation, India faces stringent restrictions under American legislation, i.e., the Arms Export Control Act (AECA) 1976 and the International Traffic Arms Regulations. This means that critical technologies required for developing advanced platforms like nuclear-powered submarines cannot be shared with India. In fairness, there are regulatory hurdles on the Indian side, too. Although India has streamlined the Defense Acquisition Procedure, the acquisition timeline remains slow primarily due to a mismatch between procurement plans and budgetary allocations. American firms have also complained about the Indian administration's laxity in granting timely offset credits, which puts companies at risk of severe penalties. These regulatory issues have thus weakened the partnership's efficacy Marianenko, N. 2024, February 17).

Third, New Delhi and Washington's ties with Russia and Pakistan, respectively, are also an impediment. The U.S. has granted India a waiver under its Countering America's Adversaries through Sanctions Act (CAATSA), 2017, for the latter's S-400 system purchase from Russia. However, India's independent stance on the Ukraine invasion and spiralling oil purchases from Moscow has not helped relations with the United States. Furthermore, Washington has also expressed concerns about India's arms purchases from Russia as Russian-origin platforms are technologically incompatible with those of the United States, making interoperability far-fetched. Likewise, in 2016, a U.S.-Pakistan defence deal had a notable impact on ties between India and the United States. India refused the U.S.-based Lockheed Martin's offer to relocate its F-16 system assembly line

to India as the American offer came on the heels of its decision to sell the same aircraft to Islamabad. India insisted that Washington halt F-16 aircraft sales to Pakistan due to concerns about their impact on regional deterrence, and also lodged a strong official complaint with Washington after the sale. These strategic divergences limit the untapped potential of their defence partnership (Mello, E. 2023, February 13).

India would do well to remember that it is a prized partner, not an ally. Thus, the Indian government could consider moderating its expectations while simultaneously diversifying away from Russia.

CHAPTER 5:

ASSESSING EFFECTIVENESS AND STRATEGIC IMPACT THROUGH DEFENCE RELATIONS

5.1 EVALUATION OF NEW ROADMAP FOR DEFENSE INDUSTRIAL COOPERATION

The United States and India have established a wide-ranging, strategic partnership in which defence and security cooperation have evolved to become a vital pillar of engagement. The vision for bilateral defence cooperation was established in the September 2013 Joint U.S. – India Declaration on Defense Cooperation and the 2015 Framework for the U.S. – India Defense Relationship, wherein the United States and India signalled their continued commitment to defence cooperation to promote regional and global security and stability(US Department of Defense,2023). Building on these foundational documents and recognizing the strong record of investments by U.S. businesses in India's defence ecosystem for decades, the two countries commit to accelerating and deepening the integration between our respective defence industrial sectors. As such, the United States and India will work together to identify immediate and high-impact opportunities to cooperatively produce the systems required to meet India's

military modernization objectives. Such efforts can lead to greater opportunities for cooperative development of new technologies and cooperative production of existing systems, in turn strengthening supply chains and bolstering India's domestic defence industry. This work will also contribute to the U.S.-India initiative on Critical and Emerging Technology (iCET) announced in January 2023 to elevate and expand strategic technology partnership and defence industrial cooperation(ORF,Expert Speak,2023). In advancing defence industrial cooperation, India and the United States endorse the following general principles of cooperation(US Department of Defense, 2020)

- The United States and India will each evaluate changes to their respective policies and authorities required to support enhanced defence cooperation. (US Department of Defense, 2020)
- India and the United States will work with their domestic defence industries to encourage greater business to-business ties and industrial partnerships. The development and growth of these industrial ties will lead to dividends for innovation and people-to-people ties. (ORF,Expert Speak,2023)
- The United States and India will work to facilitate dialogue between government and industry to address areas of mutual concern that may inhibit collaboration, such as licensing, export controls, security of supply, barriers to defence trade, foreign direct investment, and technology transfer and security. Both sides are committed to identifying and discussing any regulatory barriers in the defence domain. (Department of Defense, 2023 April)
- India and the United States will identify concepts for mission-driven cooperative projects to solve military problems of mutual interest, and in alignment with national strategic vision and requirements, involving advanced technologies.

Bilateral security concerns will serve as the basis for prioritising engineering work in prototyping and experimentation, and for forecasting needs for applied and basic research among the nations' defence scientific communities, governments, industries, and centres of innovation. The projects will be structured with intent to facilitate co-development, and eventually co-production opportunities (US Department of Defense, 2020 September).

- With an aim to make India a logistic hub for the United States and other partners in the Indo-Pacific region, the United States intends to support India in the creation of logistic, repair, and maintenance infrastructure for aircraft and ships.(ORF,Expert Speak,2023)
- The United States intends to support the integration of the Indian defence industry into global supply chains of U.S. defence and aerospace companies. (US Department of Defense, 2020 September)
- India will endeavour to implement the Industrial Security Annex to facilitate deeper bilateral industrial cooperation on classified cooperation projects.(ORF,Expert Speak,2023)
- Both sides will endeavour to conclude the Security of Supplies Arrangement (SOSA) and Reciprocal Defense Procurement (RDP) agreement at the earliest opportunity. (US Department of Defense, 2023, April) Projects under this framework will focus on the following areas, which the two sides have identified as priority areas with most cooperation potential:

Intelligence, Surveillance, and Reconnaissance (ISR), Undersea Domain Awareness ,Air Combat and Support, including Aero Engines Munitions systems, Mobility: Both sides will present concepts for cooperative projects through

government channels, as well as by facilitating business-to-business connections that will advance private innovation and opportunities for cooperation (including through the launch of a new “Innovation Bridge” to connect U.S. and Indian defence startups) (Govt of India, 2023, July).

The United States and India have established mechanisms for developing and sustaining dialogue between Indian and the U.S. industry on defence industrial cooperation. Co-developed or co-produced products will be eligible for sale, including exports. Any such sales or transfers would be evaluated by India and the United States, subject to the national export control laws and regulations of each country and taking into consideration the defence articles and/or services in question, as well as their intended end use, the recipient/customers, and other factors. The United States and India will identify lead points of contact who will be responsible for coordinating engagements and track implementation of cooperative projects agreed to under the Defense Industrial Roadmap. These leads will be responsible for reviewing potential opportunities and prioritising actions, with the goal of presenting at least one project before Ministerial-level meetings. This roadmap is intended to serve as a short-term mechanism for driving cooperation on a handful of discrete projects until 2024, when the two countries envision updating the 2015 Framework for the U.S. - India Defense Relationship. This roadmap is not intended to give rise to rights or obligations under domestic or international law (US Department of Defense, 2023, April).

The new roadmap for India-U.S. defence industrial cooperation will fast track technology cooperation and co-production in areas such as air combat and land mobility systems, intelligence, surveillance, and reconnaissance (ISR), munitions, and the undersea domain,

said a U.S. department of defence press release (Department of Defense. 2023). “This initiative aims to change the paradigm for cooperation between U.S. and Indian defence sectors, including a set of specific proposals that could provide India access to cutting-edge technologies and support India’s defence modernization plans,” it said. The discussions also included cooperation in space, cyberspace, and artificial intelligence (Department of Defense. 2023, July).

India is looking to buy 18 armed high-altitude long-endurance unmanned aerial vehicles from General Atomics Aeronautical Systems Inc. for an estimated \$1.5 billion to \$2 billion, said Rahul Bedi, a defence analyst. The UAVs would likely be deployed along its restive borders with China and Pakistan and in the strategic Indian Ocean region, Bedi said (Bedi, R.,2024).

Washington has been holding on to alliances that are “remnants of the Cold War” and establishing new pacts, like the AUKUS agreement with Britain and Australia and the Quad grouping with Australia, India and Japan, “to divide the world into ideologically-driven camps and provoke confrontation”. China’s Defence Minister claims (Bedi, R.,2024).

India is trying a balancing act in its ties with Washington and Moscow, and has been reducing its dependence on Russian arms by also buying from the United States, France, Germany, and other countries. The U.S. defence trade with India has risen from near zero in 2008 to over \$20 billion in 2020. Major Indian purchases from the United States included long-range maritime patrol aircraft, C-130 transport aircraft, missiles, and drones (The Diplomat, 2024 January)

5.2 IMPACT ON DEFENCE CAPABILITIES AND TECHNOLOGICAL ADVANCEMENT

India is one of the largest and major developing countries in the world, moreover India is trying to capture leadership in Asia geopolitics. Any large state tries to develop in different directions and industries, one of the promising industries, without the development of which it is difficult to imagine a state claiming to be a major geopolitical actor, is the military-industrial complex. India is no exception, India because of the constant conflict with Pakistan, has always developed its armed forces and cared about the availability of various weapons in its armoury. However, a special importance in the development of India's military-industrial complex appeared in the last few years. The full-scale war in Ukraine, after the beginning of which many states thought about the importance of developing their own military-industrial complex, and cooperation with Russia in this area became more difficult for India (US Department of Defense. 2023, September)..

Obviously, New Delhi has also set a course for the development of this industry, as evidenced by the increase in defence production. India's defence production in 2023 exceeded \$12 billion for the first time (thus increasing by 12% compared to 2022). Also, the number of licences issued to private companies for defence production has almost tripled. At the same time, India is doing its best to reduce the impact from China, the Indian government has issued a ban on the use of Chinese elements in domestically produced unmanned systems (Marianeko.N, 2024).

In addition, India is beginning to actively purchase weapons in large quantities. Orders worth \$8 million will go to local defence startup companies. In addition, this order demonstrates the success of the “Make in India” policy program aimed at supporting local manufacturing.

Currently, the Indian Army has about a thousand unmanned systems in service for various purposes, manufactured by India’s HAL and DRDO. The new drones should improve the border forces’ ability to patrol the land border with the PRC. In July 2023, India’s Ministry of Defense announced orders for 97 drones. They will be received by the country’s land forces and navy. The Indian Ministry of Defense also authorised the purchase of 26 Rafale fighter jets for its navy and three Scorpene-class submarines (Gupta.S, 2023).

In addition, India is also developing its own military production. In January 2024, India tested a new air defence system called AKASH-NG. The AKASH-NG air defence missile system successfully launched a missile and destroyed a high-speed unmanned target off the Odisha coast. These tests confirmed the system’s full readiness to intercept various airborne objects that could threaten ground units. The new system is designed to be used by the Indian Air Force for airfield defence. Successful tests will allow DRDO to continue development and bring the system to serial production¹ (IISS. 2023, July).

¹ Serial production is a manufacturing process where identical products are produced in batches. It's a type of mass production that involves assembling products on a moving assembly line. This method is efficient for producing large quantities of standardised items at a lower cost per unit. In contrast to continuous mass production, serial production involves breaks between batches. This allows for more flexibility in production and can be ideal for products with moderate demand or that require some variation in design.

A new UAS was also announced, India unveiled a new 155mm MGS artillery system based on the chassis of a HMTV military truck, it is armed with a 155mm ATAGS cannon. The artillery system is designed to operate in desert, mountainous and high altitude terrain. The new mobile artillery system MGS (Mounted Gun System) is entirely developed in India. This UAS was created in the context of the Indian conglomerate Kalyani Group's statement that the country plans to build the world's largest production of artillery systems. India is also currently testing new models of tanks, stealth fighters, anti-ship missiles, and UAVs. India is also undergoing large-scale purchases of short-range ballistic missiles, radar tracking aircraft, ATGMs, MANPADS, grenade launchers, tanks, helicopters, and small arms from domestic companies for the Indian Armed Forces (PTI, 2024 January).

Two major developments in India's defence industry over the past few years should not be overlooked. In December 2022, India tested an Agni-V intercontinental ballistic missile capable of carrying a nuclear payload. It was stated that the three-stage missile was capable of hitting targets up to 5,400 kilometres away with high accuracy. In total, five modifications of Agni series ballistic missiles with target engagement ranges ranging from 700 km to 5000+ km are considered to be the backbone of India's three-tier deterrence strategy. This strategy includes the capability to use nuclear weapons from air, land and sea-based platforms.

An equally important event of the same year is the commissioning of the aircraft carrier Vikrant . "Vikrant" is designed according to the STOBAR (Short Takeoff But Arrested Recovery) scheme (Bedi.R, 2024). The length of the ship is 262 metres, maximum width

– 62 metres. The range is about 7500 nautical miles at a speed of 18 knots. The aircraft carrier is armed with four AK-630 six-barrel launchers and equipped with Barak-8 anti-aircraft missiles. The deck-mounted air wing can include about 30 aircraft. This event is important first of all because India has become one of the few countries capable of building aircraft carriers of this class, earlier only 5 countries (USA, UK, France, Russia and China) could do it. (Bedi.R, 2024).

India is also increasing its independence in the field of components for equipment; previously, procured from Russia, as Russia was the main partner in military-technical cooperation. However, with the outbreak of a full-scale war in Ukraine, New Delhi and Moscow faced a problem. Russia needs to spend more and more resources on its domestic needs, due to which its export capabilities have declined significantly. On November 21, 2023, the Indian Army issued a tender for work to upgrade its fleet of T-72 tanks (Bedi.R, 2024). It is noted that the Indian military wants to order a major overhaul, which should ensure that the tanks are “restored to near-new condition” and to a state of full combat readiness. This process is being handled by AVNL (Armoured Vehicles Nigam Limited), an Indian defence company that previously claimed to be capable of independently maintaining engines for Soviet and Russian tanks. The plans for 2024 include full import substitution, using only its own units and components in servicing the T-72 and T-90. (Bedi.R, 2024).

At the same time, India seeks to develop military-technical cooperation with other countries, especially with the USA, all this happens in the context of a multi-vector foreign policy and tense relations with China. An example of this is the information that

India will produce Stryker armoured vehicles jointly with the United States. India needs thousands of such vehicles, most of which are to be armed with anti-tank missile systems and equipped with battlefield surveillance or command vehicles. There was also information that India plans to buy 31 MQ-9B SeaGuardian UAVs from the United States as part of a program to modernise the country's armed forces. France's Safran and India's HAL are also setting up a joint venture to produce helicopter engines. The new facility will be located in the Indian city of Bangalore. And the Swedish company Saab has received permission from Indian authorities to start production of the Carl-Gustaf anti-tank grenade launcher. (Steinickes, 2022).

The German-Indian agreement to build diesel submarines at Indian facilities. The naval division of Thyssenkrupp AG and the Indian company Mazagon Dock Shipbuilders Limited are jointly participating in a tender for the construction of six submarines for the Indian Navy at a cost of about 5.2 billion dollars. The Indian Navy already has Type 209 boats in service, which were manufactured at Thyssenkrupp AG facilities. An important fact of such cooperation is that it is not just import of foreign weapons, it is all arrangements for joint production or production under licence in India. This is important primarily because it will create more jobs in India, increase interaction between different sectors of the Indian economy.

Such steps will allow India not only to establish relations with the above states, modernise and increase the arsenal of its armed forces, but also positively affect the economy and scientific and technological development of the state.

However, it is worth noting that India is not only seeking to improve its defence capabilities, but also to occupy an important place in the arms export market. For example, Nigeria, the Philippines and Argentina are planning to buy Indian HAL Tejas fighter jets. There are also new willing buyers of Indian BrahMos missiles, this time Vietnam. Earlier, the Philippines and Indonesia signed a purchase agreement. India is also increasing its exports of air defence systems; Egypt plans to purchase the Akash medium-range surface-to-air missile system from India as part of a program to purchase mobile air defence systems. Earlier, a contract for the purchase of these air defence systems has already been signed with Armenia. Negotiations are also underway to supply arms and ammunition from India to Armenia, with the contract amounting to \$224.7 million (US Department of Defense, 2023)

Technology Advancement

US-India Defence Industrial Cooperation aims at fast-tracking technology cooperation and co-production in areas such as air combat and land mobility systems; intelligence, surveillance, and reconnaissance; munitions; and the undersea domain awareness.

This initiative aims to “change the paradigm for cooperation” between the US and Indian defence sectors, including a set of specific proposals that could provide India access to cutting-edge technologies and support India’s defence modernization plans.

Rajnath Singh and Lloyd Austin also pledged to review regulatory hurdles impeding closer industry-to-industry cooperation and to initiate negotiations on a Security of Supply Arrangement (SOSA) and a Reciprocal Defence Procurement Agreement(RDPA),

which will promote long-term supply chain stability (Department of Defense, 2023 September).

India depends on Russia for nearly half its military supplies but has also increasingly diversified its sources to buy from the US, France and Israel, among others. India also wants global defence manufacturers to partner with Indian companies and produce arms and military equipment in India for local consumption as well as exports. The Biden administration is likely to sign a deal that will allow General Electric Co to produce jet engines in India, powering Indian military aircraft. Engaging in this level of conversation regarding sharing critical technology is no doubt a pointer regarding both the importance and intensity of the relationship (Staff, Reuters, 2023).

5.3 CONTRIBUTIONS TO REGIONAL SECURITY

India's Shift in Strategy after the 2020 Ladakh crisis with China, analysts and practitioners often proclaim that Indian defence strategy has reached a major inflection point in recent years. Discussions with Indian interlocutors before and after the February 2021 disengagement process suggest this shift in strategy may be less transformative and more qualified and constrained than headlines indicate.

Although its fears have not disappeared entirely, India appears less concerned with "provoking" China than it was pre-2020. For example, India is more comfortable with deeper military engagement with the United States and with a more public military dimension to the Quad, as recent Malabar exercises suggest. It has taken serious steps towards economic diversification and technology decoupling (e.g., 5G mobile broadband network trials), and is also willing to publicly indicate that the broader political-economic

relationship with China rests on People's Liberation Army (PLA) behaviour on the border (Rajan.M, 2024).

Despite boulder public signals and increased resolve to balance China, India has not been consistently willing to deepen U.S.-India defence cooperation in all the ways Washington would prefer, or to the extent many U.S. and Indian observers view as proportionate to the challenge. Some Indians characterise this as the product of deep residues of suspicion and nonalignment; others characterise the behaviour as a consequence of intentional diversification strategies and multi-alignment. Across the range of defence relations—from signed agreements to types of military exercises, analytic exchanges, and communications software and protocols—Indian insiders still express concerns of entrapment or limits on autonomy that would constrain India's future foreign policy choices or result in an unnecessary provocation of China (Chandhary. A, 2024).

Relatedly, U.S. observers assess that India does not yet share the same sense of urgency as Washington about the threat environment (especially the maritime domain). While Indian leaders worry about Chinese economic coercion and technological dominance, it is unclear if they are ready to lead bold interventions to redress this concern or will wait to follow others. However, some U.S. participants concluded that the pace and scope of India's national security policy shift are not "appropriate for the challenge."

Indian interlocutors seem less concerned than U.S. participants that the country's grand strategy has a problem. India is honest about a two-front dilemma amidst a significant resourcing problem that stems from years of economic slowdown, the COVID-19 crisis, and an unwillingness to significantly raise or restructure defence budgets. While U.S. strategists talk more about meeting rising challenges with scarce resources by taking risks in certain regions to compete with China effectively, India still appears uncomfortable

with similar prioritisation. The consensus from Indian interlocutors is that New Delhi is driving in the right direction and does not require a fundamental change in course, even as it might need to accelerate in some areas and need support in others. This may be because Indian observers perceive the threat from Pakistan and instability from Afghanistan as nodes of Chinese aggression and encirclement rather than independent, lesser threats to Indian security that could potentially be decoupled (Indian express, 2023 June 12).

Several perspectives were shared on the state and strategy of India's regional relations.

While India is losing ground to China in its neighbourhood, there is still debate on whether India's soft power tools can compete with China's increasing economic and political influence, or if it needs more significant U.S. or Quad backstopping. Even when it seeks U.S. involvement, India remains defensive of its historic sphere of influence. New Delhi desires prior consultation and coordination on any direct, bilateral security or political relationships between the United States and countries in the neighbourhood (e.g., Maldives, Bangladesh, and Sri Lanka). India appears to be less bothered by Japan's bilateral engagements in the region, perhaps because Tokyo coordinates more effectively with New Delhi or because these engagements are principally economic or infrastructure-focused rather than defence-oriented. India prefers that the United States deals with the region by, with, and through New Delhi. Indian strategists contend this approach bolsters India's ability to withstand China's influence and enables more regular engagements and localised regional management than the United States can maintain. However, U.S. strategists warn that, despite India's presence, it still does not have the foreign policy institutional infrastructure—such as a large foreign service, a development aid bureaucracy, or a large defence attaché corps—to permit difficult, sustained lines of

effort over time or in response to a regional political or humanitarian crisis (Ministry of Defense, 2020 February).

India's emphasis on "ASEAN centrality" seems to be more of an "and" than an "either/or" proposition. This emphasis is primarily about revitalising diplomacy and the East Asia Summit as a key forum for diplomatic engagement in addition to the Quad. Additionally, it is also an expression of pushing the Quad to provide public goods for the region—not just club security goods for the Quad alone. This language is also believed to give India political cover to defend the Indo-Pacific framework to its neighbour and ASEAN partners (Kapur.S, 2022).

India's Threat Environment & Continental Dilemmas

Events in 2020 have reaffirmed India's focus on continental encirclement threats, which it acknowledges will divert attention and resources from the maritime domain.

- **Pakistan.** The current ceasefire on the Line of Control in Kashmir is considered fragile and unlikely to hold long-term. Indian interlocutors viewed the ceasefire as a symbolic Pakistani gesture meant to relieve pressure on Islamabad ahead of expected fall-out from the Afghan conflict. Since India views the ceasefire as a tactical decision rather than an indicator of a Pakistani strategic shift, it may not have freed significant Indian resources or assets. Furthermore, Pakistan is seen as too beholden to China to ever be decoupled. India increasingly sees Pakistan as a proxy arm of China, limiting the extent to which India perceives rapprochement with Pakistan as a realistic strategy to shift its attention toward balancing China. Indian interlocutors do not expect the modicum of stability in

Kashmir to hold, which may renew tensions with Pakistan. (The Indian Express, 2023 June 12).

- **China.** The U.S. focus has, unsurprisingly, concentrated on China's growing power projection capabilities in the East and South China Seas. However, People's Liberation Army (PLA) incursions to generate military advantage on the disputed Sino-Indian border have created an enduring dilemma for India over the next five to ten years. China's positions in the Depsang Plains could effectively preempt India's ability to create dilemmas for China on its shared frontier. These positions can also leverage China's offensive routes to threaten India's positions on the Siachen Glacier and Salto Ridge sectors, and its hold over Ladakh. Some Indians believe the PLA is equally tied down by the prospect of a more active border (Carnegie Endowment for International Peace, 2024).

Consequently, this is a theatre where India feels it cannot economise but must show visible signs of resolve. (Rajan.M, 2024) In New Delhi's calculus, the domestic political costs of loss of access to territory—even if not operationally or strategically meaningful -- outweigh the expenses of troop deployments. Indian strategists see their approach as costly but sustainable, limiting interest in a new model of deterrence, even while some doubt India's offensive options. Simultaneously, Indian interlocutors see less risk than their U.S. counterparts of vertical or horizontal escalation to erode what India perceives as relative Sino-Indian military parity along the frontier. While there was some acknowledgment of Chinese cyber intrusions into Indian civilian infrastructure and potential economic coercion, there appeared to be little consideration of how crossdomain

challenges might complicate crisis bargaining. India also sees political instability on its continental borders—from Myanmar to Nepal to Afghanistan—as intensifying, threatening, inter-related, and fueled or exploited by China (Rajan.M, 2024).

- **Afghanistan.** The U.S. government contends withdrawal from Afghanistan frees the United States to focus on the Indo-Pacific, while Indian participants warned that spillovers from Afghanistan pose a greater, more direct threat to India’s national security than China’s behaviour in East Asia or the South China Sea. Some Indian observers see China’s involvement and cooperation with Pakistan in the Afghan conflict as a threat to India because it will be a “backstage operator,” even while some U.S. strategists see it as a liability for China (The Economic Times, 2023). U.S. participants forecasted that withdrawal from Afghanistan would allow the United States to work more closely with India. Nevertheless, some Indian participants feared Afghanistan would continue to remain a source of friction in the relationship, as long as the United States continues to cooperate with Pakistan and the Quad demurs from involvement. Despite criticisms of Washington’s “lack of coordination” on Afghanistan, calls for greater consultation, and hopes this might somehow become a quagmire for Pakistan, there were few realistic proposals for U.S.-India cooperation to shape Afghan political dynamics (CEIP, 2024).

- **Indian Ocean Region (IOR).** Indian interlocutors expressed some concern for deteriorating or fragile relationships in their immediate neighbourhood with Bangladesh, Sri Lanka, and the Maldives, while U.S. participants paid more attention to the deteriorating military and naval balance in the Bay of Bengal. India seems sceptical of the People’s Liberation Army Navy’s (PLAN) ability to pose a challenge or sustain

operations in the IOR over the next five to seven years and continues to evaluate the continental theatre as more deserving of its limited resources. Indian analysts were forthright about how the country's naval capability development will slow with the likely cancellation of a third aircraft carrier and delays in submarine acquisitions over the next five to ten years (The Diplomat,2024).

There are some areas of India's neighbourhood where both partners perceive the other to be working at cross-purposes. While the United States often defers to India's regional policy vision, some American officials worry that India's assertive foreign policy behaviours and majoritarian politics might rankle neighbouring states, and U.S. moderating influence can help prevent a backlash. India, for its part, worries that U.S. policy choices cede too much influence to China. Additionally, Indian interlocutors stressed that New Delhi expects to be treated as the preeminent military power on the subcontinent as a first principle for greater cooperation. While there was some optimism that Japan, India, and the United States might compensate for each other's weaknesses through collaborative efforts in India's near abroad—specifically India's presence backed by Japanese investment and American diplomatic heft—there remains ample room for more concrete thinking (The Diplomat,2024).

India's Tension Between Self-Help and External Help

- India's U.S. Goldilocks Dilemma.² Despite the deteriorating security environment and the Ladakh crisis of 2020, U.S. participants sensed India still retains some ambivalence about what kind of relationship it desires with the U.S. military. In this assessment, India faces a “goldilocks dilemma” of wanting just the right amount of support on-call from the United States without undermining India's regional primacy. This could stem from a desire to manage the added costs of a partnership or to avert entrapment. At the same time, India still maintains some lingering—albeit diminishing—doubt about the durability of the United States' competitive approach to China, which feeds into its concern over potential abandonment in a potential Sino-Indian contingency (Rajan.M 2024).

- U.S. participants were surprised to hear consistent Indian expressions of feeling “alone” during its militarised border crisis with China on the Line of Actual Control (LAC) in 2020, despite public reporting of substantial U.S. support.¹⁰ To remedy this in the future, American analysts raised the prospect of joint contingency planning, but Indian strategists seemed sceptical. Instead, Indian strategists seem to prefer a much more gradualist approach to defence cooperation, starting with joint assessment processes. While, on the one hand, Indian participants contend India will be hesitant about concrete military collaboration in a conflict scenario, they also assume that it would be easy to scale up

² Goldilocks Dilemma: This term refers to a situation where someone desires a balance between two extremes, seeking an option that is “just right,” similar to the story of Goldilocks and the Three Bears. In the context of India-U.S. relations, India seeks a middle ground between receiving enough military support from the U.S. to deter China without compromising its own regional dominance or becoming overly reliant on the U.S.

collaboration as needed in a crisis. They perceive U.S. channels of support for India as something that can be turned on seamlessly, rather than a process that needs to be planned, exercised, and built. U.S. interlocutors stressed that should India require direct military support, robust, secure command and control networks cannot be established on short notice (The New Indian Expresses, 2023)

- **Continental Dilemmas.** Both sides praised the progress of the Quad as a valuable forum for cooperative security and public goods. Some Indian participants lamented the lack of Quad attention to India's continental dilemmas, including Afghanistan. At the same time, proposals for more visible signals of military interoperability on the continent, such as a joint air defence exercise, were regarded as too provocative towards China. Worries were expressed about infringements on Indian sovereignty and autonomy even in the domain of growing naval interoperability that both sides embrace (The Economic Times, 2023).

5.4 LESSONS LEARNED AND FUTURE PROSPECTS

Progress Since 2022

Although India-US defence cooperation grew substantially between 2000 and 2021, it did not involve any kind of a military alliance. India had purchased some US\$20 billion worth of US defence equipment and weapons, but there had been little progress in the co-development and co-production of defence systems promised by the DTTI initiative. However, in 2022-23, India-US defence ties have been marked by a qualitative shift. There are three factors for this. First are the tensions arising out of Chinese actions in

eastern Ladakh in 2020; second is the increased friction between the US and China arising out of developments in the Indo-Pacific; and third is the US decision to create a new domestic industrial framework emphasising semiconductors, green energy, and nearshoring and friendshoring of its supply chains. In May 2022, when Modi met US President Joe Biden in Tokyo, they announced an ‘Initiative for Critical and Emerging Technologies’ (iCET) (ORF online, 2023). In January 2023, in preparation for Modi’s visit to Washington in June, Indian and American national security advisers met and gave shape to the iCET, and committed to launch it as an innovation bridge to link US and Indian defence startups. iCET was launched in Washington through an inaugural meeting during the Modi visit. The White House fact sheet noted that the two countries were set to expand their “strategic technology partnership and defence industrial cooperation” not just between governments but also between businesses and academic institutions.⁶⁷ In May 2023, India and the US held the inaugural ‘Advanced Domains Defense Dialogue’, which had been decided on during the ‘2+2 ministerial dialogue’ in 2022. This was at the subCabinet officials level, and the two sides exchanged Progress Since 2022 views on new defence domains emphasising space and artificial intelligence. Parallel to this were discussions between US Defence Secretary Lloyd Austin and his Indian counterpart Rajnath Singh on the issue of Indo-US defence industrial cooperation based on their ongoing activities arising from the 2013 ‘Joint Declaration on Defence Cooperation’ and the 2015 ‘Framework for the US-India Defence Relationship’. Under this, they issued a roadmap to assist the process till 2024, when the 2015 ‘Framework’ will be renewed. (Business FE, 2024 February)

The US declared that it aims to make India “a logistic hub for the United States” in the Indo-Pacific. It also declared a commitment to integrate the Indian defence industry into the global supply chain of US defence and aerospace companies. Another key element was implemented in June 2023 with the launch of the ‘India-US Strategic Trade Dialogue’ in Washington DC. Foreign Secretary V.M Kwatra led the Indian delegation, whose objective was to facilitate the development and trade in “critical technology domains” such as semiconductors, space, telecom, quantum technology, AI, defence, and biotech (Sharma.S, 2023). Steered in the US by Alan Estevez, the top US official dealing with export control and compliance at the US Department of Commerce’s powerful Bureau of Industry and Security, the dialogue aimed to ensure that the thicket of US regulations does not choke the process.⁷⁰ Modi’s visit to the US in June 2023 was the culmination of the official-level processes that had begun in January of that year with the meeting of the two national security advisers in Washington, DC. Many of the defence deals announced were in the works for some time. Deals related to US assistance in producing electric vehicles and pushing renewable energy projects were announced, as were some related to Micron Technology’s investment in a new chip plant in Gujarat (Sharma.S, 2023).

Overall, the visit led to positive outcomes for both sides. On 21 June 2023, during Modi’s visit, the Indian defence ministry and the US defence department launched a bilateral ‘Defence Acceleration Ecosystem’ (INDUS-X) to expand strategic technology and defence industrial cooperation, along the lines suggested by the two national security advisers in January, to establish an “innovation bridge” linking the US and India. India’s Innovations for Defence Excellence (iDEX) organisation and the office of the US

Secretary of Defense will provide the Leadership for INDUS-X. This is envisaged as an ambitious venture that would connect industry and academic institutions and promote public-private partnerships.. The second Indus X summit took place on 20- 21 February 2024 in New Delhi, and, besides the iDEX and the US Department of Defence, the event was coordinated by the US-India Business Council and the Society of Indian Defence Manufacturers (Ministry of Defence, 2023)

The event saw the selection of the prize-winners from startups that competed in the Indus-X innovation challenges related to the maritime domain launched last year. In June 2023, the General Electric (GE) company agreed to produce their GE F-414 jet engine in India jointly. Under the deal, GE will provide 80 percent technology transfer. GE had initially agreed to build 99 F-404 engines for the Indian Air Force but is now looking to make 100 F 414-INS6 for India's LCA Mk 2 and Advanced Medium Combat Aircraft (AMCA) programmes, as well as make a bid to collaborate with an Indian agency to make the AMCA Mk 2 engine. However, India remains in talks with Rolls Royce (England) and Safran (France) for developing the AMCA Mk2 engine. A fact sheet issued by the White House indicates that technology transfer will be a major factor in the bilateral relationship. In addition to collaboration in semiconductors, the two nations will develop partnerships on critical minerals, advanced telecom, space, quantum technology, and AI.

Another important development was the conclusion of a Master Ship Repair Agreement (MSRA) between the US and the Larsen and Toubro shipyard in Kattupalli, near Chennai, and efforts to work out similar agreements with other Indian shipyards. In September

2023, the Mazgaon Dockyards Ltd also signed an MSRA with a US government entity. In November 2023, India and the US conducted their fifth annual ‘2+2 ministerial dialogue’. A significant decision taken there was the agreement to start the joint production of Stryker, an armoured infantry combat vehicle, in India.

The discussions also focused on the importance of India emerging as a maintenance, repair, and overhaul (MRO) facilities hub for the US in the region. On 1 February 2024, the US State Department notified the US Congress of a possible foreign military sale of MQ-9B UAVs and other equipment worth US\$3.99 billion. This equipment would see the armed UAV being used in its Sky Guardian and Sea Guardian versions. The related equipment included Hellfire missiles and laser small-diameter bombs. The one area where not much information is available is intelligence cooperation. Having signed the four foundational agreements, India has the hardware to share intelligence information, but on a selective basis. Reports suggest that the US helped India repel a major Chinese incursion in the Tawang area in December 2022. However, there are reasons to believe that the US also provides information on the movement of Chinese ships from the Pacific to the Indian Ocean. During the second meeting of the IndusX in New Delhi in February 2024, Indian Defence Secretary Giridhar Aramane openly acknowledged the US assistance in dealing with the situation in eastern Ladakh in 2020, noting that the one thing that had helped India “very quickly” was the “intelligence and situational awareness which US equipment and US government could help us with”. It is a must for us and we have to do it together.” (Ministry of Defence, 2024)

The Future of Indo-US Defence Industrial Cooperation

The SOSA and RDP will enable India to join a list of countries that are compliant with the Defence Federal Acquisition Regulation Supplement (DFARS) or those that are presently qualified to supply significant components and parts for US military orders. The RDP is essentially a waiver of US laws that otherwise restrict the federal government from procuring goods from non-domestic sources. This could provide big opportunities for Indian companies to become ancillary producers for the US industry. However, India is still some distance from becoming part of the US National Technology Industrial Base (NTIB), which is a legal category established by the US law (Peter HM Nicastro, 2023). This places countries like Canada, the UK, Australia, and New Zealand in a special category for supplying military operations, conducting advanced research and development (R&D), and systems development to ensure the technology dominance of the US armed forces. They are also involved in securing reliable sources of critical materials and industrial preparedness of the US in the event of a national emergency. The US is seeing its promotion of DTTI and iCET with India as part of an effort to expand defence cooperation partnerships with non-NTIB countries. Notably, countries like Japan, South Korea, and Israel are also not members of the NTIB.

CHAPTER 6

CONCLUSION

The conclusion of the dissertation marks the culmination of an in-depth exploration into the historical evolution and contemporary dynamics of the strategic defence partnership between India and the USA. Through the examination of key diplomatic, military, economic, and industrial developments, the dissertation has sought to illuminate the multifaceted nature of the relationship and its strategic implications for both countries and the broader geopolitical landscape.

Chapter 2 of the study explores the historical evolution of the India-US strategic partnership within the context of the Cold War legacy and strategic alignment. It outlines the development of defence collaboration and the geopolitical dynamics between the two countries during this period. During the 1950s, India and the United States initiated defence collaboration, often in conjunction with the UK and Australia. This included joint activities and early arms deals, such as the sale of T-6 Texan Trainer aircraft in 1951 and C-119 aircraft in 1954 (Bhargava, G. C. K. ,1999). However, tensions emerged after the Sino-Indian war of 1962 when the US provided emergency military aid to India despite concerns about its relations with Pakistan. Meanwhile, India's ally, the USSR, initially maintained neutrality and later supported China, straining India's relations with both superpowers (Embassy of India.,2006 ; Husain, N. A., 1985).

Throughout the Cold War era, India's suspicions about American reliability as an arms supplier intensified due to the US-Pakistan alliance and arms transfers to Pakistan.

Despite sporadic military aid from the US, such as the \$60 million emergency aid program approved by President Kennedy in 1962, arms embargoes were imposed on India, particularly following conflicts like the Indo-Pak wars of 1965 and 1971 (GAAN, N.,1992). Geopolitical issues, notably the Kashmir problem and nuclear proliferation, further strained Indo-US relations. The US's failure to recognize Pakistani aggression in Kashmir and its arms transfers to Pakistan exacerbated India's grievances (Shah, K. M.,2021). Additionally, India's refusal to sign the Nuclear Non-Proliferation Treaty and its 1974 Peaceful Nuclear Explosion heightened tensions with the US, which viewed India's nuclear program with suspicion (Chakma, B.,2005). Despite challenges, there were instances of cooperation between India and the US, such as joint air defence exercises in 1963 and collaboration in India's Light Combat Aircraft project during the Reagan administration. However, differences over Cold War politics, including India's non-alignment policy and opposition to US-led military alliances like SEATO and CENTO, persisted (Rafique, N ,2000.)

In the intricate tapestry of 21st-century geopolitics, the evolving partnership between India and the United States stands as a testament to the transformation power of strategic collaboration. This chapter 3 delves into the remarkable advancements in diplomatic, defence, and security cooperation between the two nations over the past two decades, tracing the trajectory of their relationship from tentative engagement to a robust strategic alliance. As the world transitioned from the shadows of the Cold War to the complexities of the modern era, India and the US found themselves at a crossroads, navigating a landscape marked by shifting power dynamics, emerging threats, and shared aspirations for stability and prosperity. Against this backdrop, the 21st century witnessed a dramatic

shift in the dynamics of the India-US relationship, propelled by a convergence of strategic interests, shared democratic values, and mutual respect (Ministry of External Affairs,1995)..The first section of this chapter, "21st Century: Deepening Ties Defence Agreements and Strategic Convergence," provides a panoramic view of the evolving India-US relationship, offering insights into the key factors that have contributed to the deepening of their strategic partnership. From the signing of foundational defence agreements to joint military exercises and collaborative counterterrorism initiatives, this section sets the stage for a comprehensive exploration of the multifaceted dimensions of their cooperation.The subsequent section, "India-US Foundational Agreements," provides a detailed examination of each of the four major foundational agreements – GSOMIA, LEMOA, CISMOA, and BECA (Pandit, R.,2018). By elucidating their purpose, scope, and implications, this section offers a comprehensive understanding of the institutional framework underpinning India-US defence cooperation.``Implications for the Region" explores the broader impact of India-US defence collaboration on the Indo-Pacific region, considering its influence on regional dynamics, power structures, and maritime security. Through an analysis of strategic imperatives and geopolitical alignments, this section elucidates the significance of the India-US partnership in shaping the geopolitical landscape of the Indo-Pacific(Rosen, M., & Jackson, D., 2017)..

"Through the Lens of Indo-Pacific & QUAD" examines the India-US partnership in the context of the Indo-Pacific strategy and the Quadrilateral Security Dialogue (QUAD), highlighting their contributions to promoting a free, open, and inclusive Indo-Pacific (Minister of External Affairs,2023). By exploring the strategic objectives and collaborative initiatives of these frameworks, this section underscores the pivotal role of

India and the US in advancing regional security and prosperity. Joint Exercises shed light on the growing military collaboration between India and the US, focusing on the significance of joint exercises in enhancing interoperability, strategic coordination, and crisis response capabilities. Through an analysis of joint exercises such as Malabar and Yudh Abhyas, this section underscores the role of military-to-military engagement in strengthening bilateral defence ties. "Emerging Concerns in Counterterrorism" acknowledges the shared threat of terrorism and examines how India and the US have collaborated on counterterrorism initiatives since the tragic events of 9/11. By tracing the evolution of their counterterrorism cooperation, this section highlights the synergies and challenges in addressing transnational terrorist threats (Verma, A. 2017).

Chapter 4 of the study explores the scope and scale of India-US military industrial cooperation in the 21st century. Despite robust defence trade and strategic relations, the defence industry remains an area with untapped potential for meaningful collaboration. This chapter investigates the dynamics of defence industrial cooperation between India and the USA and identifies factors contributing to its limited progress. The analysis focuses on munitions items, requiring government permission for transfer due to their exclusive defence use. Both countries maintain lists of such items, with transfers above a certain value necessitating government authorization. In the USA, these items are regulated under the International Traffic in Arms Regulations (ITAR), while India's list falls under the Special Chemicals, Organisms, Materials, Equipment and Technologies (SCOMET) list (Sidharth, M. P, 2022).

Defence industrial cooperation is categorised into government-to-government (G-G), industry-to-industry (I-I), and voluntary partnerships. G-G cooperation arises from

defence contracts/agreements requiring technology transfer or joint development. I-I cooperation is driven by offset obligations, while voluntary partnerships stem from globalisation efforts.

India's defence production is dominated by Defense Public Sector Undertakings (DPSUs) and Indian Ordnance Factories, with concerns over productivity and reliance on foreign resources. The Make in India policy supports the emergent private sector, with over 200 licensed companies bidding for government projects (Abercrombie, C. 2019)..

The transformation of India's defence industrial sector over the past two decades, challenging conventional perceptions of its capabilities. Historically dominated by state-owned entities, the sector has witnessed a notable shift towards private sector participation, marked by enhanced research and development capabilities, product quality, and global competitiveness. Leading Indian companies like the Kalyani Group, Bharat Forge, and Larsen and Toubro have emerged as key players, demonstrating prowess in manufacturing artillery systems, aerospace components, and multi-barrel rocket launchers, among other defence equipment. Additionally, conglomerates like the Tata Group and Mahindra Defence Systems have made significant strides in aerospace, robotics, and armoured vehicles, reflecting the diversification of India's defence industry (Hindustan Times,2023).

Moreover, the chapter sheds light on collaborative efforts between India and the USA in the defence sector, highlighting initiatives such as the India-US Defence Acceleration Ecosystem (INDUS-X) aimed at fostering innovation and technology exchange. These collaborative endeavours have not only bolstered India's defence capabilities but have

also strengthened bilateral ties between the two nations. Joint ventures and technology transfers between Indian and US companies have facilitated the transfer of advanced technologies and expertise, driving innovation and efficiency in defence production (IISS,2023). Despite notable progress, the chapter also addresses the challenges and complexities inherent in India-US defence industrial cooperation. Regulatory hurdles, strategic divergences, and concerns over arms sales and technology transfer pose significant obstacles to seamless collaboration. Regulatory frameworks on both sides present challenges to navigating complex export control regulations and ensuring compliance with stringent licensing requirements. Moreover, divergent approaches towards key geopolitical actors such as China and Russia complicate alignment on strategic objectives and priorities, potentially impeding the deepening of defence cooperation between India and the USA. India's growing prowess in defence manufacturing to propel the strategic partnership forward. Despite challenges, the potential for deeper engagement and mutual benefit remains significant, offering opportunities for both countries to advance their defence capabilities and strengthen bilateral relations in the years to come (K, P.,2023).

Chapter 5 of the dissertation evaluates the effectiveness and strategic impact of defence relations between India and the US. The United States and India have established a significant strategic partnership, with defence and security cooperation playing a pivotal role. This chapter assesses the new roadmap for defence industrial cooperation between the two nations, aiming to accelerate integration between their defence sectors and strengthen India's military modernization objectives. The vision for bilateral defence cooperation was established through joint declarations and frameworks, signalling continued commitment to promoting regional and global security and stability. Both

countries recognize the potential for cooperative production of defence systems and the development of new technologies, which can enhance supply chains and bolster India's domestic defence industry. General principles of cooperation include evaluating policy changes, encouraging business-to-business ties, and facilitating dialogue between government and industry to address regulatory barriers (Economic Times.,2024). Priority areas for cooperative projects include intelligence, surveillance, and reconnaissance (ISR), undersea domain awareness, air combat and support, munitions systems, and mobility. Mechanisms for dialogue between Indian and U.S. defence industries have been established, with co-developed or co-produced products eligible for sale, subject to export control laws and regulations. Lead points of contact will coordinate engagements and track implementation of cooperative projects outlined in the Defense Industrial Roadmap (Bhalla, A.2020)

The new roadmap aims to fast-track technology cooperation and co-production in various areas, including air combat, land mobility systems, ISR, munitions, and the undersea domain. Discussions also include cooperation in space, cyberspace, and artificial intelligence.

India's defence procurement plans include acquiring armed high-altitude long-endurance unmanned aerial vehicles from General Atomics Aeronautical Systems Inc., indicating a shift towards modernisation and enhancing border security (Bedi, R. 2024).

However, India maintains a balancing act in its ties with Washington and Moscow, reducing dependence on Russian arms while increasing defence trade with the United States. This reflects broader geopolitical dynamics, with Washington forming new alliances and partnerships to address regional and global challenges.

As I wrap up our exploration of the relationship between India and the USA, it's clear that diplomatic meetings, military teamwork, and economic deals have all played crucial roles in shaping how the partnership has grown over time. The first hypothesis we asked about how these diplomatic, military, and economic activities have affected the relationship over the years has been answered. We've seen that agreements like the US-India Civil Nuclear Agreement and talks about defence have helped build trust and cooperation. Military working together and sharing intelligence have also made it easier for both countries to work together on security issues. And economic deals have boosted growth and innovation on both sides, strengthening their bond.

Moving on to the second hypothesis about how defence collaboration between India and the USA is going, we found that it's actually going really well. Partnerships where they work together on things like technology and research have helped both countries improve their defence capabilities. Agreements like the Defense Technology and Trade Initiative (DTTI) have given them a framework to cooperate more closely. As a result, their defence partnership is getting stronger, which is good news for both countries' security.

In short, my findings back up what I have thought might be true, diplomatic meetings, military teamwork, and economic deals have all helped make the India-US partnership stronger over time. And when it comes to defence things are looking up too. With more cooperation, both countries are better equipped to handle the challenges of the modern world and work together for their mutual benefit. In my research, I have found strong evidence to support the first question about how diplomatic meetings, military engagements, and security agreements have influenced the India-US defence partnership

over the time. Similarly, the study into the current state of defence industrial cooperation between the two countries has provided affirmation for the second question. Joint ventures, technology transfers, and collaborative research and development initiatives have proven to be effective in enhancing defence capabilities and strengthening the strategic partnership between India and the USA.

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