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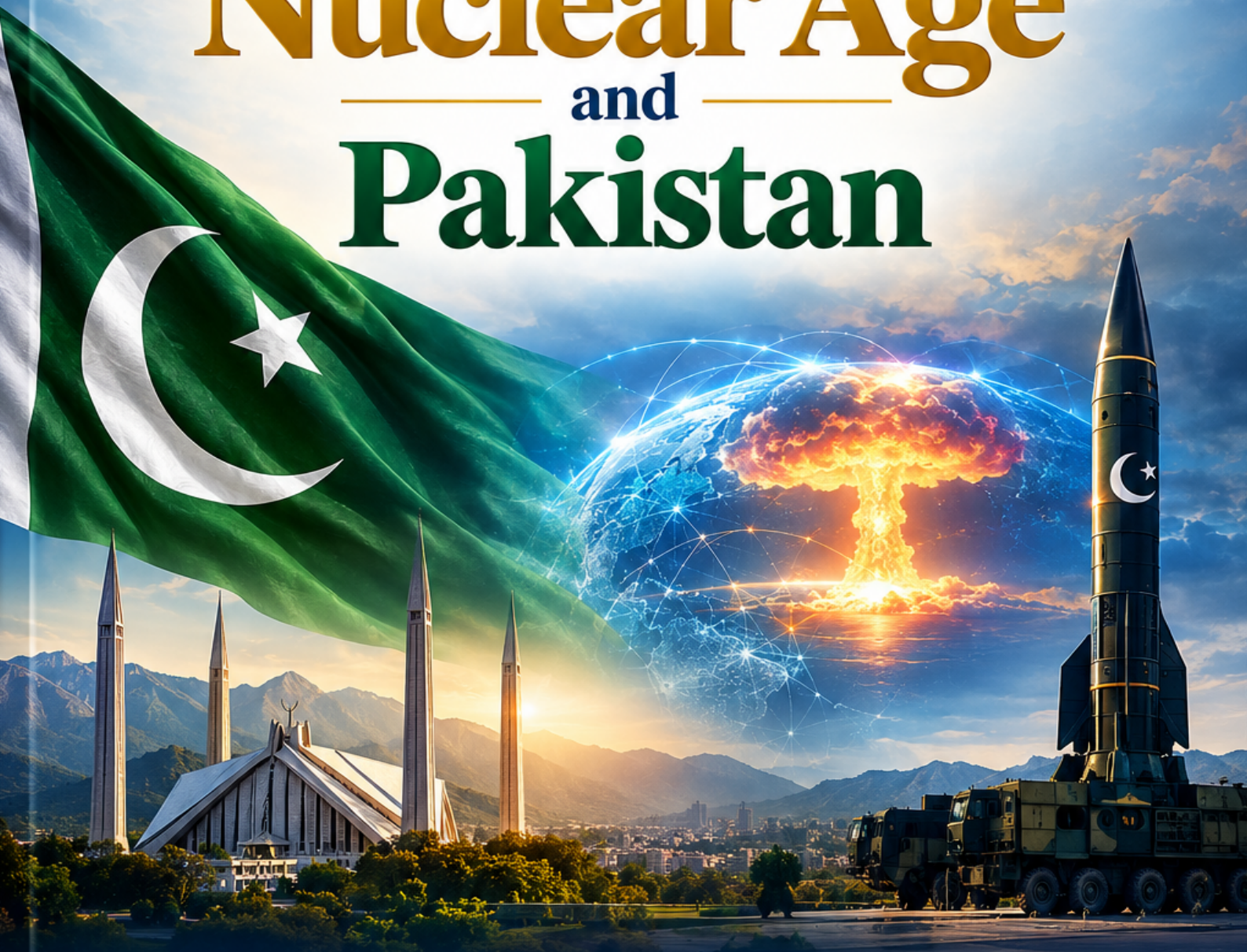
The Third Nuclear Age and Pakistan



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October 2026

The Third Nuclear Age and Pakistan

Command, Custody and the Limits of Military Control

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The analysis draws exclusively on publicly available sources. These include official statements, the texts of constitutional amendments and legislation, reports by international organisations, peer-reviewed scholarship, and the assessments of established research institutions such as SIPRI, the Bulletin of the Atomic Scientists, the International Panel on Fissile Materials and the Nuclear Threat Initiative. No classified or restricted information has been used. Figures on warheads, fissile material, missile ranges and facilities are open-source estimates and may differ from official data. Facilities described as "assessed" or "possible" reflect analytical judgements rather than official confirmation. Charts, maps and organisational diagrams are schematic and are intended for illustration only.

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This monograph offers policy analysis and a set of options for reform rather than a definitive account of any single event or institution. Its assessments of Pakistan's command arrangements reflect information available at the time of writing in 2026, including the 27th Constitutional Amendment and the legislation of August 2026. Constitutional, institutional and strategic developments in this field continue to evolve rapidly, and readers should treat the arrangements discussed as a changing context against which the monograph's analysis and recommendations are set. Nothing in this publication should be read as questioning the professionalism of those responsible for the safety and security of Pakistan's nuclear assets.

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For all those who build shields in silence,
and for those who must now build the argument.

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ABSTRACT

This monograph examines Pakistan's nuclear programme as it enters what scholars now call the third nuclear age, an era defined by multipolar rivalry, the collapse of bilateral arms control, and the entanglement of nuclear forces with precision conventional weapons, space systems, cyber operations and artificial intelligence. It argues that Pakistan's trajectory since the 1998 Chagai tests has been marked by a widening gap between capability and control. Technologically, Pakistan has moved well beyond the minimum deterrent of 1998: it now fields a diversified missile force with a multiple-warhead programme under development, an emerging sea-based leg, a separate conventional rocket force, indigenous and Chinese-launched satellites, and a networked air-defence and strike architecture that was tested in combat in May 2025.

Governance has moved in the opposite direction. The programme began as the political project of an elected Prime Minister, Zulfikar Ali Bhutto, but passed after the coup of 1977 into the custody of General Zia-ul-Haq and the military establishment, where it has remained. The National Command Authority created in 2000 gave civilians a formal chair and left the substance with the army. Between October 2024 and August 2026, the 26th Constitutional Amendment, the extension of service chiefs' tenure, the 27th Constitutional Amendment and two statutes enacted with retrospective effect concentrated authority further, in a single officer who now commands all three services as Chief of Defence Forces, sits in the National Command Authority, recommends the commander of the unified strategic forces, advises the Prime Minister through a new Defence Forces Headquarters, and holds a constitutionally protected rank for life.

Drawing on SIPRI, the Bulletin of the Atomic Scientists, IAEA and NTI assessments, IMF reporting, the texts of the relevant legislation and the historical scholarship, the monograph finds that Pakistan's custodial record remains strong but that its command arrangements have become less accountable, less durable and less predictable at precisely the moment that new technologies demand more deliberative and more legitimate control. It concludes with policy options for restoring civilian authority, renewing nuclear doctrine for the third nuclear age, and building independent national capacity for nuclear policy and diplomacy.

PREFACE

Pakistan conducted its nuclear tests at Chagai in May 1998, and much of its nuclear thinking has remained anchored in that moment. The logic of 1998 rested on survival against a larger adversary, on the conviction that capability was its own argument, and on the assumption that questions of control were best left to the institution that guarded the weapons. This monograph begins from the view that the logic of 1998 no longer fits the world in which Pakistan's weapons now exist.

The global debate has moved on. The first nuclear age was the bipolar contest of the Cold War. The second, which Pakistan joined at Chagai, was defined by the spread of nuclear weapons to regional powers in Asia. Scholars now describe a third nuclear age, in which great-power rivalry has returned, arms control has collapsed, and nuclear risk is shaped as much by hypersonic and precision conventional weapons, satellites, cyber tools and artificial intelligence as by warheads themselves. Pakistan is a participant in this new age. Its missiles, satellites, navigation systems and networked forces have advanced quickly, and its conflict with India in May 2025 was among the first crises in which these technologies were used at scale between nuclear-armed states.

The central question of this study is whether Pakistan's governance of its nuclear forces has kept pace with that technological transformation. The answer it reaches is that it has not. Since General Zia-ul-Haq took personal control of the programme after 1977, no elected leader has been the author of a significant nuclear decision other than the formal authorisation of the 1998 tests. The constitutional and statutory changes of 2024 to 2026 have now placed conventional command, a seat in the nuclear authority, and influence over the strategic forces in the hands of one officer. A state whose weapons are becoming faster, more numerous and more entangled with conventional forces needs more deliberation, more accountability and more civilian authority, and it is receiving less.

The purpose of the monograph is assessment rather than advocacy or indictment. It acknowledges what Pakistan has achieved in building and safeguarding its deterrent, and it does not soften its conclusion about how that deterrent is now governed. Citations follow the Chicago Manual of Style, seventeenth edition, and British English is used throughout.

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Part of the literature review and analytical framework presented here was developed during the author’s research in the Department of Politics and International Relations at the University of Reading on the strategic implications of China's hypersonic weapons programme for South Asian deterrence stability. That research, and the supervisory guidance received during it, shaped the treatment of emerging technologies and the third nuclear age in this work.

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LIST OF ABBREVIATIONS

ACDA	Arms Control and Disarmament Affairs Directorate (within SPD)
AIP	Air-Independent Propulsion
ALCM	Air-Launched Cruise Missile
ARFC	Army Rocket Force Command (established August 2025)
CDF	Chief of Defence Forces (created by the 27th Amendment, November 2025)
CJCSC	Chairman Joint Chiefs of Staff Committee (abolished November 2025)
CNSC	Commander, National Strategic Command
COAS	Chief of Army Staff
CTBT	Comprehensive Nuclear-Test-Ban Treaty
DBT	Design Basis Threat
DCC	Development Control Committee (of the NCA)
DFHQ	Defence Forces Headquarters (Defence Forces of Pakistan Act 2026)
ECC	Employment Control Committee (of the NCA)
FATF	Financial Action Task Force
GLCM	Ground-Launched Cruise Missile
HEU	Highly Enriched Uranium
HRP	Human Reliability Programme
IAEA	International Atomic Energy Agency
IISS	International Institute for Strategic Studies
IPFM	International Panel on Fissile Materials
IRBM	Intermediate-Range Ballistic Missile
ISIS	Institute for Science and International Security
ISPR	Inter-Services Public Relations
KRL	Khan Research Laboratories (Engineering Research Laboratories until 1981)
LD	London Dialogue
LoC	Line of Control
MaRV	Manoeuvrable Reentry Vehicle
MIRV	Multiple Independently Targetable Reentry Vehicle
MRBM	Medium-Range Ballistic Missile
NC3	Nuclear Command, Control and Communications
NCA	National Command Authority (apex body, chaired by the Prime Minister)
NDC	National Development Complex
NISAS	National Institute of Safety and Security
NPA	Nuclear Policy Authority (proposed)
NPT	Nuclear Non-Proliferation Treaty
NSC	National Strategic Command (unified command of the strategic forces, created November 2025)
NSG	Nuclear Suppliers Group
NTI	Nuclear Threat Initiative
PAEC	Pakistan Atomic Energy Commission
PAL	Permissive Action Link
PCENS	Pakistan Centre for Nuclear Non-Proliferation Studies
PINSTECH	Pakistan Institute of Nuclear Science and Technology
PNRA	Pakistan Nuclear Regulatory Authority
PRP	Personnel Reliability Programme
SIPRI	Stockholm International Peace Research Institute
SLCM	Submarine-Launched Cruise Missile
SPD	Strategic Plans Division

SRBM	Short-Range Ballistic Missile
SUPARCO	Space and Upper Atmosphere Research Commission
TEL	Transporter-Erector-Launcher
TWh	Terawatt-hours

EXECUTIVE SUMMARY

Pakistan's nuclear programme has entered the third nuclear age with a modern and diversifying arsenal and an increasingly concentrated system of command. This monograph examines both developments and the relationship between them.

The technological transformation. Since 1998, Pakistan has moved from a small force of aircraft and early ballistic missiles to a layered arsenal spanning the 70-kilometre Nasr and the 2,750-kilometre Shaheen-III, with the Ababeel multiple-warhead programme under development and a sea-based leg advancing through the Hangor-class submarines and the Babur-3 cruise missile. A separate Army Rocket Force Command, created in August 2025, now holds conventional missiles that reach ranges once occupied only by nuclear-capable systems. Pakistan has secured access to China's BeiDou military navigation service, launched electro-optical and radar imaging satellites in 2025, and in May 2025 fought an air battle in which Chinese-origin aircraft and missiles were linked to airborne and ground sensors through an indigenous data network. SIPRI assessed Pakistan's stockpile at 170 warheads in January 2026, none of them were deployed.

How technology is changing nuclear thinking. These developments are shifting Pakistan's deterrent from a minimum, opaque and largely recessed posture towards an integrated conventional and nuclear system. Entanglement between conventional and nuclear forces, compressed decision times, the vulnerability of command systems to cyber and space disruption, and a growing dependence on Chinese technology all raise the premium on clear, collegial and accountable decision-making. Technology is making the question of who decides more important, not less.

Custody and safety. Across twenty-eight years Pakistan has recorded no documented nuclear weapons accident, confirmed security breach or verified diversion of fissile material. The IAEA designated its National Institute of Safety and Security a Collaborating Centre in 2022, and the Nuclear Threat Initiative recorded successive improvements in its security rankings in 2016, 2020 and 2023. Physical custody is not the weak point of Pakistan's programme.

The governance of command. The weak point is political control. After Bhutto, General Zia-ul-Haq took personal charge of the programme, and elected leaders were kept at its

margins after 1988. The National Command Authority of 2000 institutionalised formal civilian chairmanship over substantive military control. The 26th Amendment of October 2024 weakened judicial independence; legislation in November 2024 extended service chiefs' tenure to five years; and the 27th Amendment of November 2025 abolished the post of Chairman Joint Chiefs of Staff Committee, made the army chief 'Chief of Defence Forces', created a National Strategic Command whose commander is drawn from the army on the CDF's recommendation, and granted five-star officers rank, uniform and immunity from criminal proceedings for life. The Defence Forces of Pakistan Act and the National Command Authority (Amendment) Act of August 2026 placed the CDF inside the nuclear authority and created a Defence Forces Headquarters to advise the Prime Minister.

Why it matters. One officer now commands the conventional forces, sits in the nuclear authority, shapes the appointment of the strategic-forces commander, controls the main channel of military advice and is constitutionally protected from prosecution. This is a single point of failure in a system that other nuclear-armed states have designed to avoid one. Arrangements enacted by a government of contested mandate, without opposition participation and with retrospective effect, are also vulnerable to reversal, which makes them harder for adversaries to read. In deterrence, predictability is a form of security.

Recommendations. The monograph proposes separating conventional command from membership of the nuclear authority; legislating collegial requirements for nuclear release; establishing parliamentary oversight of nuclear governance; giving the Prime Minister an independent civilian strategic staff; requiring broad political consensus for future changes to nuclear command; renewing and publishing doctrine for the third nuclear age; extending risk-reduction agreements with India to cruise, hypersonic and space systems; and creating independent institutions for nuclear policy and diplomacy. Pakistan has built the technology and kept the custody. Governing the command under a durable and legitimate constitutional order is the unfinished task.

INTRODUCTION

Pakistan and the Third Nuclear Age

Argument, Framework and Evidence

I. Three Nuclear Ages and Pakistan's Place in Them

Scholars have long divided the nuclear era into ages. The first, from 1945 to the end of the Cold War, was dominated by the bipolar contest between the United States and the Soviet Union, by vertical arms racing, and by the managed stability of mutual vulnerability and arms control. The second nuclear age, described by Colin Gray and later by Paul Bracken, was defined by the spread of nuclear weapons to regional powers, above all in Asia, and by the strategic problems of small arsenals, regional crises and proliferation networks.[1] Pakistan entered this second age at Chagai in May 1998, and for most of the following two decades its nuclear thinking was shaped by second-age concerns: establishing a credible minimum deterrent against India, protecting a small arsenal, and managing crises under the shadow of new and untested capabilities.

A growing body of scholarship now argues that a third nuclear age has begun. Andrew Futter and Benjamin Zala describe it as a period in which strategic non-nuclear weapons, including hypersonic missiles, precision conventional strike, missile defences, counter-space capabilities, cyber operations and artificial intelligence, shape nuclear politics and risk as much as nuclear weapons themselves, characterising it as first-age great-power politics conducted with second-age technology.[2] Rebecca Hersman has shown how such technologies, together with digital disinformation and multipolarity, can pull a crisis from the grey zone to the strategic level without passing through the familiar rungs of the escalation ladder.[3] Others have documented how improvements in sensing and accuracy are reviving counterforce options that earlier generations of strategists regarded as impractical.[4] Pakistani scholars have begun to apply this

[1] Colin S. Gray, *The Second Nuclear Age* (Boulder, CO: Lynne Rienner, 1999); Paul Bracken, *The Second Nuclear Age: Strategy, Danger, and the New Power Politics* (New York: Times Books, 2012).

[2] Andrew Futter and Benjamin Zala, 'Strategic Non-Nuclear Weapons and the Onset of a Third Nuclear Age', *European Journal of International Security* 6, no. 3 (2021): 257-77, https://doi.org/10.1017/eis.2021.2.

[3] Rebecca Hersman, 'Wormhole Escalation in the New Nuclear Age', *Texas National Security Review* 3, no. 3 (2020): 91-109.

[4] Keir A. Lieber and Daryl G. Press, 'The New Era of Counterforce: Technological Change and the Future of Nuclear Deterrence', *International Security* 41, no. 4 (2017): 9-49; Vipin Narang and Scott D. Sagan, eds., *The Fragile Balance of Terror: Deterrence in the New Nuclear Age* (Ithaca, NY: Cornell University Press, 2022).

framework to South Asia, chiefly in relation to India's acquisition of strategic non-nuclear weapons.[5]

This monograph applies the same lens to Pakistan itself. The expiry of New START in February 2026 without a successor, the expansion of nearly every nuclear arsenal recorded by SIPRI, and the entry of hypersonic, space-based and artificial-intelligence-enabled systems into regional military balances mean that Pakistan's deterrent now operates in an environment very different from the one in which it was conceived.[6] The question is whether Pakistan's nuclear thinking and, above all, its nuclear governance have adapted to that environment.

II. The Argument: A Widening Gap Between Capability and Control

The monograph's central argument is that Pakistan has entered the third nuclear age with a widening gap between capability and control. On capability, the record is one of sustained and rapid advance. Since 1998 Pakistan has diversified its missile force across ballistic and cruise systems, begun developing multiple independently targetable re-entry vehicles, moved towards a sea-based deterrent, created a separate conventional rocket force, secured military-grade satellite navigation, placed its own imaging satellites in orbit, and fielded a networked air-combat system that performed effectively in May 2025. Its custodial record over twenty-eight years has been sound.

On control, the record runs the other way. A programme conceived by an elected Prime Minister in 1972 passed after 1977 into the personal control of General Zia-ul-Haq and the military establishment. After Zia, no elected leader regained substantive authority over it. Since Chagai, no elected leader has been the author of a significant nuclear decision other than the formal authorisation of the tests themselves. The constitutional and statutory changes of 2024 to 2026, culminating in the 27th Amendment and the legislation of August 2026, have concentrated what remained of a distributed system in the hands of a single officer, Field Marshal Asim Munir, as Chief of Defence Forces.

The two trends are connected. New technologies compress decision time, blur the line between conventional and nuclear operations, and create pressures for pre-delegation and rapid release. Each of these effects makes the quality of decision-making, and therefore the structure of

[5] A. Anum Khan, Maryyum Masood and Amna Saqib, 'India's Acquisition of Strategic Non-nuclear Weapons in the Third Nuclear Age: Implications and Way Forward for Pakistan', *Margalla Papers* 29, no. 1 (2025), https://doi.org/10.54690/margallapapers.29.1.304.

[6] SIPRI, *SIPRI Yearbook 2026: Armaments, Disarmament and International Security* (Oxford: Oxford University Press for SIPRI, 2026), chapter 8.

authority, more consequential. A nuclear state in the third age needs more deliberation, more institutional friction against haste, and more legitimate civilian authority. Pakistan is moving towards less of each. This monograph argues that this combination of accelerating capability and narrowing control is the most significant strategic risk in Pakistan's nuclear programme, more significant than the risks of theft or terrorism that have dominated international commentary for two decades.

III. Analytical Framework

The analysis draws on three bodies of theory. The first is deterrence theory. Kenneth Waltz's argument that nuclear weapons induce caution between adversaries remains the starting point for understanding why full-scale war between India and Pakistan has not recurred since 1998, while Vipin Narang's typology of nuclear postures explains why Pakistan adopted an asymmetric escalation posture that retains early first-use options to offset India's conventional superiority.[7] Third-age scholarship qualifies both: it suggests that conventional precision, entanglement and information operations can erode the stabilising effects that classical deterrence theory predicts.

The second is the theory of civil-military relations and nuclear command. Samuel Huntington's distinction between objective and subjective civilian control, and Peter Feaver's analysis of the 'always/never' dilemma, in which a command system must guarantee that weapons are always usable when legitimately ordered and never usable otherwise, provide the criteria against which Pakistan's arrangements are assessed.[8] Scott Sagan's organisational approach adds the warning that militaries left to manage nuclear weapons without strong civilian oversight tend to favour doctrines and practices that serve organisational interests, including preventive or early use, rapid alert and resistance to external scrutiny.[9]

The third is constructivist. Nuclear reputations are not given by material facts alone but are produced through communication, institutional practice and shared interpretation.[10] This lens explains why Pakistan's sound custodial record has done so little to change international

[7] Kenneth N. Waltz, *The Spread of Nuclear Weapons: More May Be Better*, Adelphi Paper 171 (London: IISS, 1981); Vipin Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict* (Princeton: Princeton University Press, 2014).

[8] Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations* (Cambridge, MA: Belknap Press of Harvard University Press, 1957); Peter D. Feaver, 'Command and Control in Emerging Nuclear Nations', *International Security* 17, no. 3 (1992-93): 160-87.

[9] Scott D. Sagan, 'The Perils of Proliferation: Organization Theory, Deterrence Theory, and the Spread of Nuclear Weapons', *International Security* 18, no. 4 (1994): 66-107.

[10] Alexander Wendt, *Social Theory of International Politics* (Cambridge: Cambridge University Press, 1999).

perceptions of its programme, and why the narrowing of authority over nuclear policy also narrows the range of voices that can explain it.

IV. Evidence and Method

The study relies on primary institutional material, peer-reviewed scholarship and the publications of established research organisations. SIPRI's Yearbook 2026 provides global force data, including Pakistan's estimated stockpile of 170 warheads with none deployed.[11] The Bulletin of the Atomic Scientists' 2025 assessment provides detail on delivery systems, fissile material and infrastructure.[12] IAEA and NTI publications document independent assessments of Pakistan's safety and security record. The texts of the 27th Amendment and the August 2026 statutes, together with contemporaneous Pakistani and international reporting, document the restructuring of command. The historical account draws on the work of Feroz Hassan Khan, Mansoor Ahmed, Aqil Shah, Shuja Nawaz and Christopher Clary, among others.[13] Where an assessment is contested, the monograph attributes it to those who have made it, and where figures rest on open-source estimates rather than official data, it says so.

V. Structure of the Monograph

Chapter One traces the programme from Multan to Chagai and shows how ownership passed from Bhutto's civilian government to General Zia and the military establishment. Chapter Two examines Pakistan's technological modernisation through the lens of the third nuclear age and asks how it is changing Pakistan's nuclear thinking. Chapter Three analyses the governance of command, from the National Command Authority of 2000 to the 26th and 27th Amendments and the legislation of August 2026, and explains why the resulting concentration of authority is dangerous for a nuclear-armed state. Chapter Four assesses Pakistan's safety and security record and the threat narratives that surround it. Chapter Five evaluates deterrence across five crises, treating May 2025 as the first crisis of the third nuclear age in South Asia. Chapter Six sets out the strategic context of Pakistan's nuclear discourse and diplomacy, and Chapter Seven presents policy options for restoring civilian authority and renewing nuclear thinking.

[11] SIPRI Yearbook 2026, chapter 8. SIPRI also records the first assessed at-sea deployment of a small number of Indian warheads.

[12] Hans M. Kristensen, Matt Korda, Eliana Johns and Mackenzie Knight-Boyle, 'Pakistan Nuclear Weapons, 2025', *Bulletin of the Atomic Scientists* 81, no. 5 (2025).

[13] Feroz Hassan Khan, *Eating Grass: The Making of the Pakistani Bomb* (Stanford: Stanford University Press, 2012); Mansoor Ahmed, *Pakistan's Pathway to the Bomb: Ambitions, Politics, and Rivalries* (Washington, DC: Georgetown University Press, 2022).

CHAPTER ONE

From Multan to Chagai

Political Ownership and Military Capture, 1972-1998

Pakistan's nuclear programme is usually told as a technical story of scientists, centrifuges and sanctions. It is also a political story about who owned the programme and how that ownership changed. This chapter tells both, briefly for the first and in more detail for the second, because the command arrangements of 2026 cannot be understood without the transfer of control that took place between 1977 and 2000.

1.1 Strategic Origins: 1971 and the Multan Decision

The loss of East Pakistan in December 1971, in which Indian military intervention produced the secession of half the country and the largest surrender of Pakistani forces in its history, transformed Pakistan's strategic calculus.[14] The lesson drawn by Zulfikar Ali Bhutto and his circle was that conventional asymmetry on the scale that existed between India and Pakistan could produce existential defeat regardless of tactical performance, and that only a nuclear capability could make large-scale conventional aggression unacceptably costly. On 20 January 1972, at Multan, Bhutto convened Pakistan's senior scientists and charged them with building a nuclear weapon.[15] India's test of May 1974 gave the effort urgency and a public rationale.[16]

> *We will eat grass, even go hungry, but we will get one of our own. We have no other choice.*
>
> *Zulfikar Ali Bhutto, 1965*

1.2 Two Pathways to the Bomb: PAEC and KRL

The programme was built on the civilian foundation laid by the Pakistan Atomic Energy Commission since 1956. After Multan, PAEC Chairman Munir Ahmad Khan pursued a plutonium route, but a 1973 agreement with the French firm Saint-Gobain Techniques

[14] Khan, *Eating Grass*.
[15] Naeem Salik, *The Genesis of South Asian Nuclear Deterrence: Pakistan's Perspective* (Karachi: Oxford University Press, 2009).
[16] George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley: University of California Press, 1999); Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: An Enduring Debate*, 3rd ed. (New York: W.W. Norton, 2013).

Nouvelles for a reprocessing plant was cancelled under American pressure after India's test.[17] A parallel uranium route opened in September 1974, when Abdul Qadeer Khan, a metallurgist working under a URENCO subcontract in the Netherlands, wrote to Bhutto offering his knowledge of centrifuge technology.[18] By 1976 he had established the Engineering Research Laboratories at Kahuta, renamed Khan Research Laboratories in 1981.[19] Enrichment was more concealable than reprocessing and produced weapons-usable material directly. By the mid-1980s KRL had produced weapons-grade uranium, while PAEC worked on weapon design, cold tests and plutonium production, and by the late 1980s US intelligence assessed that Pakistan had crossed the weapons threshold.[20]

1.3 Strategic Tolerance, Sanctions and the China Partnership

The Soviet invasion of Afghanistan in December 1979 made Pakistan indispensable to the United States, and the certification requirement of the Pressler Amendment of 1985 was managed through the 1980s so as to preserve the anti-Soviet partnership.[21] When the Soviet withdrawal removed that incentive, sanctions were imposed in October 1990, cutting off military sales and economic assistance.[22] Sanctions deepened Pakistan's conviction that self-reliant deterrence was the only bankable form of security, accelerated its partnership with China, which supplied missile technology and, by most credible accounts, design assistance, and drove the development of an indigenous defence-industrial base.[23] The Khushab plutonium production reactor came on line in 1998, adding a second stream of fissile material.

1.4 Chagai, 1998

India's tests of 11 and 13 May 1998 brought Pakistan to the point of public decision. Prime Minister Nawaz Sharif faced intense American pressure not to respond, accompanied by offers of economic and security inducements.[24] The judgement reached in Islamabad was that no external guarantee could substitute for a demonstrated capability. On 28 May 1998 five devices

[17] Christopher Clary, 'The Safety and Security of the Pakistani Nuclear Arsenal', in *Pakistan's Enduring Challenges*, ed. C. Christine Fair and Sarah J. Watson (Philadelphia: University of Pennsylvania Press, 2015).
[18] Gordon Corera, *Shopping for Bombs: Nuclear Proliferation, Global Insecurity, and the Rise and Fall of the A.Q. Khan Network* (London: Hurst, 2006).
[19] Khan, *Eating Grass*. The laboratories at Kahuta (KRL) became the centre of uranium enrichment.
[20] Ahmed, *Pakistan's Pathway to the Bomb*.
[21] Strobe Talbott, *Engaging India: Diplomacy, Democracy, and the Bomb* (Washington, DC: Brookings Institution Press, 2004); Rabia Akhtar, *The Blind Eye: U.S. Non-Proliferation Policy towards Pakistan from Ford to Clinton* (Lahore: University of Lahore Press, 2018).
[22] Paul K. Kerr and Mary Beth Nikitin, *Pakistan's Nuclear Weapons*, CRS Report RL34248 (Washington, DC: Congressional Research Service, 2016).
[23] Khan, *Eating Grass*.
[24] Talbott, *Engaging India*.

were detonated at Ras Koh in the Chagai district, and a sixth followed at Kharan on 30 May. The tests fulfilled the charge given at Multan twenty-six years earlier and completed Pakistan's entry into the second nuclear age.[25]

1.5 Who Owns the Bomb? From Zia to the National Command Authority

Bhutto ran the programme from the Prime Minister's office. He took the decision at Multan, chose its scientific leaders, and in 1976 placed the Kahuta project under a small coordinating committee of senior civil servants led by Ghulam Ishaq Khan, with A.G.N. Kazi and Agha Shahi.[26] The army entered the programme in this period as a builder rather than an owner, through the Special Works Organisation of the Corps of Engineers, which constructed the Kahuta facilities. Political ownership and military participation were distinct, and the first was clearly superior to the second.

The coup of 5 July 1977 changed that relationship. General Zia-ul-Haq took personal charge of the programme, received briefings directly from Munir Ahmad Khan and A.Q. Khan, and took its decisions in consultation with a small circle that included Ghulam Ishaq Khan, Agha Shahi and General K.M. Arif.[27] Zia did not seize the programme in a single act. He absorbed it gradually, so that by the mid-1980s its construction, management and security were embedded in military structures and the programme operated as an autonomous entity outside the ordinary machinery of government. Bhutto's execution in April 1979 removed the one political figure with a claim to authorship.[28]

Zia's death in August 1988 revealed the logic of the arrangement. Custody passed not to the elected government that followed but to President Ghulam Ishaq Khan, acting in concert with the army chief, General Mirza Aslam Beg.[29] Benazir Bhutto, elected Prime Minister in 1988, was kept at the margins of nuclear decisions, and the military's distrust of elected leaders on nuclear matters became a settled feature of the political system. Scholars of civil-military relations have documented how the army treated nuclear policy, alongside policy towards India and Afghanistan, as a reserved domain beyond the reach of elected governments.[30]

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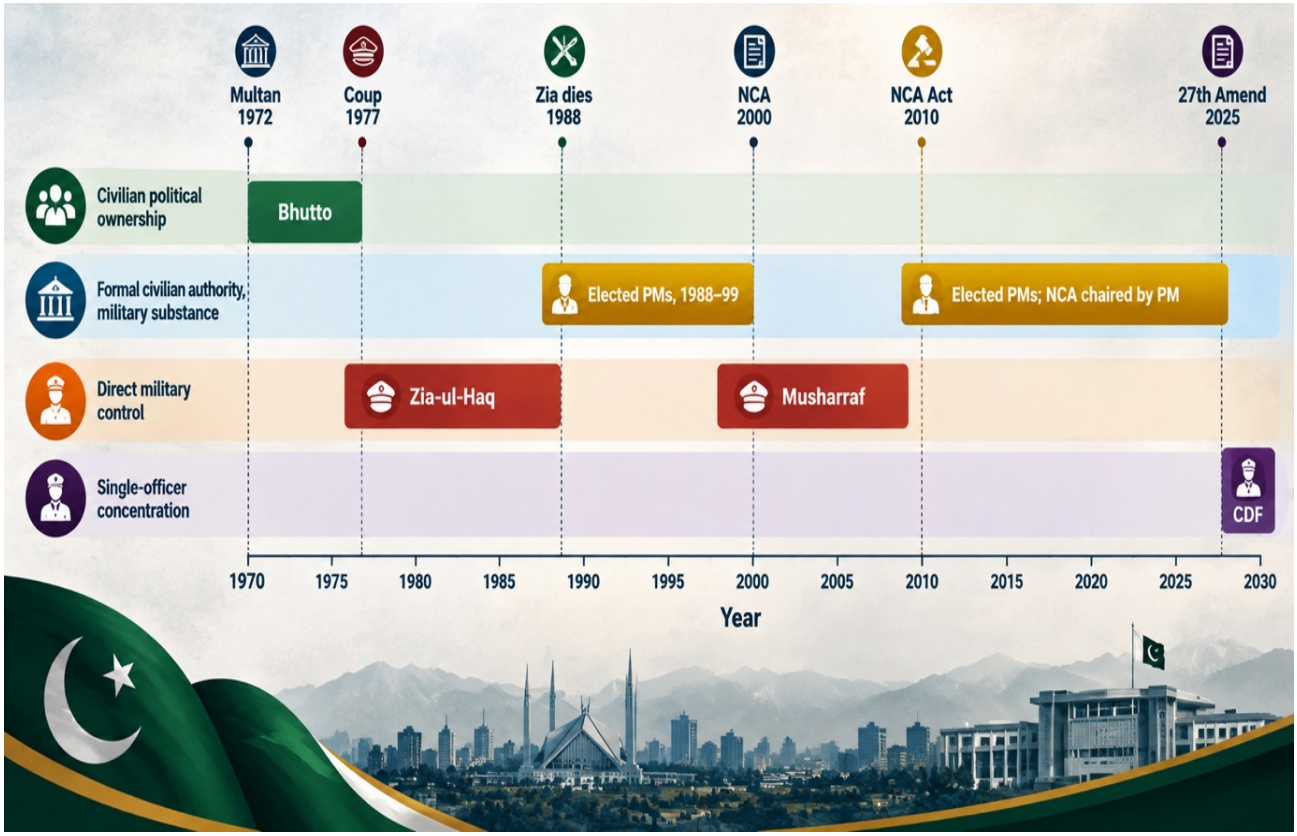
[25] Khan, *Eating Grass*.
[26] 'Stealth, Conviction and the Bomb', Dawn, May 2023, https://www.dawn.com/news/1704820.
[27] Feroz Hassan Khan, 'Pakistan: Political Transitions and Nuclear Management' (Washington, DC: Nonproliferation Policy Education Center, 2012), https://npolicy.org/feroz-khan-pakistan-political-transitions-and-nuclear-management/.
[28] Khan, *Eating Grass*; Ahmed, *Pakistan's Pathway to the Bomb*.
[29] Khan, 'Political Transitions and Nuclear Management'.
[30] Aqil Shah, *The Army and Democracy: Military Politics in Pakistan* (Cambridge, MA: Harvard University Press, 2014); Shuja Nawaz, *Crossed Swords: Pakistan, Its Army, and the Wars Within* (Karachi: Oxford University Press,

The decision to test in 1998 is the partial exception. Nawaz Sharif formally authorised the tests and bore the political responsibility for them, but the decision was taken under heavy pressure from the military and public opinion, and within eighteen months Sharif was removed in the coup of October 1999. The National Command Authority that followed in February 2000 was created by a military ruler and placed under his chairmanship. When the chair passed to the Prime Minister in 2009, and the arrangement was codified in the National Command Authority Act 2010, the change was real in law but limited in practice.[31] Figure 1 traces where effective authority has resided across the programme's history, and Table 1 summarises the evidence for each period.

Figure 1: The Locus of Nuclear Decision Authority in Pakistan, 1972-2026



The figure distinguishes effective authority from formal title. Only in Bhutto's period did elect civilian leadership hold the programme in substance. For the rest of its history, authority has been either directly military or nominally shared in a form that left the substance with the army.

2008); Hasan-Askari Rizvi, *Military, State and Society in Pakistan* (London: Macmillan, 2000); 'Khan, the Bomb, and the Struggle for Democracy in Pakistan', South Asian Voices, Stimson Center, 2022, republished by the Asia-Pacific Leadership Network, https://www.apln.network/news/member_activities/khan-the-bomb-and-the-struggle-for-democracy-in-pakistan.

[31] Kerr and Nikitin, *Pakistan's Nuclear Weapons*; National Command Authority Act, 2010.

The restructuring of 2025 and 2026, examined in Chapter Three, adds a new category: concentration in a single officer under a civilian government that nominally presides.

Table 1: Civil-Military Authority over Pakistan's Nuclear Programme by Period, 1972-2026

Period	Head of government	Effective locus of nuclear authority	Civilian role and key evidence
1972-1977	Z.A. Bhutto (PM)	Prime Minister's office	Bhutto takes the Multan decision; the civil-service committee under Ghulam Ishaq Khan supervises Kahuta; army builds facilities.
1977-1988	Gen. Zia-ul-Haq	Military ruler and a small circle	Zia takes personal charge; the programme runs outside normal government; Bhutto executed 1979.
1988-1999	Benazir Bhutto; Nawaz Sharif	President and COAS to 1993, then the army	Elected PMs kept at the margins; Sharif formally authorises the 1998 tests under pressure
1999-2008	Gen. Pervez Musharraf	Military ruler; NCA under his chair	NCA created February 2000; SPD established as military secretariat
2008-2025	Elected PMs	Formally the PM-chaired NCA; substantively SPD and army	Chairmanship to PM 2009, NCA Act 2010; doctrine announced by the military; no parliamentary oversight
2025 onwards	Elected PM (hybrid government)	Chief of Defence Forces	CJCSC abolished; CDF enters NCA; CNSC appointed on CDF recommendation; DFHQ advises PM; lifetime rank and immunity for five-star officers

Sources: Khan, Eating Grass (2012) and 'Pakistan: Political Transitions and Nuclear Management' (NPEC, 2012); Shah, The Army and Democracy (2014); NCA Act 2010; Constitution (Twenty-seventh Amendment) Act 2025; Defence Forces of Pakistan Act 2026; NCA (Amendment) Act 2026. Effective locus is an analytical judgement, not a formal designation.

This history explains why the events of 2025 and 2026 matter. They did not create military custody of the bomb; they inherited it. What they removed was the last structural separation inside the military itself, between the officer who represented the armed forces in the nuclear authority and the officer who commanded the forces. Before turning to that change, the next chapter examines the technological transformation that makes it so consequential.

CHAPTER TWO

MODERNISATION IN THE THIRD NUCLEAR AGE

Technology, Transformation and the Changing Logic of Pakistan's Deterrent

Pakistan's deterrent in 1998 was small, opaque and largely recessed: a handful of devices, a few aircraft, and early ballistic missiles of limited range and accuracy. By 2026 it had become one of the most diverse arsenals among the newer nuclear states. This chapter examines that transformation across five domains, delivery systems, the sea-based leg, conventional long-range strike, space and networked warfare, and the fissile material base, and then asks how these changes are reshaping Pakistan's nuclear thinking.

2.1 From Minimum Deterrence to Full-Spectrum Deterrence

Pakistan's early doctrine was one of credible minimum deterrence, intended to deter large-scale Indian aggression with a modest, survivable force.[32] Two developments pushed it towards something more ambitious. The first was India's Cold Start doctrine, which sought options for rapid, limited conventional offensives below Pakistan's nuclear threshold.[33] The second was the experience of crises in which nuclear weapons deterred full-scale war but not limited military action. Pakistan's answer was full-spectrum deterrence, which extends nuclear options to the tactical level. The Nasr short-range system, tested in April 2011, was its operational expression, and Lieutenant General Khalid Kidwai, the long-serving Director General of the Strategic Plans Division, articulated the doctrine most fully at the Carnegie International Nuclear Policy Conference in March 2015.[34]

> *I strongly believe that by introducing the variety of tactical nuclear weapons in Pakistan's inventory and in the strategic context of deterrence, these weapons perform a very important function.*
>
> *Lieutenant General (Retired) Khalid Kidwai, Carnegie International Nuclear Policy Conference, March 2015*

[32] Zafar Khan, *Pakistan's Nuclear Policy: A Minimum Credible Deterrence* (London: Routledge, 2015).
[33] Walter C. Ladwig III, 'A Cold Start for Hot Wars? The Indian Army's New Limited War Doctrine', *International Security* 32, no. 3 (2007/08): 158-90.
[34] Mansoor Ahmed, 'Pakistan's Tactical Nuclear Weapons and Their Impact on Stability' (Washington, DC: Carnegie Endowment for International Peace, June 2016); Khalid Kidwai, keynote address, Carnegie International Nuclear Policy Conference, Washington, DC, 23 March 2015.

Full-spectrum deterrence has a coherent strategic logic: if an adversary believes it can conduct limited operations below the nuclear threshold, lowering the threshold removes that belief.[35] It also carries costs that third-age conditions magnify, including the delegation and dispersal problems of battlefield weapons and the difficulty of distinguishing nuclear-capable from conventional systems in a crisis. It is important for the argument of this monograph that the doctrine was developed and announced by the military rather than emerging from civilian deliberation or parliamentary debate.

2.2 Range, Diversity and Penetration: The Missile Force

The missile force is the most visible product of modernisation. Its systems now span battlefield, theatre and intermediate ranges, ballistic and cruise trajectories, and land, air and sea launch. Shaheen-III, with a range of 2,750 kilometres, is Pakistan's longest-range tested system; the Ababeel is being developed to carry multiple independently targetable re-entry vehicles; and the Babur and Ra'ad cruise missiles provide terrain-hugging and air-launched options designed to penetrate missile defences.[36] Table 2 sets out the inventory.

Table 2: Pakistan's Nuclear-Capable Delivery Systems, 2025-2026

System	Hatf Code	Type	Range (km)	Warhead / Yield	Status	Year IOC	Notes
Nasr	IX	SRBM	60-70	1 x ~12 kt	Operational	2013	Tactical battlefield; quad-tube TEL; plutonium warhead; dual-capable
Abdali	II	SRBM	200	1 x low yield	Operational	2002	Short-range tactical; solid fuel
Ghaznavi	III	SRBM	300	1 x 10-15 kt	Operational	2004	Solid fuel; road-mobile TEL
Shaheen-I / IA	IV	MRBM	750	1 x 10-40 kt	Operational	1999/2012	Solid fuel: Shaheen-IA features manoeuvrable reentry vehicle
Ghauri	V	MRBM	1,250	1 x 10-40 kt	Operational	2003	Liquid fuel; road-mobile; Sargodha/Khuzdar-based
Shaheen-II	VI	MRBM	2,000	1 x 10-40 kt	Operational	2009	Solid fuel; covers full Indian territory
Shaheen-III	X	IRBM	2,750	1 x 10-40 kt	User trials	2024*	Longest-range tested system

[35] Narang, *Nuclear Strategy in the Modern Era*.
[36] Kristensen et al., 'Pakistan Nuclear Weapons, 2025'.

System	Hatf Code	Type	Range (km)	Warhead / Yield	Status	Year IOC	Notes
Ababeel	TBD	IRBM	2,200	MIRV / MRV	Development	TBD	MIRV programme; tested January 2017 and October 2023; unconfirmed reports of a failed test in July 2025
Babur-1A GLCM	VII	GLCM	350-700	1 x 5-12 kt	Operational	2014	Terrain-hugging; all-weather; plutonium warhead
Babur-2 GLCM	VII-B	GLCM	700	1 x 5-12 kt	Development	TBD	Enhanced-range variant
Babur-3 SLCM	TBD	SLCM	450	1 x 5-12 kt	In testing	2017*	Submarine-launched; Agosta-90B / Hangor-class integration planned
Ra'ad-I ALCM	VIII	ALCM	350	1 x 5-15 kt	Operational	2010	Air-launched; Mirage III/V delivery platform; plutonium warhead
Ra'ad-II ALCM	VIII-B	ALCM	600	1 x 5-15 kt	Operational	2020	Extended range; JF-17 integration underway
Mirage III/V	N/A	Strike aircraft	N/A	Nuclear gravity bombs	Operational	1990s*	Air-delivered gravity bombs; also Ra'ad platform

*Sources: Kristensen et al., 'Pakistan Nuclear Weapons, 2025'; SIPRI Yearbook 2026, chapter 8; CRS IF13086 (March 2026). All figures are open-source estimates. IOC = initial operational capability; * = estimated; TEL = transporter-erector-launcher.*

The breadth of this inventory is the material expression of full-spectrum deterrence. Its qualitative trend matters as much as its range. Multiple warheads, manoeuvring re-entry vehicles and cruise missiles are responses to Indian investment in ballistic missile defence and surveillance, and they mark a shift from deterrence by assured presence to deterrence by assured penetration. The same trend has drawn new attention in Washington. In December 2024 the US Deputy National Security Adviser described Pakistan's long-range missile development as an emerging threat to the United States, a day after the State Department sanctioned the National Development Complex, which designs and builds Pakistan's ballistic missiles.[37]

[37] Jon Finer, remarks at the Carnegie Endowment for International Peace, Washington, DC, 19 December 2024; US Department of State, sanctions designations of Pakistan's National Development Complex and associated entities, 18 December 2024; Congressional Research Service, *Pakistan's New Long-Range Missile Development*, In Focus IF13086 (Washington, DC: CRS, March 2026).

2.3 The Sea-Based Leg and the Search for Assured Retaliation

The most significant strategic development of the decade is the move to sea. Four Type 039B air-independent propulsion submarines of the Hangor class were launched in China between April 2024 and December 2025, with four more under construction at Karachi Shipyard.[38] Integration of the Babur-3 submarine-launched cruise missile, first tested in 2017, would give Pakistan a sea-based second-strike capability less vulnerable to Indian counterforce strikes. A survivable sea-based force can be stabilising because it reduces pressure to use land-based weapons early. It also raises hard questions of command and control: submarines at sea require reliable communications, pre-planned procedures and, potentially, some delegation of authority, and they bring the navy into a nuclear chain of command that was historically army-dominated.[39]

2.4 The Army Rocket Force Command and the Conventional-Strike Turn

On 13 August 2025, Prime Minister Shehbaz Sharif announced the establishment of the Army Rocket Force Command, a new arm of the army consolidating conventionally armed long-range precision-strike systems under a single operational structure.[40] With the ARFC, Pakistan joined China, Russia and North Korea among the states that maintain a dedicated command for land-based missile forces.[41] The Fatah family has evolved with unusual speed from guided rocket artillery into a layered deep-strike architecture: the Fatah-1 (140 kilometres) and Fatah-2 (400 kilometres) were followed by the Fatah-3 (600 kilometres), the Fatah-4 ground-launched cruise missile (750 kilometres, tested in 2025), and a projected Fatah-5 that open-source reporting suggests could reach about 1,000 kilometres.[42] Table 3 details the inventory, and Figure 2 sets this conventional trajectory against Pakistan's nuclear-capable systems.

[38] Kristensen et al., 'Pakistan Nuclear Weapons, 2025'; International Institute for Strategic Studies, *The Military Balance 2026* (London: IISS, 2026).
[39] Christopher Clary and Ankit Panda, 'Safer at Sea? Pakistan's Sea-Based Deterrent and Nuclear Weapons Security', *The Washington Quarterly* 40, no. 3 (2017): 149-68.
[40] 'New "Rocket Force" to Bolster Strike Capability', Dawn, 15 August 2025.
[41] 'Pakistan's Army Rocket Force: Strategic Leap or Burdened Gamble?', Small Wars Journal, 22 December 2025.
[42] 'Pakistan Test-Fires Fatah-4 Missile, Boosting Conventional Strike Capability', Arab News, 30 September 2025; 'Pakistan Set to Test 1,000km Fatah-5 Rocket in 2026', Defence Security Asia, January 2026.

Table 3: The Army Rocket Force Command: Conventional Precision-Strike Inventory, 2025-2026

System	Type	Range (km)	Status	Notes
Fatah-1	Guided MRL	140	Operational	Battlefield rocket artillery, inducted in 2021
Fatah-2	Guided MRL	400	Operational	Precision-guided; flat trajectory; tested April 2026
Fatah-3	Supersonic	600	Displayed 2026	Supersonic system displayed on the first anniversary of the May 2025 conflict
Fatah-4	GLCM	750	In testing	Terrain-hugging ground-launched cruise missile; 330-400 kg warhead; tested 2025-2026
Fatah-5	Guided rocket	~1,000	Projected 2026	Open-source estimate; characteristics unconfirmed; would enable deep strike from rear areas

Sources: Dawn, 15 August 2025; Arab News, 30 September 2025; Defence Security Asia, January 2026; ISPR statements. All ARFC systems are conventionally armed. The Fatah-5 range is an open-source projection and remains officially unconfirmed. MRL = multiple rocket launcher; GLCM = ground-launched cruise missile.

Figure 2: Pakistan's Expanding Missile Reach:



The figure shows how far the conventional force has grown into ranges once occupied only by nuclear-capable systems. The implications cut both ways. A credible conventional deep-strike capability may raise the nuclear threshold by giving Pakistan non-nuclear options for punishment and denial. But the proliferation of similar-looking missiles under two separate commands creates a discrimination problem: an adversary detecting a launch may be unable to tell, within the compressed timelines of a crisis, whether the incoming weapon is conventional or nuclear. Contemporary scholarship identifies this entanglement as a principal driver of inadvertent escalation.[43]

2.5 Space, Navigation and the Networked Battlefield

The least visible but perhaps most transformative changes concern the systems that locate, guide and connect weapons. Pakistan was reportedly the first state granted access to the military-grade service of China's BeiDou navigation constellation in 2018, reducing its dependence on the American-controlled GPS, whose signals could be degraded or denied over the subcontinent in a conflict.[44] BeiDou guidance was reported to have been integrated into the Ra'ad-II air-launched cruise missile in 2020, and wider integration is widely assessed, though not officially confirmed.[45]

Pakistan has also begun to build its own presence in space. In January 2025 it launched PRSC-EO1, its first indigenously built electro-optical observation satellite, from China's Jiuquan launch centre, and in July 2025 it launched PRSC-S1, a synthetic aperture radar satellite developed with Chinese partners that can image through cloud and at night.[46] SUPARCO describes these satellites in civilian terms, but imaging, mapping and all-weather surveillance are also the foundations of military targeting and damage assessment.

[43] James M. Acton, 'Escalation through Entanglement: How the Vulnerability of Command-and-Control Systems Raises the Risks of an Inadvertent Nuclear War', *International Security* 43, no. 1 (2018): 56-99; Caitlin Talmadge, 'Would China Go Nuclear? Assessing the Risk of Chinese Nuclear Escalation in a Conventional War with the United States', *International Security* 41, no. 4 (2017): 50-92.

[44] Sarah Sewall, Tyler Vandenberg and Kaj Malden, *China's BeiDou: New Dimensions of Great Power Competition* (Cambridge, MA: Belfer Center for Science and International Affairs, Harvard Kennedy School, February 2023); 'BeiDou and Strategic Advancements in PRC Space Navigation', *China Brief*, Jamestown Foundation, 2025, https://jamestown.org/beidou-and-strategic-advancements-in-prc-space-navigation/.

[45] 'BeiDou: How a Satellite Launch Has Made China's Military Independent', The Week, 23 June 2020, https://www.theweek.in/news/world/2020/06/23/beidou-how-a-satellite-launch-has-made-chinas-military-independent.html.

[46] 'Pakistan Launches First Home-Made Observation Satellite', Gulf News, citing Reuters, 18 January 2025; Bilal Khan, 'With PRSC-S1 Satellite Launch, Pakistan Quietly Builds Its Presence in Space', Quwa, 5 August 2025, https://quwa.org/pakistan-defence-news/with-prsc-s1-satellite-launch-pakistan-quietly-builds-its-presence-in-space.

The May 2025 conflict showed how these elements combine. According to Pakistani officials cited by Reuters, the air force linked airborne, ground and space-based sensors with Chinese-origin J-10C fighters and PL-15 missiles through an indigenous network known as Data Link 17, allowing fighters to engage Indian aircraft at long range while keeping their own radars silent.[47] India's deputy army chief claimed that about 81 per cent of Pakistan's military hardware was Chinese and that Pakistan had received live inputs from China during the fighting, a claim Pakistan has not accepted.[48] Whatever the exact balance of indigenous and external contributions, the episode demonstrated that Pakistan now fights as a networked force whose effectiveness depends on data, satellites and foreign technology.

The gain in capability is real, and so is the cost. In reducing its dependence on American systems, Pakistan has deepened its dependence on Chinese ones. The precision, and therefore the credibility, of a growing share of its strike inventory rests on a foreign constellation over which Islamabad exercises no sovereign control. Networked forces are also vulnerable to cyber intrusion, jamming and attack on space assets, which in the third nuclear age can threaten the command, control and communications on which nuclear forces depend.[49]

2.6 The Fissile Material and Industrial Base

Behind the delivery systems stands an industrial base that has also expanded. Commercial satellite imagery and open-source assessments document new construction at the Paslian site near Khushab, including four tunnel entrances observed in May 2024 and assessed as consistent with underground storage or a possible fifth reactor; a possible second enrichment facility at Gadwal, north of Islamabad, whose status is unconfirmed; expansion at Kahuta between 2022 and 2024; and construction of a new research reactor at PINSTECH.[50] Figure 3 locates the principal declared and assessed sites, and Tables 4 and 5 summarise the facilities and estimated fissile material stocks.

[47] Reuters, 'How Pakistan Shot Down India's Cutting-Edge Fighter Jets Using Chinese Gear', republished in The News, 3 August 2025, https://www.thenews.pk/print/1367104-how-pakistan-shot-down-india-s-cutting-edge-fighter-jets-using-chinese-gear.

[48] 'China Used Op Sindoor as "Live Lab" to Test Weapons: Army Deputy Chief', The Tribune (Chandigarh), 5 July 2025, https://www.tribuneindia.com/news/india/china-used-op-sindoor-as-live-lab-to-test-weapons-army-deputy-chief.

[49] Acton, 'Escalation through Entanglement'.

[50] Kristensen et al., 'Pakistan Nuclear Weapons, 2025'; Institute for Science and International Security, satellite imagery analyses of Pakistani nuclear facilities, 2018-2024.

Figure 3: Pakistan's Principal Nuclear Facilities and Missile Garrisons (schematic; locations approximate, not to scale).



Table 4: Pakistan's Principal Nuclear Facilities and Infrastructure, 2025-2026

Facility / Site	Location	Primary Function	Operator	Status and Notes
Khan Research Laboratories (KRL)	Kahuta, Punjab	HEU enrichment; warhead component R&D	KRL / SPD	Primary enrichment facility; URENCO-derived centrifuge cascades; not under IAEA safeguards; expansion confirmed by 2022-2024 satellite imagery
Gadwal Enrichment Facility (assessed)	Gadwal, north of Islamabad	Possible second HEU enrichment plant	KRL / SPD	Assessed as the possible second enrichment facility (ISIS, 2018); construction and operational status unconfirmed as of 2025.

Facility / Site	Location	Primary Function	Operator	Status and Notes
PINSTECH / New Labs	Nilore, Islamabad	Plutonium reprocessing; research reactors (PARR-I, PARR-II); PARR-III under construction from 2024	PAEC	New Labs provides weapons-grade Pu separation; PARR-III ongoing; not under safeguards
Khushab Nuclear Complex	Khushab, Punjab	Weapons-grade plutonium production; tritium production	PAEC / SPD	Four heavy-water reactors (Khushab I-IV) assessed operational; not under safeguards
Paslian Underground Complex (assessed)	Paslian forest, near Khushab	Assessed: underground strategic storage or possible fifth reactor site	PAEC / SPD	Four tunnel entrances identified in commercial satellite imagery, May 2024; heightened security perimeter; function unconfirmed
Chashma Reprocessing Facility (possible)	Chashma, Punjab	Possible additional plutonium reprocessing	PAEC	Assessed as possibly completed around 2020; operational status unclear; not under safeguards
Air Weapons Complex (AWC)	Wah Cantonment, Punjab	Nuclear warhead assembly; weapons components	SPD / military	Assessed primary assembly facility; substantially upgraded post-2008
National Development Complex (NDC)	Fateh Jang, Punjab	Ballistic missile R&D and production (Shaheen, Ababeel series)	SPD / military	Sanctioned by the US State Department in December 2024
Sargodha Garrison (PAF Base Mushaf)	Sargodha, Punjab	MRBM garrison; weapons storage (assessed)	Air Force / SPD	Central ammunition depot area; TEL garages confirmed in satellite imagery
Khuzdar Garrison	Khuzdar, Balochistan	MRBM garrison; possible underground storage	Army Strategic Forces Command	Perimeter expanded 2017; six TEL garages assessed in southern section
Chashma Nuclear Power Complex	Chashma, Punjab	Civil nuclear power: CHASNUPP 1-4 (operational); CHASNUPP-5 (under construction)	PAEC	Under IAEA safeguards; C-5 is a Hualong One unit (about 1,200 MWe gross); construction began December 2024.
Karachi Nuclear Power Plants (K-2, K-3)	Karachi, Sindh	Civil nuclear power, 1,100 MWe gross each	PAEC	Hualong One units; K-2 commercial operation May 2021, K-3 April 2022; under IAEA safeguards
Karachi Shipyard	Karachi	Submarine construction (Hangor-class)	Pakistan Navy	Four Type 039B AIP submarines launched in China (Hangor Apr. 2024, Shushuk early 2025, Mangro Aug. 2025, Ghazi Dec. 2025); four more under construction at Karachi; future Babur-3 SLCM platform

Sources: Kristensen et al., 'Pakistan Nuclear Weapons, 2025'; ISIS imagery analyses; PAEC; World Nuclear Association. 'Assessed' and 'possible' indicate open-source analytical judgements, not official confirmation. Warhead storage sites are not publicly identified by any government.

The facilities determine the rate at which fissile material can be produced, and fissile material sets the ceiling on future warhead numbers. Table 5 compares Pakistan's estimated stocks with India's, using the estimates of the International Panel on Fissile Materials.[51]

Table 5: Estimated Fissile Material Stocks and Warheads, Pakistan and India, 2025-2026

Category	Pakistan	India	Notes
Highly enriched uranium	5.5 ± 1.6 tonnes	6.1 ± 2.4 tonnes	IPFM, beginning of 2025; India's HEU is assessed as about 30 per cent enriched, mainly for naval fuel.
Plutonium	0.62 ± 0.21 tonnes	0.73 ± 0.17 tonnes (weapon-grade)	IPFM estimates; Pakistan figure is accumulated stockpile.
Plutonium production reactors	Four at Khushab; Paslian possibly a fifth site	Dhruva (Trombay)	Paslian function unconfirmed
Enrichment facilities	KRL Kahuta; Gadwal possible	Rare Materials Plant, Rattehalli	KRL expansion visible in imagery, 2022-2024
Warheads, January 2026	170, none deployed	190, of which about 12 deployed at sea	SIPRI Yearbook 2026; world total 12,187

Sources: International Panel on Fissile Materials, country assessments for Pakistan and India (2025); SIPRI Yearbook 2026, chapter 8. All figures are open-source estimates with significant uncertainty.

2.7 How Technology Is Changing Pakistan's Nuclear Thinking

The developments described in this chapter are not simply additions to an inventory. Together they are changing the character of Pakistan's deterrent and the assumptions on which its nuclear thinking rests. Five shifts stand out.

The first is a shift from a recessed to a ready deterrent. A small, opaque force kept in separated components could rely on time for a decision. Multiple warheads, canisterised missiles, cruise missiles and a sea-based leg move Pakistan towards forces that are faster to employ and harder to hold in a fully de-mated state, which compresses the time available for political judgement. The second is a shift from separation to integration. Pakistan's conventional rockets, cruise missiles and nuclear-capable systems now overlap in range and appearance, and May 2025 showed that its leaders think of conventional and nuclear instruments as parts of a single escalation ladder. Integration may strengthen deterrence, but it also means that conventional decisions carry nuclear consequences.

[51] International Panel on Fissile Materials, country assessments for Pakistan and India, 2025, https://fissilematerials.org/countries/pakistan.html.

The third is a shift from presence to penetration and counter-targeting. As India invests in missile defence, surveillance and precision strike, Pakistan's thinking is moving from the question of whether its weapons exist to whether they can survive and penetrate, and from there towards the targeting of Indian command nodes and infrastructure, which is the logic of the Fatah series. The fourth is a shift from autonomy to managed dependence. The BeiDou transition, Chinese-launched satellites and Chinese combat systems have made Pakistan's precision, surveillance and air combat effectiveness dependent on a single strategic partner. The fifth is a shift in the domain of risk. In the second nuclear age the dominant concern about Pakistan was theft and terrorism; in the third, the more serious risks are misperception, entanglement, cyber and space disruption of command systems, and disinformation in crises.[52] Table 6 summarises these shifts and their implications for command and control.

Table 6: Technology and the Transformation of Pakistan's Deterrent in the Third Nuclear Age

Domain	Development since 1998	Effect on nuclear thinking	Implication for command and control
Ballistic missiles	From Ghauri and Shaheen-I to Shaheen-III (2,750 km); Ababeel MIRV in development	From assured presence to assured penetration of missile defences	Faster, more ready forces compress decision time
Cruise missiles	Babur and Ra'ad families; Babur-3 SLCM	Low-altitude, defence-evading options; dual-capable ambiguity	Harder for adversaries to read launches; signalling must be explicit
Sea-based leg	Hangor-class AIP submarines from 2024	Search for survivable second strike	Communications at sea and possible delegation; navy enters nuclear chain
Conventional deep strike	ARFC (2025); Fatah-1 to Fatah-5	Integrated conventional-nuclear escalation ladder	Entanglement; conventional decisions carry nuclear risk
Space and navigation	BeiDou military service (2018); PRSC-EO1 and PRSC-S1 satellites (2025)	Precision and surveillance as pillars of deterrence	Dependence on China; vulnerability to counter-space action
Networked warfare	Data Link 17 kill chain; J-10C and PL-15 (May 2025)	Deterrence through demonstrated conventional effectiveness	Cyber and electronic attack can reach command systems
Information environment	Real-time crisis disinformation (May 2025)	Narrative as part of deterrence	Need for authoritative, accountable crisis communication

Source: author's analysis drawing on Chapters Two and Five, Futter and Zala (2021) and Hersman (2020). SLCM = submarine-launched cruise missile; AIP = air-independent propulsion.

[52] Hersman, 'Wormhole Escalation'; Vincent Boulanin, ed., *The Impact of Artificial Intelligence on Strategic Stability and Nuclear Risk*, vol. 1 (Stockholm: SIPRI, 2019).

Every row of Table 6 points in the same direction. The technologies Pakistan has acquired increase the speed, reach and ambiguity of its forces, and each of them raises the premium on clear, collegial, legitimate and well-informed decision-making at the top of the system. The third nuclear age does not make civilian control a luxury that a technologically advanced military can do without; it makes it more necessary. The next chapter shows that Pakistan's command arrangements have moved in the opposite direction.

CHAPTER THREE

FROM COLLECTIVE AUTHORITY TO ONE-MAN CONTROL

The 26th and 27th Amendments and the Governance of Nuclear Command

The previous chapter showed that Pakistan's nuclear forces have become faster, more diverse and more entangled with conventional forces. This chapter examines who now controls them. It traces the National Command Authority from its creation to 2025, sets out the political conditions in which the restructuring of 2024 to 2026 took place, analyses the 27th Amendment and the legislation of August 2026, and explains why the resulting concentration of authority in a single officer is a dangerous trend for a nuclear-armed state.

3.1 The National Command Authority, 2000-2025: Formal Civilian Authority, Military Substance

The National Command Authority was established in February 2000 by the military government of General Pervez Musharraf as the apex body for the development, deployment and employment of nuclear forces. It comprised an Employment Control Committee and a Development Control Committee and brought together the head of government, the Chairman of the Joint Chiefs of Staff Committee, the three service chiefs and senior ministers. The Strategic Plans Division, headed by a serving lieutenant general, became its secretariat and the manager of the nuclear complex.[53]

On paper the design was balanced: political authority over employment, military responsibility for operations, and a professional secretariat providing continuity. In practice it was weighted heavily towards the military. The SPD remained a military organisation answerable through military channels. Doctrinal innovations of the first importance, including full-spectrum deterrence and the induction of the Nasr, were developed and announced by the military. Parliament acquired no committee with oversight of nuclear policy, and no defence white paper or published doctrine was laid before it.[54] The NCA's meetings were infrequent, convened largely in response to external events, and reported through brief statements that announced conclusions rather than reasoning. The Prime Minister's chairmanship gave civilian leaders a

[53] Kerr and Nikitin, *Pakistan's Nuclear Weapons*.
[54] Clary, 'Safety and Security of the Pakistani Nuclear Arsenal'; Shah, *The Army and Democracy*.

formal role without the staff, independent expertise or institutional knowledge needed to exercise it.[55]

One structural feature nonetheless limited military dominance inside the NCA. The officer who represented the armed forces as a whole, the Chairman Joint Chiefs of Staff Committee, commanded none of the three services, and the army chief sat in the NCA as one service chief among three. The senior military voice in the nuclear authority and operational command of the conventional forces were held by different people. The separation was modest, but it was real, and it is what the restructuring removed.

3.2 The Political Setting: Hybrid Rule and the Erosion of Checks

The restructuring took place in a period of sustained political crisis. Imran Khan was removed as Prime Minister in April 2022 through a no-confidence motion widely understood to have had the support of the military establishment.[56] The years that followed brought mass protests and their suppression, the imprisonment of the country's most popular political leader, a general election in February 2024 held after a year's delay amid a crackdown on the largest opposition party and followed by sustained allegations of manipulation, and the prosecution of political workers under military and official-secrets legislation.[57] Independent analysts described the resulting settlement as a weak civilian government operating in close cooperation with, and in practical subordination to, the military, a form of rule commonly called hybrid.[58]

Two measures enacted in late 2024 prepared the ground for what followed. The 26th Constitutional Amendment, passed on 21 October 2024, created constitutional benches to hear constitutional cases and transferred the choice of Chief Justice from seniority to a special parliamentary committee, which selects from among the three most senior judges.[59] Its immediate subject was the judiciary rather than the military, but its effect was to weaken the institution most able to check executive and military power. Two weeks later, on 4 November

[55] Toby Dalton and Michael Krepon, *A Normal Nuclear Pakistan* (Washington, DC: Stimson Center and Carnegie Endowment for International Peace, 2015).
[56] 'No End in Sight to Political Turmoil in Pakistan', GIS Reports Online, 2025; Imran Ahmed, 'Political Turmoil and Protracted Crisis: Pakistan's Battle for Stability and Democratic Processes', ISAS Briefs, Institute of South Asian Studies, National University of Singapore, 29 May 2023.
[57] 'Pakistan's Political Meltdown', East Asia Forum, 30 January 2024; Bertelsmann Stiftung, *BTI 2026 Country Report: Pakistan* (Gütersloh: Bertelsmann Stiftung, 2026).
[58] 'No End in Sight', GIS Reports.
[59] Abdul Hadi Mayar, 'Pakistan Passes Constitutional Amendments Aimed at Judiciary', ConstitutionNet, International IDEA, 21 October 2024.

2024, Parliament amended the army, navy and air force laws to extend the maximum tenure of service chiefs from three to five years, passing the bills in both houses on the same day.[60]

The May 2025 conflict with India then transformed the military's domestic standing. On 20 May 2025, less than two weeks after the ceasefire, General Asim Munir was promoted to Field Marshal, only the second officer in Pakistan's history to hold the rank.[61] The victory narrative of May 2025 supplied the political capital for the constitutional changes of November.

The economic context reinforced the military's leverage. Pakistan's programme with the International Monetary Fund delivered genuine stabilisation, with gross reserves rising to sixteen billion dollars at the end of December 2025 and the IMF Executive Board completing its third review in May 2026.[62] Yet the IMF itself recorded that reserve cover remained inadequate by standard metrics and that the war in the Middle East clouded the near-term outlook.[63] Militant violence in Khyber Pakhtunkhwa and Baluchistan persisted.[64] A civilian government dependent on an international lender, facing insurgency and lacking a secure electoral mandate, had little capacity to resist an institution whose prestige had just been enhanced by war.

3.3 The 27th Amendment and the August 2026 Legislation

The 27th Constitutional Amendment, passed by a two-thirds majority on 13 November 2025, restructured Pakistan's higher defence organisation more profoundly than any measure since 2000.[65] It abolished the post of Chairman Joint Chiefs of Staff Committee, created the post of Chief of Defence Forces, held concurrently by the Chief of Army Staff and extending his authority over the navy and air force, and created a Commander of a new National Strategic Command to be drawn from the army. It gave constitutional standing to five-star rank and provided that officers holding it retain their rank, privileges and uniform for life and enjoy

[60] 'Parliament Approves Bill Extending Tenure of Services Chiefs up to 5 Years', Geo News, 4 November 2024, https://www.geo.tv/latest/572687-bill-extending-tenure-of-services-chiefs-up-to-5-years-adopted-by-na.

[61] Abid Hussain, 'How Would Pakistan's 27th Amendment Reshape Its Military and Courts?', Al Jazeera, 11 November 2025, https://www.aljazeera.com/news/2025/11/11/how-would-pakistans-27th-amendment-reshape-its-military-and-courts.

[62] International Monetary Fund, 'IMF Executive Board Completes Third Review of the Extended Arrangement under the Extended Fund Facility and Second Review of the Arrangement under the Resilience and Sustainability Facility with Pakistan', Press Release No. 26/147, 8 May 2026.

[63] International Monetary Fund, *Pakistan: Third Review Under the Extended Arrangement Under the Extended Fund Facility*, IMF Country Report No. 26/101 (Washington, DC: IMF, May 2026).

[64] Bertelsmann Stiftung, *BTI 2026 Country Report: Pakistan*.

[65] Constitution (Twenty-seventh Amendment) Act, 2025; Agence France-Presse, 'Pakistan Grants Lifetime Immunity to President and Army Chief under Sweeping Constitutional Amendment', Malay Mail, 13 November 2025, https://www.malaymail.com/news/world/2025/11/13/pakistan-grants-lifetime-immunity-to-president-and-army-chief-under-sweeping-constitutional-amendment/198260.

immunity from criminal proceedings, with removal requiring a two-thirds majority in Parliament.[66] It also created a Federal Constitutional Court to which constitutional jurisdiction was transferred from the Supreme Court.

Implementing legislation passed the same day set the terms. Amendments to the army law gave the CDF a five-year term from the date of his notification, which reset Field Marshal Munir's tenure, and provided that the Prime Minister would appoint the Commander of the National Strategic Command on the army chief's recommendation, from among army generals, for a three-year term extendable by a further three years. The Law Minister described the four bills as harmonising measures; they were passed in nine minutes without debate.[67] Munir was notified as the first CDF on 4 December 2025, and General Syed Aamer Raza, previously Chief of General Staff, was appointed as the first Commander of the National Strategic Command in July 2026.[68]

It is important to be precise about what the National Strategic Command is, because it is often misdescribed. It did not replace the National Command Authority, which survives as the apex body, is still chaired by the Prime Minister and is still served by the SPD. The NSC is an operational command that brings the army, navy and air force strategic forces under a single commander.[69] The legislation of August 2026 completed the structure. On 20 August the National Assembly and Senate passed the Defence Forces of Pakistan Act 2026 and the National Command Authority (Amendment) Act 2026, both on the day of cabinet approval and both with retrospective effect, to 13 and 27 November 2025 respectively.[70] The first creates a Defence Forces Headquarters as the central headquarters of the armed forces and the Prime Minister's senior military adviser on national security. The second removes the Chairman Joint Chiefs of Staff Committee from the NCA and inserts the Chief of Defence Forces in his place. The opposition walked out of both chambers, and the Pakistan People's Party, a coalition

[66] Hussain, 'How Would Pakistan's 27th Amendment Reshape Its Military and Courts?'.

[67] 'COAS Munir's Tenure to Reset with CDF Appointment after NA Approves Army Act Changes', Dawn, 13 November 2025, https://www.dawn.com/news/1954870.

[68] 'Pakistan's 27th Amendment Upends Its Nuclear Command', Foreign Policy, 12 December 2025, https://foreignpolicy.com/2025/12/12/pakistan-constitution-amendment-nuclear-weapons-military-policy/; 'New Strategic Command Gets First Chief', Dawn, 25 July 2026, https://www.dawn.com/news/2018205/new-strategic-command-gets-first-chief.

[69] 'New Strategic Command Gets First Chief', Dawn.

[70] 'Pakistan Passes Legislation to Formalize New Military Command Structure', The Diplomat, August 2026, https://thediplomat.com/2026/08/pakistan-passes-legislation-to-formalize-new-military-command-structure/; 'Cabinet Approves Defence Forces Act 2026, Amendments to National Command Authority Act 2010', Express Tribune, 20 August 2026, https://tribune.com.pk/story/2624907/cabinet-approves-defence-forces-act-2026-amendments-to-national-command-authority-act-2010.

partner, objected to the absence of consultation before voting in favour.[71] Table 7 sets out the sequence.

Table 7: The Road to Concentrated Command: Key Steps, 2022-2026

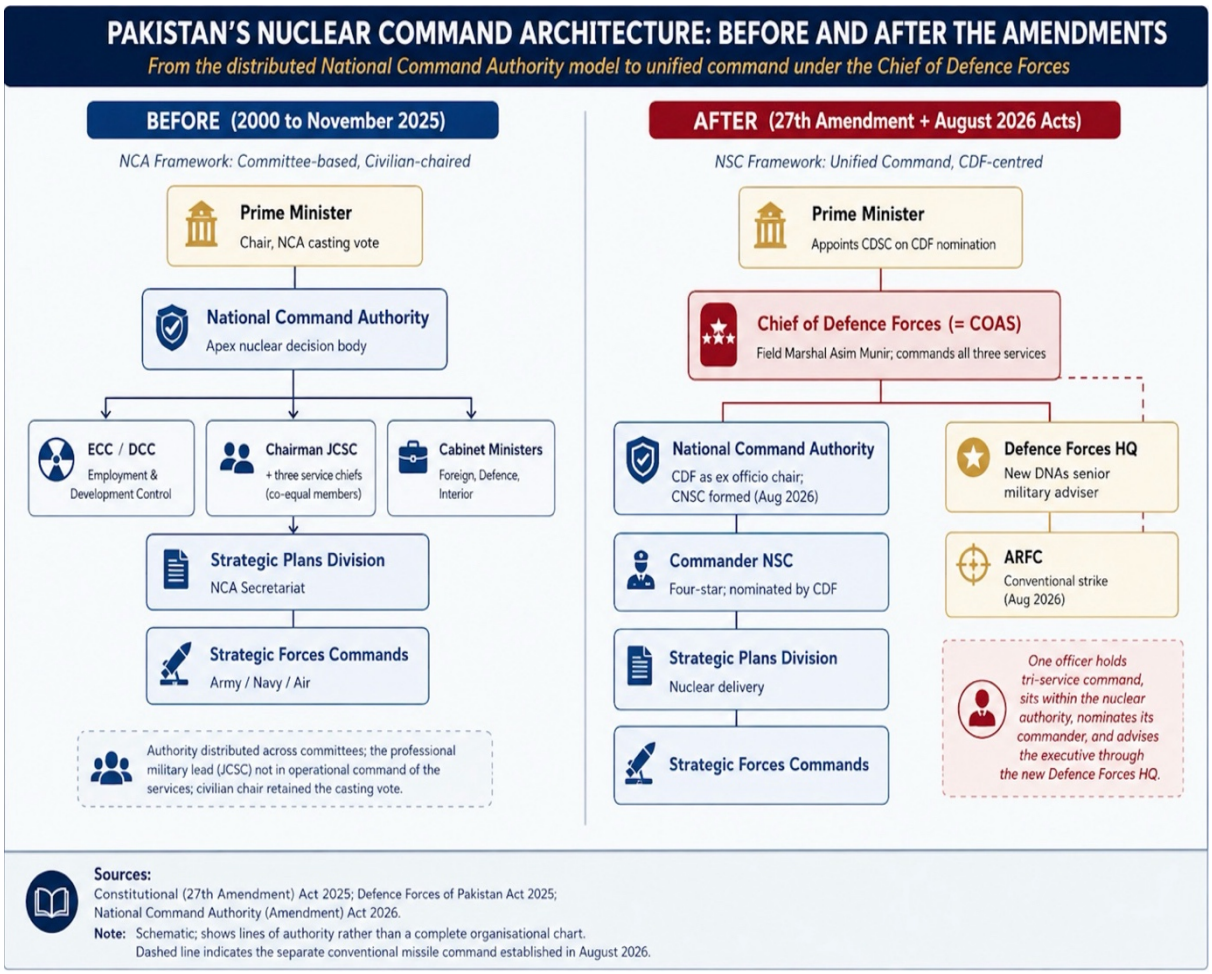
Date	Measure or event	Effect on checks and balances
April 2022	Imran Khan removed by no-confidence motion	Opening of prolonged political crisis; military role widely alleged
February 2024	General election amid crackdown on largest opposition party	Government of contested mandate; legitimacy deficit
21 October 2024	26th Constitutional Amendment	Constitutional benches; the chief justice chosen by a parliamentary committee; judicial independence weakened
4 November 2024	Army, Navy and Air Force laws amended	Service chiefs' maximum tenure extended from three to five years.
7-10 May 2025	Conflict with India	Military prestige enhanced; victory narrative
20 May 2025	General Asim Munir promoted to Field Marshal	Second Field Marshal in Pakistan's history
13 August 2025	Army Rocket Force Command announced	Separate conventional missile command under the army
13 November 2025	27th Constitutional Amendment and Army Act changes	CJCSC abolished; CDF created; NSC and CNSC created; lifetime rank and immunity for five-star officers; CDF five-year term reset
4 December 2025	Field Marshal Munir notified as first CDF	Conventional command unified in one officer
July 2026	First Commander NSC appointed	Strategic forces unified under an army general recommended by the CDF
20 August 2026	Defence Forces Act and NCA (Amendment) Act, both retrospective	CDF enters the NCA; DFHQ becomes PM's senior military adviser; opposition walkout

Sources: ConstitutionNet (21 October 2024); Geo News (4 November 2024); Al Jazeera (11 November 2025); Dawn (13 November 2025 and 25 July 2026); AFP (13 November 2025); Business Recorder (21 August 2026); The Diplomat (August 2026).

The sequence shows a pattern rather than a series of isolated reforms. Each step removed or weakened a potential check, whether judicial independence, fixed tenure, inter-service balance or parliamentary deliberation, and each was enacted quickly, by a government of contested mandate, with minimal debate. Figure 4 and Table 8 show the effect on the architecture of nuclear command.

[71] 'Defence Forces, NCA Amendment Bills Sail thru Parliament', Business Recorder, 21 August 2026, https://www.brecorder.com/news/40435836/defence-forces-nca-amendment-bills-sail-thru-parliament.

Figure 4: Pakistan's Nuclear Command Architecture Before and After the 2025 and 2026 Amendments (schematic)



The formal apex is unchanged in both panels: the National Command Authority, chaired by the Prime Minister, with the SPD as its secretariat. What has changed sits immediately beneath it. Before the restructuring, the officer representing the armed forces in the NCA commanded none of the services. After it, that officer commands all three, recommends the commander of the strategic forces, and advises the executive through a new headquarters. Table 8 sets out the same shift dimension by dimension.

Table 8: Pakistan's Nuclear Command and Control Before and After the 2025 and 2026 Amendments

Dimension	Before (2000 to November 2025)	After the 27th Amendment and August 2026 Acts
Apex nuclear body	National Command Authority, chaired by the Prime Minister	National Command Authority retained, still chaired by the Prime Minister
Senior military member of the NCA	Chairman Joint Chiefs of Staff Committee, who commanded none of the services	Chief of Defence Forces, who is also Chief of Army Staff and commands all three services

Dimension	Before (2000 to November 2025)	After the 27th Amendment and August 2026 Acts
Secretariat	Strategic Plans Division	Strategic Plans Division (unchanged)
Strategic forces	Separate army, navy and air force strategic force commands	Unified under the National Strategic Command and a four-star CNSC
Appointment of strategic-forces commander	Not applicable; service commands under their own chiefs	CNSC appointed by the Prime Minister on the CDF's recommendation, from army generals, for three years extendable by three
Military advice to the executive	CJCSC and service chiefs	Defence Forces Headquarters, created by the Defence Forces Act 2026
Conventional long-range strike	Under army and air force operational command	Army Rocket Force Command, established August 2025
Legal basis	Executive Decision 2000; NCA Act 2010	27th Amendment (Nov 2025); Defence Forces Act and NCA (Amendment) Act (Aug 2026), both retrospective
Tenure and legal protection of senior officer	CJCSC on a fixed three-year term; no special immunity	CDF five-year term from notification; lifetime rank, uniform and immunity from criminal proceedings for five-star officers
Separation of conventional command from nuclear membership	Present: different officers held the two roles	Absent: one officer holds both

Sources: Constitution (Twenty-seventh Amendment) Act 2025; Defence Forces of Pakistan Act 2026; National Command Authority (Amendment) Act 2026; Dawn, 13 November 2025 and 25 July 2026; Al Jazeera, 11 November 2025.

The final rows of the table carry the weight of the argument. Most of the changes can be defended as administrative integration, and the government has presented them in those terms. The loss of separation between conventional command and nuclear membership, combined with lifetime constitutional protection for the officer concerned, cannot be explained as tidying. It is a change in who holds power over the most consequential decisions the state can take.

3.4 Why One-Man Control Is Dangerous for a Nuclear State

The danger is not that Pakistan's weapons have become less physically secure. The SPD, its security forces and its technical safeguards are unchanged, and the custodial record examined in Chapter Four gives no reason to expect a failure of physical control. The danger lies in the quality, legitimacy and durability of decision-making. Five risks follow from the concentration of authority.

The first is the narrowing of the decision circle. The NCA's committee design, whatever its limits, dispersed authority among officeholders whose interests and perspectives differed, including a CJCSC with no service of his own to champion and naval and air chiefs who were his equals. Concentrating the military side of that authority in one officer, to whom the other service chiefs are now institutionally subordinate, reduces the number of independent voices and the internal friction that guards against error, groupthink or haste.[72] In Feaver's terms, it strengthens the 'always' side of the always/never dilemma at the expense of the 'never'.[73]

The second is the loss of independent military advice. Before 2025, a Prime Minister in a crisis could hear from a CJCSC who did not command the army and from service chiefs who did not answer to one another. After 2026, the principal channel of military advice runs through a Defence Forces Headquarters headed by the officer who also commands the forces whose actions the Prime Minister must judge. A civilian chair who receives advice from a single source has little capacity to question it.

The third is the merging of conventional and nuclear judgement. Chapter Two showed that the third nuclear age entangles conventional and nuclear operations. In such conditions, the decision to escalate conventionally may itself carry nuclear risk. When the same officer directs the conventional campaign, sits in the nuclear authority and shapes the leadership of the strategic forces, there is no institutional point at which a separate judgement about nuclear risk is formed and presented.

The fourth is the weakening of accountability. Lifetime rank, uniform and immunity from criminal proceedings, entrenched in the Constitution and removable only by a two-thirds majority, place the holder of five-star rank beyond the ordinary reach of law and politics.[74] Critics have argued that the amendment constitutionally entrenches the army's dominance of strategic affairs and weakens the checks that had kept the deterrent disciplined.[75] A more sanguine view held that once the NCA Act was aligned with the amendment, the Prime Minister-chaired NCA would remain the nuclear sovereign, and nothing of substance would

[72] 'Pakistan's 27th Amendment Upends Its Nuclear Command', Foreign Policy.
[73] Feaver, 'Command and Control in Emerging Nuclear Nations'.
[74] Hussain, 'How Would Pakistan's 27th Amendment Reshape Its Military and Courts?'; AFP, 'Pakistan Grants Lifetime Immunity'.
[75] 'Order Without Accountability: Implications of Pakistan's 27th Amendment for Regional Stability', South Asian Voices, Stimson Center, 28 January 2026.

change.[76] The alignment has now occurred, and its content answers the question: the statutory catch-up did not preserve the previous balance but placed the CDF inside the nuclear authority.

The fifth is fragility. A command system derives its durability from the legitimacy of the political order that constitutes it. Arrangements enacted by one side of a divided Parliament, without opposition participation, with retrospective effect and in a period of contested elections, are vulnerable to reversal or renegotiation by a successor government.[77] They also create a dependence on the judgement and tenure of one individual so that the stability of the command system becomes linked to the fortunes of a single career. Command architectures that change with the political weather are, by definition, less predictable, and predictability is the currency of deterrence.[78]

3.5 Comparative Perspective: Decision, Execution and Civilian Supremacy

Comparison with other nuclear-armed states sharpens these concerns. Several states concentrate release authority in a single political leader, but in each the authority that decides is institutionally distinct from the military authority that executes, and the decision-maker is a civilian or political leader rather than a serving officer. In the United States the President decides, and the Chairman of the Joint Chiefs of Staff advises but stands outside the chain of command. In France the President decides, and the Chief of the Defence Staff is responsible for executing the order. In India a Political Council chaired by the Prime Minister sits above a separate Strategic Forces Command, and the nuclear chain is deliberately insulated from the conventional one.[79] In Russia the Chief of the General Staff has a significant role in the execution chain, but decision authority rests with the President. Even in China, a one-party state, the nuclear forces answer to the Central Military Commission chaired by the Party's General Secretary, a doctrine of party control over the gun that keeps the most senior military officers below the political leadership.[80]

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[76] 'Pakistan's Nuclear Command Change Much Ado About Nothing', Asia Times, January 2026, https://asiatimes.com/2026/01/pakistans-nuclear-command-change-much-ado-about-nothing/.

[77] 'Order Without Accountability', South Asian Voices; Bertelsmann Stiftung, *BTI 2026 Country Report: Pakistan*.

[78] Sagan, 'The Perils of Proliferation'.

[79] Hans Born, Bates Gill and Heiner Hänggi, eds., *Governing the Bomb: Civilian Control and Democratic Accountability of Nuclear Weapons* (Oxford: Oxford University Press for SIPRI, 2010); Nautilus Institute, 'France: Nuclear Command, Control and Communications', NAPSNet Special Report, https://nautilus.org/napsnet/napsnet-special-reports/france-nuclear-command-control-and-communications/; M.V. Ramana and Lauren J. Borja, *India's Nuclear Command, Control and Communications* (Institute for Security and Technology, 2024), https://securityandtechnology.org/wp-content/uploads/2024/10/ramana___borja_india_nc3_IST_special_report_1-1.pdf.

[80] Phillip C. Saunders, Arthur S. Ding, Andrew Scobell, Andrew N.D. Yang and Joel Wuthnow, eds., *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms* (Washington, DC: National Defense University Press,

Pakistan is distinctive not because its senior officer has a role in nuclear matters, which is common, but because of the combination of roles and protections now vested in one person: command of all conventional forces, a seat in the nuclear authority, a decisive voice in appointing the strategic-forces commander, control of the principal channel of military advice, a statutory tenure reset in his favour, and constitutional immunity from prosecution for life. No other nuclear-armed state vests that combination in a serving military officer. The comparative literature finds that civilian control and operational reliability tend to reinforce rather than undermine each other and that the risks of nuclear command in newer nuclear states lie as much in civil-military relations as in technology.[81]

3.6 Two Missile Commands and a Single Commander

A further complication arises from the creation of the Army Rocket Force Command in August 2025. At the moment that supreme command was concentrated in one office, operational missile authority was divided between a conventional rocket force answerable to the army chief and a nuclear force under the SPD and the National Strategic Command. The separation of conventional precision strike from nuclear delivery has an operational logic, and in principle it could help adversaries distinguish the two. In practice, the two commands converge in the same officer, who, as CDF and army chief, commands the ARFC and shapes the leadership of the NSC. Unless the coordination arrangements between the two forces are made explicit, rehearsed and legible to adversaries, the bifurcation of missile command beneath a single commander combines the discrimination problem identified in Chapter Two with the concentration problem identified in this chapter.[82]

These developments return the analysis to a first principle that must now be treated as contingent rather than settled. A credible and durable nuclear command system rests on more than technical safeguards and clear lines of authority. It rests on strong and legitimate political leadership, on a political culture capable of sustaining institutional checks, and on a command structure whose stability does not depend on the tenure or temperament of any single individual. The concentration effected between 2024 and 2026 may deliver integration and speed. Whether it delivers the durable, rule-bound stability that a nuclear power in the third

2019); Fiona S. Cunningham and M. Taylor Fravel, 'Assuring Assured Retaliation: China's Nuclear Posture and U.S.-China Strategic Stability', *International Security* 40, no. 2 (2015): 7-50.

[81] Born, Gill and Hänggi, *Governing the Bomb*; Feaver, 'Command and Control in Emerging Nuclear Nations'.

[82] 'Pakistan's Army Rocket Force', Small Wars Journal; Acton, 'Escalation through Entanglement'.

nuclear age requires is a question Pakistan's own strategic community should be free to debate openly.

CHAPTER FOUR

STEWARDSHIP AND PERCEPTION

Safety, Security and the Narratives That Surround Them

The argument of the previous chapter concerns the governance of command, not the physical security of the arsenal. This chapter examines the latter, because the distinction between the two is central to an accurate assessment of Pakistan's programme and because international commentary has so often confused them. It reviews the technical and human safeguards, the independent assessments of Pakistan's record, the civil nuclear sector, the comparative evidence, and the threat narratives that have shaped perceptions of the programme.

4.1 Technical and Human Safeguards

Pakistan's safety architecture employs the controls maintained by other nuclear-armed states. Permissive action links prevent detonation without authorisation codes transmitted through the chain of command; environmental sensing devices ensure that arming can be completed only in the physical conditions of intended delivery; and strong-link and weak-link design principles protect against accidental detonation.[83] A national nuclear emergency management system addresses radiological emergencies, illicit trafficking and border controls.[84] Personnel and human reliability programmes govern the selection, vetting, psychological assessment and continuous monitoring of personnel with access to weapons, fissile material and sensitive facilities.[85] In twenty-eight years, no case of an insider in the weapons complex providing access, information or material to an unauthorised party has been publicly documented.[86]

[83] Scott D. Sagan, *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons* (Princeton: Princeton University Press, 1993); Paul Bracken, *The Command and Control of Nuclear Forces* (New Haven, CT: Yale University Press, 1983).

[84] International Atomic Energy Agency, *Development, Use and Maintenance of the Design Basis Threat*, IAEA Nuclear Security Series No. 10 (Vienna: IAEA, 2009); Matthew Bunn, Martin B. Malin, Nickolas Roth and William H. Tobey, *Preventing Nuclear Terrorism: Continuous Improvement or Dangerous Decline?* (Cambridge, MA: Belfer Center, Harvard Kennedy School, 2016).

[85] Stimson Center, 'Pakistan's Evolving Nuclear Security Culture', 2021, https://www.stimson.org/2021/pakistans-evolving-nuclear-security-culture/.

[86] Todd R. La Porte and Paula M. Consolini, 'Working in Practice but Not in Theory: Theoretical Challenges of High-Reliability Organizations', *Journal of Public Administration Research and Theory* 1, no. 1 (1991): 19-47.

4.2 Independent Recognition, 2016-2025

Independent assessments have recorded steady improvement. The Nuclear Threat Initiative's Nuclear Security Index recognised Pakistan in 2016 as achieving the largest improvement of any nuclear-armed state, in 2020 as the most improved country in the theft ranking for states with nuclear materials, and in 2023 recorded a further three-point gain that placed it above India, Iran and North Korea.[87] In 2022 the IAEA designated Pakistan's National Institute of Safety and Security a Collaborating Centre for nuclear security training.[88] A Practical Arrangement between the IAEA and the Pakistan Centre for Nuclear Non-Proliferation Studies followed in May 2024.[89] In October 2024 Pakistan hosted a national radiation emergency exercise and the IAEA's ConvEx-2c international exercise, and it was elected to the IAEA Board of Governors for 2024 to 2026.[90] IAEA Director General Rafael Mariano Grossi, visiting in February and September 2025, praised the Pakistan-IAEA partnership and the expertise of Pakistan's engineers and scientists in the peaceful uses of nuclear technology.[91]

4.3 The Civil Nuclear Sector and Independent Regulation

The same scientific base supports a civil programme that receives far less attention than the weapons. Pakistan's six safeguarded power reactors, four at Chashma and two at Hualong One unit at Karachi, have a combined gross capacity of 3,530 megawatts and generated a record 21.7 terawatt-hours in 2024, about seventeen per cent of the grid supply.[92] A seventh unit, Chashma-5, is under construction. The Pakistan Nuclear Regulatory Authority, an independent statutory body established in 2001 and led by scientists and engineers rather than serving officers, licenses these plants and regulates several thousand radiation facilities.[93] Table 9 lists the reactors, and Figure 5 traces the growth in capacity.

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[87] Nuclear Threat Initiative, *NTI Nuclear Materials Security Index 2016* (Washington, DC: NTI, 2016); Nuclear Threat Initiative, *NTI Nuclear Security Index 2020* (Washington, DC: NTI, 2020); Nuclear Threat Initiative, *NTI Nuclear Security Index 2023*, developed with Economist Impact (Washington, DC: NTI, 2023).

[88] International Atomic Energy Agency, designation of Pakistan's National Institute of Safety and Security as an IAEA Collaborating Centre, 2022.

[89] International Atomic Energy Agency, Practical Arrangement between the IAEA and the Pakistan Centre for Nuclear Non-Proliferation Studies on training activities for nuclear security, May 2024.

[90] Pakistan Nuclear Regulatory Authority, National Radiation Emergency Exercise NREE-2024, 8-9 October 2024, and IAEA ConvEx-2c exercise hosted by Pakistan, 10 October 2024; Ministry of Foreign Affairs of Pakistan, Permanent Mission in Vienna, 'Pakistan's Nuclear Safety and Security Regime', 2025.

[91] Ministry of Foreign Affairs of Pakistan, press releases on the visits of IAEA Director General Rafael Mariano Grossi, February and September 2025.

[92] Pakistan Atomic Energy Commission, 'Nuclear Power', https://paec.gov.pk/NuclearPower/; World Nuclear Association, 'Nuclear Power in Pakistan', 2025, https://world-nuclear.org/information-library/country-profiles/countries-o-s/pakistan.

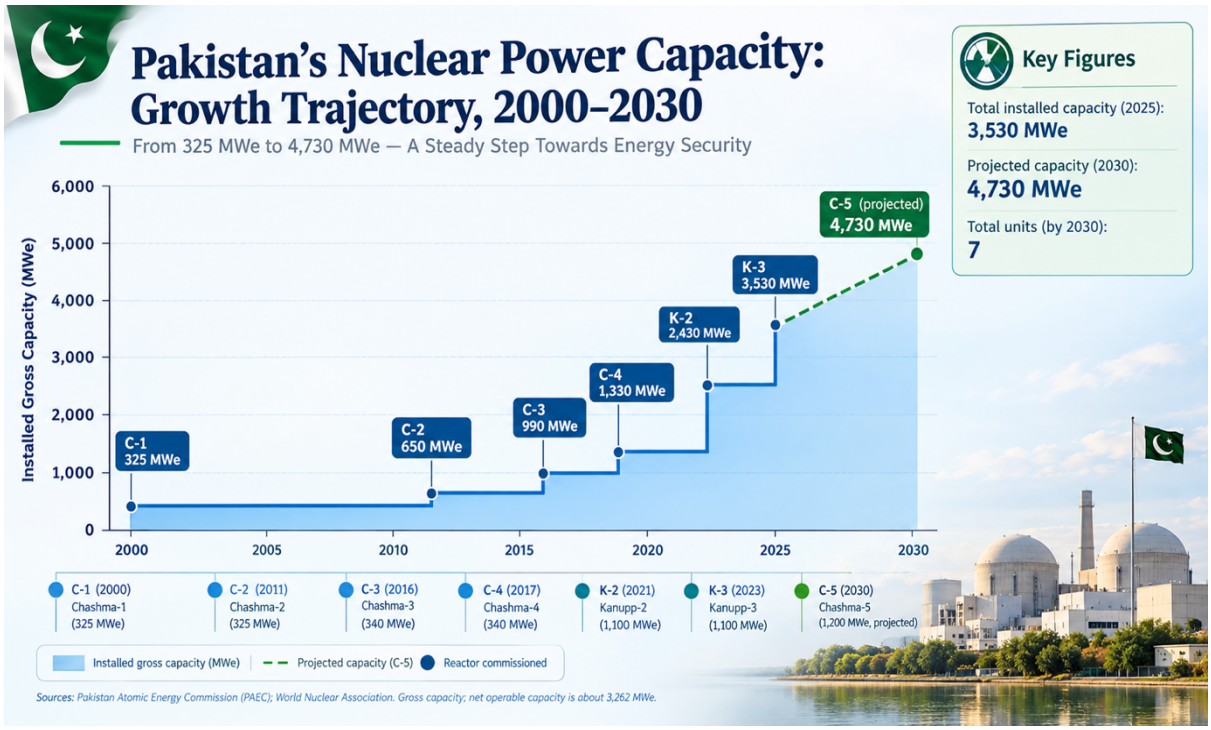
[93] Center for International Strategic Studies, 'PNRA Strengthening Pakistan's Nuclear Future' (Islamabad: CISS, January 2026), https://ciss.org.pk/pnra-strengthening-pakistans-nuclear-future/; Center for International Strategic Studies,

Table 9: Pakistan's Civil Nuclear Power Reactors, 2026

Unit	Technology	Gross MWe	Net MWe	Commercial operation	Notes
Chashma-1 (C-1)	CNP-300 PWR	325	300	2000	First Chinese-supplied unit
Chashma-2 (C-2)	CNP-300 PWR	325	300	2011	
Chashma-3 (C-3)	CNP-300 PWR	340	315	2016	
Chashma-4 (C-4)	CNP-300 PWR	340	313	2017	
Karachi-2 (K-2)	Hualong One (HPR-1000)	1,100	1,017	May 2021	Third-generation design
Karachi-3 (K-3)	Hualong One (HPR-1000)	1,100	1,017	April 2022	
Total operating		3,530	3,262		All under IAEA safeguards
Chashma-5 (C-5)	Hualong One (HPR-1000)	about 1,200		Under construction	Construction began in December 2024.

Sources: Pakistan Atomic Energy Commission; World Nuclear Association reactor database and 'Nuclear Power in Pakistan' (2025). Nuclear plants generated a record 21.7 TWh in 2024, about 17 per cent of grid supply. PWR = pressurised water reactor.

Figure 5: Pakistan's Civil Nuclear Power Capacity, 2000-2030



'Powering the Future Safely: An In-Depth Look at Pakistan's Nuclear Energy Sector' (Islamabad: CISS, August 2025), https://ciss.org.pk/powering-the-future-safely-an-in-depth-look-at-pakistans-nuclear-energy-sector/.

The PNRA matters to the argument of this monograph for a reason beyond energy. It demonstrates that Pakistan can build professionally staffed, internationally credible nuclear institutions that operate outside military command. Chapter Seven draws on this precedent.

4.4 The Record in Comparative Context

Pakistan's restraint in force size stands out in the global data. Its stockpile has not grown for two years, and none of its warheads is deployed, while China, India and North Korea have expanded, and India has begun deploying warheads at sea.[94] Table 10 and Figure 6 present SIPRI's figures for January 2026.

Table 10: World Nuclear Forces, January 2026

State	Deployed Warheads	Military Stockpile	Total Inventory	Notes
USA	1,770	3,700	5,042	Modernisation of triad ongoing across all three legs
Russia	1,796	4,400	5,420	Modernisation across the triad
UK	120	225	225	No change from 2025
France	280	290	370	Total inventory increased; new France-UK nuclear coordination agreement, 2025
China	34	620	620	Increased from 600 in 2025; fastest-expanding arsenal among the nine states
India	12	190	190	First-ever assessed deployment of warheads at sea on an SSBN deterrence patrol
Pakistan	–	170	170	Unchanged from 2025; all warheads held in storage, none deployed
North Korea	–	60	60	Increased from an estimated 50 in 2025
Israel	–	90	90	Unchanged; strategic ambiguity maintained
WORLD TOTAL	4,012	9,745	12,187	Slight decline from 12,241 (Jan. 2025) due to US/Russian dismantlement

Source: SIPRI Yearbook 2026, chapter 8. The military stockpile includes deployed warheads and those in central storage; total inventory also includes retired warheads awaiting dismantlement. '–' denotes nil or negligible.

[94] SIPRI Yearbook 2026, chapter 8.

Figure 6: World Nuclear Forces: Total Inventories and Deployed Warheads, January 2026



Size and posture are one part of the assessment; safe management is another. In twenty-eight years of weapons stewardship Pakistan has recorded no documented nuclear weapons accident, no confirmed security breach and no verified loss of fissile material. High reliability theory predicts that organisations investing seriously in training, procedure and safety culture experience fewer serious incidents, and by the available evidence the SPD-managed complex displays those characteristics, although normal accident theory warns that tightly coupled systems remain vulnerable to failures that no organisation can fully anticipate.[95] States disclose accidents unevenly, so comparative records must be read with care. Table 11 sets out the public record, and Figure 7 shows Pakistan's position in the most recent NTI Index.

Table 11: Comparative Nuclear Safety and Security Record of Possessor States (Public Record)

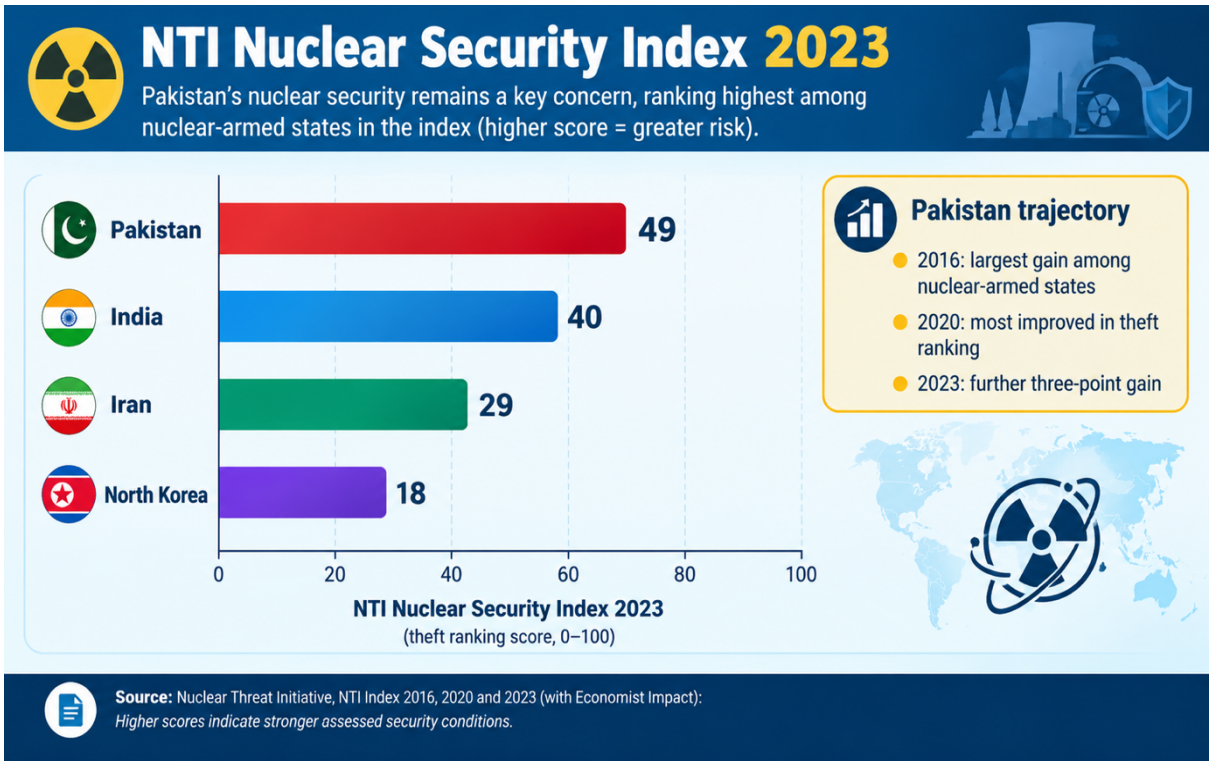
State	Weapons Accidents (post-1960)	Significant Safety Events	Confirmed Material Incidents	Notable Cases
United States	32+ (Broken Arrows)	Multiple PAL retrofits post-incident	0 confirmed	Palomares B52 crash (1966); Thule (1968); Goldsboro near-detonation (1961); Damascus Titan-II explosion (1980)

[95] La Porte and Consolini, 'Working in Practice'; Charles Perrow, *Normal Accidents: Living with High-Risk Technologies*, updated ed. (Princeton: Princeton University Press, 1999).

State	Weapons Accidents (post-1960)	Significant Safety Events	Confirmed Material Incidents	Notable Cases
Russia / USSR	40+ documented	Multiple submarine reactor accidents	Disputed (1990s)	K-19 reactor accident (1961); Kursk disaster (2000); post-Soviet material security concerns
United Kingdom	Several documented	Multiple reported	0 confirmed	1957 Windscale fire; aircraft incidents; Maralinga test site contamination
France	Several	Several reported	0 confirmed	Aircraft and SSBN incidents; Pierrelatte enrichment plant incidents
China	Limited public data	Limited public data	0 confirmed	Very limited public disclosure
India	Several (AERB reported)	Several reported	Radiological source incidents	Mayapuri radiological accident, Delhi (2010)
Pakistan	0 documented	0 documented	0 documented	No publicly documented nuclear weapons incident, 1998-2026; NTI 2023 score of 49, above India (40), Iran (29) and North Korea (18)

Sources: Sagan, The Limits of Safety (1993); US Department of Defense declassified accident records; NTI Index 2016, 2020 and 2023; Stimson Center (2021). States disclose incidents unevenly, and an absence of documented incidents is not proof that none occurred.

Figure 7: NTI Nuclear Security Index 2023: Pakistan in Comparative Context



4.5 Threat Narratives and Their Evidential Basis

The gap between this record and international perceptions of it has a history. The foundational frame was the 'Islamic Bomb', the title of a 1981 book that relocated Pakistan's programme

from the grammar of deterrence against India to a grammar of civilisational threat.[96] The frame predicted that Pakistan's weapons or materials would be shared with other Muslim states or non-state actors through religious solidarity. Twenty-eight years after Chagai, no state transfer of weapons has been documented, and Pakistan's strategic motivation has remained India-specific and explicitly stated.[97]

After September 2001, Pakistan's weapons were cast as a leading nuclear terrorism risk. Graham Allison, Bruce Riedel, Shaun Gregory and others identified Pakistan as a convergence point of catastrophic risks, and imagery analyses of its facilities were widely cited alongside much less rigorous judgements about what they implied.[98] Much of this literature shared a methodological habit: it inferred nuclear security performance from general indicators of governance, extremism and instability rather than from evidence about the institutions that held the weapons.[99] The literature was never uniformly pessimistic. Devin Hagerty's study of the 1990 crisis offered an early and influential argument that opaque capabilities had helped deter war.[100]

The A.Q. Khan network did genuine damage. Over some fifteen years Khan supplied centrifuge technology, design information and assistance to Libya, Iran and North Korea, and the episode exposed a serious failure of oversight in the 1980s and 1990s, when the programme operated with little accountability to anyone outside a narrow circle.[101] Two distinctions were nonetheless lost in much of the commentary. The network operated largely before the NCA existed, and its activities had no demonstrated bearing on the custody of Pakistan's own weapons. The government's handling compounded the damage: Khan's televised confession in February 2004 was followed within a day by a pardon, no public trial was held, and in 2008 Khan retracted the confession.[102] The lesson for this monograph is not only reputational. The

[96] Steve Weissman and Herbert Krosney, *The Islamic Bomb: The Nuclear Threat to Israel and the Middle East* (New York: Times Books, 1981); Bhumitra Chakma, *Pakistan's Nuclear Weapons* (London: Routledge, 2009).
[97] Z. Khan, *Pakistan's Nuclear Policy*.
[98] Graham Allison, *Nuclear Terrorism: The Ultimate Preventable Catastrophe* (New York: Times Books, 2004); Bruce Riedel, *Deadly Embrace: Pakistan, America, and the Future of the Global Jihad* (Washington, DC: Brookings Institution Press, 2011); Shaun Gregory, 'The Terrorist Threat to Pakistan's Nuclear Weapons', *CTC Sentinel* 2, no. 7 (July 2009); David Albright and Paul Brannan, 'Pakistan Expanding Plutonium Separation Facility Near Rawalpindi' (Washington, DC: Institute for Science and International Security, May 2009).
[99] Henry D. Sokolski and Bruno Tertrais, eds., *Nuclear Weapons Security Crises: What Does History Teach?* (Carlisle, PA: Strategic Studies Institute, US Army War College, 2013); Clary, 'Safety and Security of the Pakistani Nuclear Arsenal'.
[100] Devin T. Hagerty, 'Nuclear Deterrence in South Asia: The 1990 Indo-Pakistani Crisis', *International Security* 20, no. 3 (1995-96): 79-114.
[101] Corera, *Shopping for Bombs*; Kerr and Nikitin, *Pakistan's Nuclear Weapons*.
[102] 'Khan Retracts Nuclear Confession', Al Jazeera, 30 May 2008, https://www.aljazeera.com/news/2008/5/30/khan-retracts-nuclear-confession.

Khan affair is the clearest historical example of what happens when a nuclear programme is insulated from external accountability, and it is a reason to strengthen, not weaken, institutional oversight.

Since December 2024 a new strand has emerged, in which Pakistan's long-range missiles are discussed in Washington as a potential state-level threat to the United States rather than as a terrorism risk.[103] The framing reflects genuine developments, including Shaheen-III and the Ababeel programme, and a geopolitical logic in which concern about China's expansion is projected onto China's closest partner, reinforced by earlier US sanctions on Chinese suppliers to Pakistan's missile programme.[104] Pakistan's official response has been brief and declaratory.

4.6 Secure Custody, Unaccountable Command

The evidence supports two conclusions that are often treated as incompatible. The first is that Pakistan's physical custody of its weapons has been professional and effective, and that the threat narratives of theft, terrorist seizure and collapse have not been borne out in a single documented case. The second is that the governance of command has become less accountable. The two conclusions are consistent because they concern different things. The custodial system answers the question of whether unauthorised people can gain access to the weapons. The governance system answers the question of who is authorised to decide on their use, on what advice, under what checks and with what legitimacy. Pakistan has answered the first question well. The restructuring of 2024 to 2026 has made its answer to the second question weaker. International critics who focused for two decades on the first question were looking in the wrong place; Pakistani commentators who now point to the custodial record as a reply to concerns about command are making the same mistake in reverse.

[103] Finer, remarks, 19 December 2024; CRS, *Pakistan's New Long-Range Missile Development*.
[104] US Department of State, designations of entities supplying Pakistan's ballistic missile programme, September 2024.

CHAPTER FIVE

DETERRENCE UNDER STRAIN

Crises from Kargil to May 2025

The ultimate test of a deterrent is its performance under stress. Pakistan's has been tested in five major crises since 1998. In each, full-scale conventional war was avoided, and neither side crossed the nuclear threshold. In each, however, deterrence was accompanied by dangerous uncertainty about thresholds and intentions, and in the most recent crisis, that uncertainty extended to the question of who in Pakistan would decide. This chapter reviews the record with that question in view.

5.1 Kargil, 1999

The Kargil conflict of May to July 1999, fought less than a year after the tests, was the first direct military confrontation between two declared nuclear-armed states. Pakistani forces occupied heights on the Indian side of the Line of Control, India responded with a sustained operation, and the Clinton administration's intervention, motivated in part by reports of Pakistani nuclear preparations, produced Pakistan's withdrawal in July.[105] India did not cross the Line of Control in force or extend the war to the international border. The crisis also revealed the risks of nuclear signalling without clarity. Accounts of the decision-making show that the operation was planned within a narrow military circle and that the elected Prime Minister's understanding of it was contested, an early warning of the costs of military autonomy in a nuclear crisis.[106]

5.2 Operation Parakram, 2001-2002

The December 2001 attack on the Indian Parliament led India to mobilise about half a million troops along the border in Operation Parakram, the most prolonged standoff in South Asian history.[107] Over some ten months India did not cross the border in force, and the nuclear

[105] Peter R. Lavoy, ed., *Asymmetric Warfare in South Asia: The Causes and Consequences of the Kargil Conflict* (Cambridge: Cambridge University Press, 2009); Riedel, *Deadly Embrace*.

[106] Feroz Hassan Khan, Peter R. Lavoy and Christopher Clary, 'Pakistan's Motivations and Calculations for the Kargil Conflict', in *Asymmetric Warfare in South Asia: The Causes and Consequences of the Kargil Conflict*, ed. Peter R. Lavoy (Cambridge: Cambridge University Press, 2009).

[107] P.R. Chari, Pervaiz Iqbal Cheema and Stephen Philip Cohen, *Four Crises and a Peace Process: American Engagement in South Asia* (Washington, DC: Brookings Institution Press, 2007).

deterrent performed its primary function. The structural limitation the crisis revealed was that nuclear weapons did not deter subconventional attacks attributed to Pakistan-based groups, which prompted India's search for limited conventional options in the Cold Start doctrine and, in turn, Pakistan's move towards full-spectrum deterrence.[108]

5.3 Mumbai, 2008

The Mumbai attacks of November 2008 generated intense pressure in India for military retaliation. Indian planners understood that punitive action risked escalation whose end point was uncertain, and India chose diplomatic pressure over force.[109] Existential escalation was again avoided. Sub-conventional provocation was again not deterred, reinforcing the cycle that drove doctrinal change on both sides.

5.4 Balakot, 2019

The Pulwama attack of February 2019 led to India's first air strike on undisputed Pakistani territory since 1971, near Balakot on 26 February. Pakistan retaliated the following day and shot down an Indian MiG-21 in the first air combat between two nuclear-armed states, and the return of the captured Indian pilot provided an off-ramp.[110] Balakot showed that nuclear deterrence does not prevent all military confrontation between nuclear-armed states but constrains its scale and that both states were prepared to use force below the nuclear threshold in the absence of shared crisis-management frameworks.

5.5 May 2025: The First Crisis of the Third Nuclear Age

The May 2025 conflict, triggered by India's Operation Sindoor on the night of 6 to 7 May after the Pahalgam attack, was the most severe test of South Asian deterrence since Kargil and the first in which third-age technologies were used at scale. India struck nine sites in Pakistani Punjab and Azad Jammu and Kashmir, and Pakistan retaliated under the codename Bunyanum Marsoos. Over four days the two states exchanged drones and missiles on an unprecedented scale and fought the largest air engagement in the region's history.[111] Pakistan's networked air operations, linking Chinese-origin fighters and long-range missiles with airborne and ground

[108] Ladwig, 'A Cold Start for Hot Wars?'.

[109] George Perkovich and Toby Dalton, *Not War, Not Peace? Motivating Pakistan to Prevent Cross-Border Terrorism* (New York: Oxford University Press, 2016).

[110] Ashley J. Tellis, 'A Smoldering Volcano: Pakistan and Terrorism after Balakot' (Washington, DC: Carnegie Endowment for International Peace, 14 March 2019).

[111] Christopher Clary, *Four Days in May: The India-Pakistan Crisis of 2025*, Stimson Center Working Paper (Washington, DC: Stimson Center, 28 May 2025), https://www.stimson.org/2025/four-days-in-may-the-india-pakistan-crisis-of-2025/.

sensors, inflicted aircraft losses on India, while Indian precision strikes reached deep into Pakistan.[112]

The crisis displayed every third-age risk identified in Chapter Two. Indian strikes on 10 May included Nur Khan air base, close to the headquarters of the Strategic Plans Division, raising the danger that conventional strikes would be read as attacks on nuclear command. Reports that the National Command Authority had been convened were promptly denied by the defence minister, an episode that showed how little the public, and perhaps the adversary, knew about who would decide.[113] SIPRI warned that the combination of strikes on nuclear-related military infrastructure and third-party disinformation had risked turning a conventional conflict into a nuclear crisis.[114] India alleged that China had supplied live intelligence to Pakistan, illustrating how third-party technology and information now enter bilateral crises.[115] Christopher Clary's assessment reached a more measured conclusion, judging that India had remained several doors away from the nuclear one while documenting how quickly both sides had climbed the conventional ladder.[116]

5.6 Lessons: Crisis Stability and the Question of Who Decides

The deterrent held in May 2025, and that conclusion deserves to be stated first. But the conflict exposed two weaknesses that the subsequent restructuring did not address and may have worsened. The first is the absence of shared crisis-management mechanisms between India and Pakistan beyond the agreements of 1988, 2005 and 2007.[117] The second is opacity about Pakistani decision authority in a crisis. The 27th Amendment followed within six months and was justified by reference to the lessons of the conflict, but it answered a question about military integration rather than one about political control. The officer who directed the conventional campaign of May 2025 is now also the senior military member of the nuclear authority. The next crisis will be fought faster, with longer-range conventional weapons and denser information warfare, under a command structure that adversaries understand less well than the one it replaced.[118]

[112] Reuters, 'How Pakistan Shot Down India's Cutting-Edge Fighter Jets'.
[113] Clary, *Four Days in May*.
[114] SIPRI, 'Nuclear Risks Grow as New Arms Race Looms', press release, 16 June 2025.
[115] 'China Used Op Sindoor as "Live Lab"', The Tribune.
[116] Clary, *Four Days in May*.
[117] Agreement between India and Pakistan on the Prohibition of Attack against Nuclear Installations and Facilities (1988); Agreement on Pre-Notification of Flight Testing of Ballistic Missiles (2005); Agreement on Reducing the Risk from Accidents Relating to Nuclear Weapons (2007).
[118] Perkovich and Dalton, *Not War, Not Peace?*.

CHAPTER SIX

THE STRATEGIC CONTEXT OF NUCLEAR DISCOURSE

Narrative, Diplomacy and the Narrowing of Debate

In the third nuclear age, what a state says about its nuclear forces is part of how those forces deter. Adversaries read intentions from doctrine, statements and institutional signals; allies and international institutions judge responsibility by transparency and engagement; and in crises, narratives travel faster than facts. This chapter examines the strategic context in which Pakistan's nuclear discourse operates and argues that the concentration of authority over nuclear policy has also concentrated authority over nuclear speech, with costs for deterrence and diplomacy.

6.1 Why Discourse Has Become Part of Deterrence

Three features of the strategic environment make discourse a component of deterrence rather than an accessory to it. The first is ambiguity. As Chapter Two showed, Pakistan's conventional and nuclear systems now overlap in range and appearance, and its doctrine of full-spectrum deterrence relies on adversaries believing that limited conventional attacks could provoke a nuclear response. Ambiguity can deter, but beyond a point it invites miscalculation, and only authoritative communication can calibrate it. The second is speed. In May 2025, claims about strikes, losses and nuclear meetings spread within hours and shaped decisions on both sides before they could be verified.[119] A state without credible, quickly available official and independent voices cedes the interpretation of its actions to others. The third is the widening audience. Pakistan's nuclear posture is now assessed not only in New Delhi but in Washington, where its long-range missiles are discussed as a possible threat to the United States, and in Beijing, Riyadh and Vienna.[120] Each audience requires a different kind of explanation.

Constructivist scholarship explains why this matters. Nuclear reputations are produced through communication and institutional practice, not only through material capability.[121] A sound custodial record that is not explained, debated and corroborated by credible voices does little

[119] SIPRI, 'Nuclear Risks Grow'; Hersman, 'Wormhole Escalation'.
[120] CRS, *Pakistan's New Long-Range Missile Development*.
[121] Wendt, *Social Theory*.

to shape how others interpret a state's intentions. In this sense, Pakistan's communication deficit is part of its strategic problem rather than a separate public-relations issue.

6.2 Who Speaks for Pakistan's Bomb?

Pakistan's nuclear discourse has always been dominated by the institution that manages the weapons. Doctrine is announced through statements of the Inter-Services Public Relations directorate and the SPD, and the most comprehensive public account of full-spectrum deterrence came in a single conference address by the former Director General of the SPD.[122] The Arms Control and Disarmament Affairs directorate within the SPD manages arms control engagement and outreach, staffed largely by serving or recently retired officers.[123] Parliament has never debated nuclear doctrine, no defence white paper has been published, and the Ministry of Foreign Affairs depends on the SPD for its technical positions.

The consequence is that the doctrine with the greatest bearing on escalation in South Asia was announced but never argued in public. International critics who raised concerns about tactical nuclear weapons, delegation and escalation had few independent Pakistani interlocutors, and the Pakistani scholarship that does exist, much of it produced from positions outside the official structure, has had limited institutional support.[124] The restructuring from 2024 to 2026 narrows this space further. When one officer controls the conventional forces, sits in the nuclear authority and controls the channel of military advice, the range of voices able to speak with authority on nuclear matters shrinks accordingly.

6.3 The Indian Comparison

India offers the clearest contrast. Since the 1970s, and with greater investment after 1998, India has developed a civilian strategic community of research institutes, journals and scholars who contest nuclear policy openly, together with a published draft doctrine and an official statement of its command arrangements.[125] This ecosystem produces much of the literature through which South Asian nuclear dynamics are understood internationally, and it embeds Indian perspectives in that literature. The asymmetry is not one of quality, which Pakistani scholars have shown they can match, but of scale, institutional support and, above all, permission. Indian

[122] Kidwai, Carnegie address, 2015.
[123] Dalton and Krepon, *A Normal Nuclear Pakistan*.
[124] Khan, *Eating Grass*; Naeem Salik, *Learning to Live with the Bomb: Pakistan, 1998-2016* (Karachi: Oxford University Press, 2017).
[125] Rajesh M. Basrur, *Minimum Deterrence and India's Nuclear Security* (Stanford: Stanford University Press, 2006).

nuclear policy is debated under civilian authority; Pakistani nuclear policy is explained, when it is explained at all, by the military.

6.4 Diplomatic Constraints and Openings

Pakistan's Track II engagement has built personal relationships and informal channels, but its effect on doctrine in either capital has been limited.[126] The Financial Action Task Force grey-listing of 2018 to 2022 consumed diplomatic attention and reinforced an image of Pakistan as a state under external compliance pressure until its removal in October 2022.[127]

The multilateral environment now offers an opening. The Eleventh NPT Review Conference, held in New York from 27 April to 22 May 2026, ended without a substantive outcome document, the third consecutive failure, amid what SIPRI describes as a dangerous new arms race.[128] Pakistan, whose stockpile has remained stable while most possessor states expand, is positioned to make credible proposals on risk reduction, missile notification and the governance of emerging technologies. Its ability to do so depends on whether it has institutions capable of developing and defending such proposals with independent authority. The next chapter sets out how they could be built.

[126] Peter Jones, *Track Two Diplomacy in Theory and Practice* (Stanford: Stanford University Press, 2015); Chari, Cheema and Cohen, *Four Crises and a Peace Process*.
[127] Financial Action Task Force, 'Outcomes FATF Plenary, 20-21 October 2022' (Paris: FATF, 2022).
[128] United Nations, Eleventh Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, New York, 27 April-22 May 2026; SIPRI Yearbook 2026, chapter 8.

CHAPTER SEVEN

RESTORING CIVILIAN AUTHORITY IN THE THIRD NUCLEAR AGE

Policy Options

The preceding chapters point to a single conclusion. Pakistan's difficulty is not that its weapons are insecure or that its achievements are poorly explained, although the second is true. It is that the governance of its nuclear forces has become narrower, less accountable and less durable at the moment that technology demands the opposite. This chapter therefore begins with civilian authority and doctrine and only then turns to risk reduction, transparency and institutions.[129]

7.1 Restoring Civilian Authority Over Nuclear Decision-Making

Civilian control of nuclear weapons is not a concession to external critics. It is the arrangement that every durable nuclear power has adopted, because it ties the most consequential decisions a state can take to political institutions that answer for them.[130] Pakistan's own history supports that principle: the programme's founding was a political act, and its most important decision, to test in 1998, was formally a civilian one.

Six measures would restore a meaningful civilian role without reversing the operational gains of tri-service integration. First, the separation between conventional command and nuclear membership should be restored. The Chief of Defence Forces may reasonably command the three services, but the military member of the National Command Authority should be an officer without concurrent command of the conventional forces, such as the Commander of the National Strategic Command answering directly to the NCA. Second, the requirement for a collegial decision at the point of nuclear release should be written into statute, naming the officeholders whose concurrence is required, on the model of multi-person arrangements maintained by other nuclear states.[131] Third, the appointment of the Commander of the National Strategic Command should be made by the Prime Minister after consultation within the NCA, not on the recommendation of a single officer, and should be open to candidates from all three services.

[129] Dalton and Krepon, *A Normal Nuclear Pakistan*.
[130] Born, Gill and Hänggi, *Governing the Bomb*.
[131] Bracken, *Command and Control of Nuclear Forces*; Born, Gill and Hänggi, *Governing the Bomb*.

Fourth, Parliament should establish a joint committee on strategic affairs, with security-cleared members from government and opposition, receiving regular classified briefings and publishing an annual unclassified report on the governance of nuclear forces. Fifth, the Prime Minister's chairmanship of the NCA should be given substance through a small civilian strategic staff within the National Security Division, with independent expertise in nuclear policy, so that the chair can question, test and direct rather than simply receive advice. Sixth, and most important, future changes to nuclear command should require broad political consensus and normal parliamentary scrutiny. Durability is itself a component of deterrence, and durability in a parliamentary system comes from consent.[132] The constitutional immunity attached to five-star rank should also be reconsidered, since no officer with a role in nuclear decisions should stand outside the reach of law.

7.2 Renewing Nuclear Thinking for the Third Nuclear Age

Pakistan's nuclear thinking was formed for the second nuclear age and has changed less than its environment. Its organising ideas, survival against a larger neighbour, the sufficiency of capability, opacity as a virtue and nuclear policy as a military preserve, were reasonable responses to the conditions in which the programme matured. They are poorly suited to an age of collapsing arms control, entanglement, counterforce temptation and information warfare.[133] Table 12 summarises the shifts that renewal would involve.

Table 12: From Second Age to Third-Age Nuclear Thinking

Dimension	Second-age thinking (1998-2025)	Third-age thinking (required)
Strategic purpose	Survival and parity against India	Stability and risk management in a multipolar, entangled environment
Doctrine	Unpublished; announced by the military	Reviewed periodically; essentials published under civilian authority
Authority	Formal civilian chair, military substance	Civilian authority with collegial release and parliamentary oversight
Force structure	Full-spectrum, increasingly dual-capable	Clear separation of nuclear and conventional forces and signatures
Technology	Missiles and fissile material	NC3 resilience; cyber, space and AI risk; human control of nuclear decisions
Arms control	Defensive, declaratory	Proposals on cruise, hypersonic and space risk reduction and crisis communication

[132] Sagan, 'The Perils of Proliferation'.
[133] Futter and Zala, 'Onset of a Third Nuclear Age'; Christopher Clary and Vipin Narang, 'India's Counterforce Temptations: Strategic Options, Doctrinal Ambiguity, and Escalation', *International Security* 43, no. 3 (2018/19): 7-52.

Dimension	Second-age thinking (1998-2025)	Third-age thinking (required)
National debate	Restricted to the security establishment	Independent civilian expertise, a dedicated journal, informed parliamentary debate

Source: author's analysis drawing on Chapters One to Six. NC3 = nuclear command, control and communications.

The shift from the second column to the third is less a matter of capability than of governance. Doctrine should be reviewed periodically under civilian authority, and its essentials published so that adversaries and allies read Pakistan's intentions from authoritative text rather than inference. The conventional forces of the Army Rocket Force Command should be kept physically, procedurally and visibly distinct from nuclear forces. Nuclear command, control and communications should be hardened against cyber and space disruption, and Pakistan should state publicly that decisions on nuclear use will remain under human control.[134]

7.3 Risk Reduction and Arms Control with India

The existing bilateral agreements, on the non-attack of nuclear installations (1988), the pre-notification of ballistic missile tests (2005) and nuclear accidents (2007), were designed for the second nuclear age.[135] They should be extended to cover cruise and hypersonic missiles, which are excluded from the 2005 agreement, and supplemented by a dedicated nuclear crisis hotline, an understanding on non-interference with each other's nuclear command and early-warning systems, including in space and cyberspace, and a commitment to refrain from striking facilities associated with nuclear command in conventional operations. May 2025 showed that the absence of such measures is not a theoretical gap. Pakistan, whose stockpile has remained stable, has a credible basis on which to propose them.

7.4 Controlled Transparency

Controlled transparency, distinguished from full disclosure, which no nuclear-armed state practises, and from the current default of minimal disclosure, is the appropriate model for Pakistan’s nuclear communication.[136] China's approach in the 1990s and 2000s, when it released limited and managed information through white papers and authorised scholarship, shows how a nuclear state can replace an analytical vacuum with its own account without compromising operational security.[137] For Pakistan, controlled transparency could include a

[134] Boulanin, *Impact of Artificial Intelligence*.
[135] India-Pakistan nuclear agreements of 1988, 2005 and 2007.
[136] Nicholas Zarimpas, ed., *Transparency in Nuclear Warheads and Materials: The Political and Technical Dimensions* (Oxford: Oxford University Press for SIPRI, 2003).
[137] Cunningham and Fravel, 'Assuring Assured Retaliation'.

periodic national report on nuclear safety and security, authorised publication of material on doctrine and crisis-management principles, and regular IAEA-facilitated peer review of nuclear security practice building on the NISAS designation and the ConvEx-2c exercise.[138] None of these require the disclosure of classified operational information.

7.5 An Independent Nuclear Policy Authority

Pakistan's own institutional history provides a model for reform. The Pakistan Nuclear Regulatory Authority, an independent statutory body led by scientists and technical experts rather than serving officers, has earned international credibility in the civil sector.[139] A Nuclear Policy Authority established by statute on the same principle, outside the SPD's command structure, could perform the analytical and communicative functions that a military organisation cannot. Its board would be drawn from senior academics, retired diplomats with multilateral experience and former civil servants, its budget would be allocated by Parliament, and a standing coordination mechanism with the SPD would identify what cannot be disclosed for operational reasons without determining what the Authority publishes.[140] Its mandate would include published assessments of posture, safety and arms control engagement; analytical support to the Prime Minister's strategic staff, the parliamentary committee and the Foreign Ministry; and sustained engagement with international research institutions and Track II processes.

7.6 Building Civilian Expertise and Diplomatic Capacity

Institutions require people. Pakistan's universities produce graduates in strategic and nuclear studies, but the employment market for that expertise outside the security establishment is thin, so trained scholars either join institutions where their independence is constrained or leave the field. Three investments would change this. A national programme of doctoral and postdoctoral fellowships in nuclear policy, arms control and emerging technologies, with international placements and protected research time on return, would build a generation of internationally networked civilian scholars. A peer-reviewed journal dedicated to nuclear policy, with an international editorial board and a willingness to publish critical assessments of Pakistan's own posture, would demonstrate intellectual confidence. And a structured programme of nuclear policy training for the Foreign Service, integrated into probationer and mid-career courses,

[138] PNRA, NREE-2024 and ConvEx-2c.
[139] CISS, 'PNRA Strengthening Pakistan's Nuclear Future'.
[140] Dalton and Krepon, *A Normal Nuclear Pakistan*.

would equip diplomats at the Conference on Disarmament, the IAEA and the NPT review process to argue Pakistan's positions with authority.[141] Independent research institutions inside and outside Pakistan can complement this work, because analysis that is independent carries a credibility in international forums that official statements alone cannot achieve.[142]

The political protection of scholars is as important as their funding. The distinction between responsible criticism, which asks difficult questions in ways that strengthen institutional credibility, and irresponsible disclosure, which endangers operational security, is not difficult to draw. Drawing it requires political confidence, and that confidence is a product of the civilian authority that the first section of this chapter seeks to restore.

[141] Salik, *Learning to Live with the Bomb*.
[142] Akhtar, *The Blind Eye*.

CONCLUSION

COMMAND, CUSTODY AND THE THIRD NUCLEAR AGE

This monograph has examined Pakistan's nuclear programme as it enters the third nuclear age. Its first finding is that Pakistan's technological modernisation has been rapid and broad. From a small and opaque force in 1998, Pakistan has built a layered missile arsenal with a multiple-warhead programme in development, an emerging sea-based leg, a separate conventional rocket force, access to military satellite navigation, its own imaging satellites, and a networked combat capability tested in May 2025.[143] These changes are moving Pakistan's deterrent from a recessed, minimum posture towards an integrated, faster and more entangled one.

Its second finding is that Pakistan's custody of its weapons has been professional and effective. Across twenty-eight years there has been no documented weapons accident, confirmed security breach or verified diversion of material, a record corroborated by the IAEA and the Nuclear Threat Initiative.[144] The threat narratives that dominated international commentary for two decades were aimed at the wrong target.

Its third and central finding is that the governance of command has moved in the opposite direction to capability. The programme Bhutto launched as a political project passed after 1977 into the custody of General Zia and the military establishment, and it has remained there. The National Command Authority of 2000 gave civilians a formal chair and left the substance with the army. The changes of 2024 to 2026, from the 26th Amendment and the extension of service chiefs' tenure to the 27th Amendment and the legislation of August 2026, have removed the last separation within the military itself and placed command of the conventional forces, a seat in the nuclear authority, influence over the strategic forces, control of military advice and lifetime constitutional protection in the hands of one officer.[145]

The combination is dangerous. New technologies compress decision time, blur conventional and nuclear operations and expose command systems to disruption and disinformation. They demand more deliberation, more independent advice and more legitimate authority at the top

[143] Kristensen et al., 'Pakistan Nuclear Weapons, 2025'; Reuters, 'How Pakistan Shot Down India's Cutting-Edge Fighter Jets'.
[144] NTI Index 2023; MoFA, Grossi visits, 2025.
[145] Hussain, 'How Would Pakistan's 27th Amendment Reshape Its Military and Courts?'; 'Defence Forces, NCA Amendment Bills Sail thru Parliament', Business Recorder.

of the system. Pakistan is supplying less of each. A command system concentrated in one office is a single point of failure, and one enacted without broad consent is vulnerable to reversal. Domestic stability is therefore not separate from strategic stability; it is its precondition.[146]

The path forward begins with restoring civilian authority: separating conventional command from membership of the nuclear authority, legislating collegial release, opening the strategic-forces command to collegial appointment, establishing parliamentary oversight, giving the Prime Minister an independent strategic staff and requiring consensus for future changes to nuclear command. It continues with renewing doctrine for the third nuclear age and extending risk reduction with India to the technologies that now drive escalation. It is sustained by independent institutions that allow a nuclear state to think about its weapons beyond the organisation that guards them.[147]

Twenty-eight years after Chagai, Pakistan has shown that it can build advanced technology and keep secure custody. The unfinished task is to govern the command under a constitutional order durable and legitimate enough to bear the weight of nuclear decisions in a faster and more dangerous age. That task belongs to Pakistan's elected leadership, and its armed forces would serve the country best by returning to the professional role in which their standing has always been highest. Moving beyond Chagai now means moving from a nuclear programme guarded by an institution to a nuclear programme governed by a state.

[146] Sagan, 'The Perils of Proliferation'.
[147] Feaver, 'Command and Control in Emerging Nuclear Nations'.

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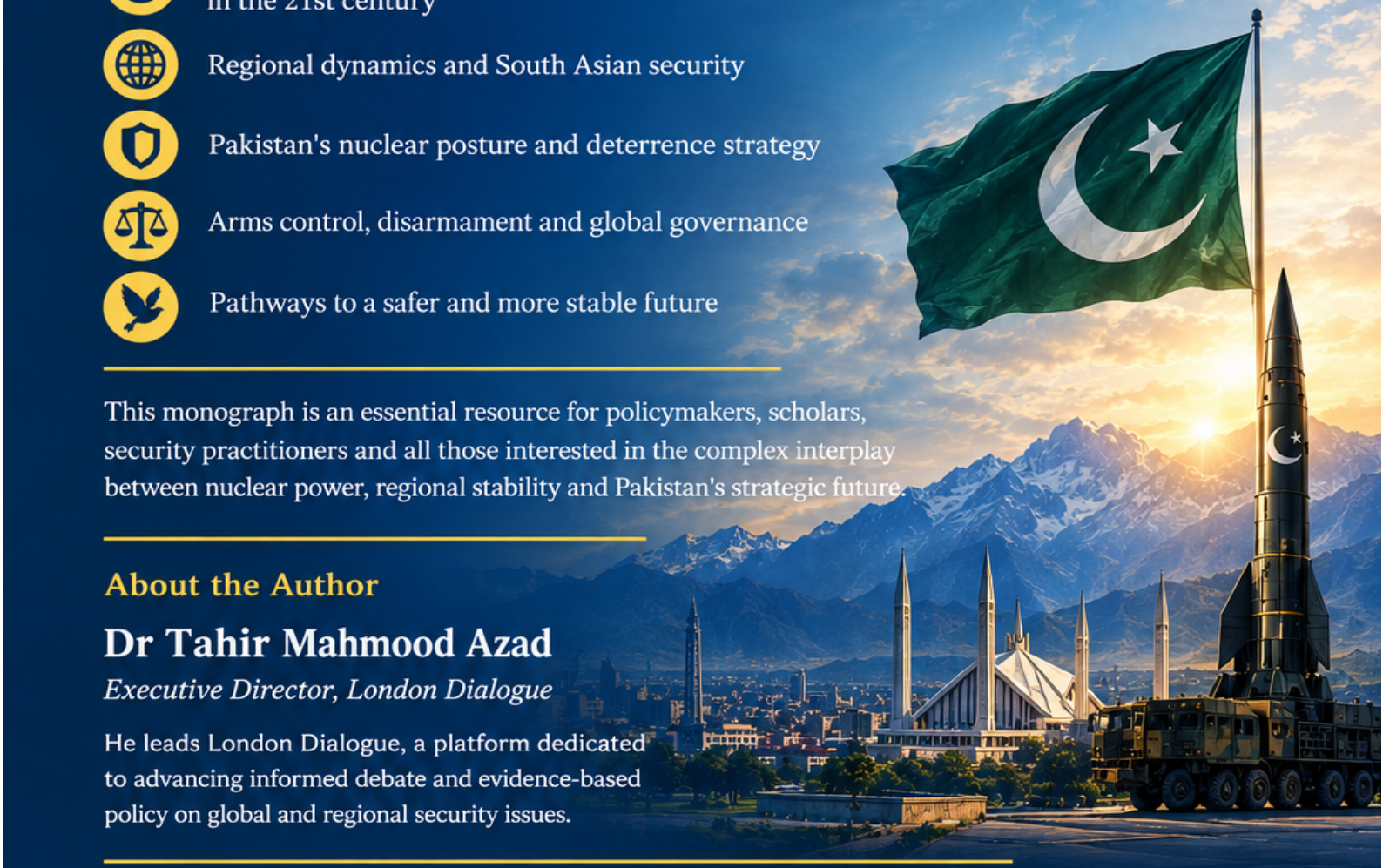
The Third Nuclear Age and Pakistan examines the evolving global nuclear landscape and its implications for Pakistan's securiity, stability and strategic interests. In a world where technology, power competition and regional rivalries are reshaping the balance of deterrence, this monograph provides a timely and comprehensive analysis of the challenges and opportunities facing Pakistan in the third nuclear age.

Drawing on rigorous research and policy insights, the book explores:

- The evolution of nuclear competition in the 21st century
- Regional dynamics and South Asian security
- Pakistan's nuclear posture and deterrence strategy
- Arms control, disarmament and global governance
- Pathways to a safer and more stable future



This monograph is an essential resource for policymakers, scholars, security practitioners and all those interested in the complex interplay between nuclear power, regional stability and Pakistan's strategic future.

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He leads London Dialogue, a platform dedicated to advancing informed debate and evidence-based policy on global and regional security issues.

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