



ARMS CONTROL IN SOUTH ASIA: PROBLEMS AND PROSPECTS

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Jan 11, 2019
ISODARCO 2019



Outline

- The Power Differential in South Asia
- Drivers and Impediments for Arms Control
- Arms Race Trajectory
- Lost Opportunities
- Future Prospects

The Structural Imbalance in South Asia

➤ INDIA

- *Population* \$ 1.3 billion
- *GDP* \$ 2.69 trillion
- *Military Budget* \$ 56 billion

➤ PAKISTAN

- *Population* \$ 210 million
- *GDP* \$ 304 billion
- *Military Budget* \$ 10 billion

Drivers and Impediments for Arms Control

- Unresolved Territorial Disputes
- Role of External Powers
 - *US-India Strategic Partnership*
 - *Russia-India Strategic Partnership*
 - *Pakistan-China Strategic Partnership*

Doctrinal Evolution in South Asia

➤ INDIA

- *Minimum Credible Deterrence*
- *Credible Minimum Deterrence*
- *No First Use and Massive Retaliation*
- *Full Spectrum Conflict and Splendid First Strike (Counterforce Option)*

➤ PAKISTAN

- *Minimum Credible Deterrence*
- *Credible Minimum Deterrence*
- *Full Spectrum Deterrence (60 km-2750 km)*

Doctrinal Evolution in South Asia

- Conventional Military Doctrines: INDIA
 - *Proactive Military Operations/Cold Start*
 - *Indian Army Land Warfare Doctrine 2018*
 - Minimum Escalation through existing Agreements and Protocols (LAC) with China
 - Operational ascendancy to enhance punitive response options to greater depth, effect, sophistication and precision along (LOC) with Pakistan.
 - Full Spectrum Conflict
- Conventional Military Doctrines: PAKISTAN
 - *Comprehensive Response Doctrine*

PAKISTAN ARMY		
Manpower	550,000	
Strike Corps	2	
Holding Corps	8	
Armor	2 Divs 7 Indp. Bgde	2561 Tanks 320 T-80UD 415 MBT-2000 1100 T-59
Infantry	18 Divs 5 Indp. Bgde	
Mountain Div	Nil	
Artillery	2 Divs 9 (Corps) Bgde 5 Indp. Bgde	4472 SP 375 + MLRS
Mechanised	2 Divs 1 Indp. Bgde.	1390 APCs No IFVs

INDIAN ARMY		
Manpower	1,150,900	
Strike Corps	3	
Holding Corps	10	
Armor	3 Divs 8 Indp. Bgde	4312 Tanks 1950 T-72 900 T-90
Infantry	16 Divs 7 Indp. Bgde	
Mountain Div	12 Divs 2 Indp. Bgde	
Artillery	3 Divs	9682 190 SP + MLRS
Mechanised	6 RAPIDs 2 Indp. Bgde	1455 IFVs 336 APCs

Indian Army Modernization

- 22 Guardian UAVs
- 600 new T-90 tanks to be added, existing fleet being upgraded.
- 1 new Mountain Strike Corps
- Heavy Lift Transport Capabilities
- 22 Apache Gunships
- 145 M777 155mm Ultra-Lightweight Howitzers
- 3000 to 4000 155 mm artillery systems will be procured
 - *K-9 SP Howitzers inducted suitable for IBG deployments against Pakistan.*

Pakistan Army Modernization

- SP Artillery Advantage (being countered with new inductions by India)
 - *New systems being evaluated (China and Turkey)*
- LY-80 LOMADS and FM-90 SAMs inducted
- A-100 MLRS inducted
- 100 T-84 Oplot-P tanks being negotiated with Ukraine.
 - *T-90 from Russia?*
 - *VT-4 from China?*
- Azm-e-Nau annual exercises to meet the IA threat of PAO (Cold Start)
- Al-Khalid-II program, T-59 upgradation
- 4 Mi-35P inducted
- 30 T-129 Attack Helicopters being negotiated with Turkey
- Possibility of HQ-9 SAM in response to S-400

PAKISTAN AIR FORCE (PAF)		
Combat Aircraft	447	
F-16	24+9 A MLU 21+4 B MLU	18 C/D Block 52
JF-17	100 +	150 Block II & III in pipeline
Mirage 3	80	
Mirage 5	82	
F-7P	74	
F-7 PG	49	
AEW/AWACS	3+ 3 SAAB Erieye 4 ZKD-03	

INDIAN AIR FORCE (IAF)		
Combat Aircraft	835	
SU-30 MK1		230+ 42
Rafale		36
Mirage 2000	50	Upgraded
Mig-29	78	Upgraded
Mig-21	245	
Mig-27	87	
Jaguar	145	
AEW/AWACS/ ISR	3+2 A50 2+1 ERJ 145 3 IL-76TD Phalcon 3 Gulfstream 4	

Indian Air Force Modernization

- Entire SU-30 MKI fleet being modernized to Super Sukhoi Standard
- Upgradation of Mig-29, Mirage-2000
- 36 Rafale on order, another 36 being considered
- 2 JSTARs from the United States
- S-400 SAM deal being finalized with Russia
- C-17 Globemaster III, C-130J
- Integrated Air Defense and BMD Network
 - *S-400, Spyder, Barak SAM*
 - *Brahmos, Nirbhay ALCMs under SFC*

Pakistan Air Force Modernization

- F-16 era is over
- JF-17 Program, Block I, II & III
 - *250 aircraft to replace Mirage 3 and 5 and F-7Ps and F-7PGs*
- SAAB 2000 Erieye AWACS/AEW
- MBDA SPADA-2000 SAMs,
- Il-78 MP Mid-air Refueling aircraft
- Standoff weapons being inducted and integrated (350 km Raad) AFSC
- J-10 C procurement options
- Financial and supply side constraints

INDIAN NAVY

Destroyers	13	
Frigates	13	
Corvettes	24	
Aircraft Carriers	1	33 Mig-29K 10 Sea Harrier
Submarines	13 SSK 1 SSN	1 SSBN Arihant
MCMVs	6	
ASW/LRMPA	8+4 P8(I) 5 II-38 SD 4 Tu-142 M Bear	

PAKISTAN NAVY

Destroyers	0	
Frigates	10	
Corvettes	0	
Aircraft Carriers	0	
Submarines	5 SSK	
MCMVs	3	
ASW/LRMPA	7 PC-3 Orion 3 ATR-72	
FAC	13	

Indian Naval Modernization

- Another 4 P8I Neptune LRMP ASW on order
- The Indian Navy plans to have 150 ships and 500 aircraft
- Second Aridhaman-class SSBN being commissioned in 2018
- 5 more Arihant SSBNs planned. 4 (700 km K15) or 12 (3500 km K4) missiles on each boat.
- 6 SSN approved by CCS in 2015, 6 Scorpene SSKs on order
- 1 Aircraft carrier under construction, 1 planned
- 4 Stealth DDGs, 7+4 Stealth FFGs, 31 ASW Corvettes, 12 MCMVs planned
- Brahmos supersonic and hypersonic versions, Barak VLS SAMs
 - *CIWS on PN ships cannot defend against IN Brahmos*

Pakistani Naval Modernization

- 8 Chinese S-20 AIP SSKs on order (2015-2028)
- 4 Turkish MILGEM Corvettes
- 12 Sea King ASW helicopters inducted
- 4 Type-54 AP from China (2022)
- Naval leg of the triad (Jan 2017)
 - *Babur-3 SLCM (450 km) on AIP equipped SSKs.*
- Harba AShM
- Zarb Land-based AShM
- CM400-AKG AShM

The Nuclear Balance in South Asia



The Fissile Material Race

PAKISTAN	
WG HEU	3.4 ton
WG Pu	280 kg
RG Pu	Nil
Weapons Worth	240
Production Capacity/yr	22 warheads

INDIA	
HEU	4 ton (1+ ton U-235)
WG Pu	700 kg
RG Pu	7 ton Separated 11-14 ton Unseparated
Weapons Worth	1475 + 2750
Production Capacity/yr	260 warheads

Fissile Material Production Asymmetry in South Asia

	India	Pakistan
Production Reactors	<p>40 MWth (CIRUS) De-commissioned</p> <p>100 MWth Dhruva-I</p> <p>125 MWth Dhruva-II (Planned)</p> <p>35 MWth Research Reactor (Planned)</p>	160-200 MWth (Khushab Complex)
Breeder Reactors	<p>PFBR 500 MWe (2019)</p> <p>March 2018, 2032 N-Energy Plan was revised from 63 GWe to 24 GWe. 57 NPP projects cancelled. No mention of additional 4-5 FBRs. Almost all the Civil (unsafeguarded) Pu for FBRs freed up for NWP</p>	Nil
PHWRs (unsafeguarded)	<p>2350 MWe Existing</p> <p>2800 MWe (Planned)</p>	Nil
Reprocessing Plants	<p>350 tHM/yr Existing</p> <p>1900 tHM/yr (Planned)</p>	140 tHM/yr Existing
Uranium Enrichment	<p>30,000-45,000 SWU/yr Existing</p> <p>126000 (Planned)</p>	15000-45000 SWU/yr

Pakistani Strategic Forces

System Name	Range (km)	Fuel	Status	Employment
Hatf-1A	80-100	Solid	Operational	Counter Force
Abdali	180-200	Solid	Operational	Counter Force
Ghaznavi	280	Solid	Operational	Counter Force
Shaheen-1	650-900	Solid	Operational	Counter-Value
Shaheen-1A	900	Solid	Operational	Counter Value
Ghauri	1300	Liquid	Operational	Counter Value
Shaheen-2	1500-2000	Solid	Operational	Counter Value
Shaheen-3	2750	Solid	Operational	
Babur-1	700	Solid	Operational	Dual
Babur-2/RA'AD	350	Solid	Operational	Counter-Force
NASR	60	Solid	Operational	Counter Force
Babur-3	450	Solid	Tech Demo	Dual
Ababeel (MIRV)	2200	Solid	Tech Demo	Dual

Indian Strategic Forces

System Name	Range (km)	Fuel	Status	Employment
Prithvi-I, II, III	150, 250, 350	Liquid	Operational	Dual
Prahaar	50-150	Solid	Operational	Counter Force
Agni-I	700-1250	Solid	Operational	Counter Value
Agni-II	2000-3000	Solid	Operational	Counter Value
Agni-III	3500	Solid	Operational	Counter Value
Agni-IV	3000-4000	Solid	Operational	Counter Value
Agni-V	5000-8000	Solid	Tested	Counter Value
Brahmos-I Brahmos-II Brahmos-A	290 450-600 400 SFC	Solid	Operational In Development	Counter Force
Nirbhay	1000-1500	Solid	In Development	Counter Force
Pinaka	70	Solid	Operational	Counter Force

Pakistan's Strategic Restraint

- No Nuclear Powered Submarine (SSN)
- No Nuclear Powered Ballistic Missile Submarine (SSBN)
- No Ballistic Missile Defense Program
- No Canisterization of Ballistic Missiles
- No ICBM program
- No Space Launch Vehicle Capability
- Limited ISR and Virtually No Space Capability
- Limitations on Projected Fissile Material Production

Pakistan's Strategic Restraint

- Only 5 ballistic/cruise missile tests in 2017-18
- India conducted 26 tests in 2018, with renewed emphasis on short range, Pakistan specific counter-force systems.
 - *Prithvi-I, II,*
 - *Prahaar*
 - *Dhanush*
 - *K-15 SLBM*
 - *Pralay*
 - *Brahmos*
 - *Agni, I, II, III & IV (tested on depressed trajectory)*

Strategic Restraint Regime

- In October 1998, Pakistan proposed a framework for a “Strategic Restraint Regime” or SRR.
 - a) a non-aggression pact
 - b) the prevention of a nuclear weapons and ballistic missile race
 - c) risk reduction mechanisms
 - d) avoidance of nuclear conflict
 - e) formalizing moratoria on nuclear testing
 - f) non-induction of anti-ballistic missile systems and submarine-launched ballistic missiles, and
 - g) nuclear doctrines of minimum deterrent capability.
 - h) Pakistan also proposed mutual and balanced reduction of forces in the conventional field.

Strategic Restraint Regime

- India matched these proposals by offering:
 - a) no-first-use pledges
 - b) agreement on preventing nuclear war, including through accidental or unauthorized use of nuclear weapons
 - c) extension of agreements prohibiting attack against nuclear installations;
 - d) advance notification of ballistic missile tests;
- Pakistan's offers for SRR have been rejected

Successful CBMs

- Non Attack on Each Other's Nuclear Facilities (1991)
- Agreement to Reduce the Risk of Accidents Related to Nuclear Weapons (2007)
- Ballistic Missile Flight Test Notification (2005)

Lost Opportunities for CBMs

- (All ignored or rejected by India)
 - South Asia Nuclear Weapon Free Zone
 - Simultaneous Adherence to the NPT
 - Mutual Inspection of Each Other's Nuclear Facilities
 - Strategic Restraint Regime
 - CTBT Bilateral Agreement
 - Cruise Missile Flight Test Notification
 - Demilitarization of Siachen Glacier

Prospective CBMs

- Agree to resume comprehensive dialogue
- Consider the modalities and functions of risk-reduction centers and N-hotline.
- Agree not to weaponize space.
- Consider Mutual Balanced (Conventional) Force Reductions.
- Consider not to conduct cyberattacks against nuclear command and control systems.
- No Short-Range Nuclear Battlefield Systems for No Cold Start
- Civil and Military Separation of Nuclear Materials and Programs

Thank You!