



**MANAGING NUCLEAR  
MISSILE COMPETITIONS  
BETWEEN INDIA,  
PAKISTAN AND CHINA**



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# OVERVIEW OF MISSILE INVENTORIES

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# CHINA – BALLISTIC MISSILES

CATE-GORY	DESIG-NATION	RANGE	PAYLOAD	NOS.
<b>SRBMs</b> (< 1000 KMS)	DF-15 / M-9 / CSST -600	600	950 Kgs; 350 kT	350-400
	DF-11 / M-11 / CSS-X-7	300	800 kgs; 350 kT	700-750
<b>MRBMs</b>	*DF-3 / CSS-2	3000	2150 kgs; 3.3 MT	15-20
	DF-21/21A /CSS-5 (Mod1&2)	2100	600 kgs; 350kT	60-80
<b>IRBMs</b>	*DF- 4 / CSS-3	5400	2200 Kgs; 3.3MT	15-20
<b>ICBMs</b>	*DF-5/5A	13000	3200 kgs; 4-5 MT	20
	DF-31/ 31A	7200 / 11200	(?); 200 Kt MIRV(?)	< 20
<b>SLBM</b>	*JL1 /	1000+	600 kgs; 350kT	12
	JL2	7200	700 kgs; 300kT)	60(?)

# CHINA – CRUISE MISSILES

CATEGORY	DESIGNATION	RANGE	PAYLOAD	NOS.
LACM	ALCM+ GLCM  Kh-55 / AS-15 (KENT)	3000 kms		(?)
	HN-1/ HN-2	600 / 1500	350 kgs; 90 kT	300 (?)
	DH-10	1500		150-300
	YJ - 63	400-500		
	TIANJIN - 1	600-1000(?)		
ASCMs	YJ-62			120
	STYX / CSS-N-2			100
	SUNBURN / SS-N-22			100+
	SIZZLER SS-N-27			50(?)

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# CHINA MISSILES –MAIN FEATURES

- 1300+ missiles, majority short range, conventionally armed
  - 40 ICBMs, ranges 7200-13000 kms
  - 90-120 M/ IRBMs, all land-based
  - Only SLBM (JL-1) not successful
  - New SLBM tested , awaiting Jin Class SSBN.
  - Missiles are “not targeted at specific countries in peacetime.”
  - Prior to mutual “No-targeting” agreement, half of ICBM inventory was targeting US
  - Chinese missiles based on original buy-outs from the USSR/Russia.
  - Modern Russian-supplied ASCMs
  - About 120 missiles of the total inventory are nuclear capable.
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# PAKISTAN - MISSILES

TYPE	DESIGNATION	PROPULSION	RANGE KMS	PAY- LOAD	NOS.
SRBM	HATF – 1/ 1A /	SOLID FUEL	60-80/100	500	
	HATF -2 / SHADOZ	SOLID FUEL	300	500	
	HATF -3/DF-11 / M11 GHAZNAVI	SOLID FUEL	280	800	35 – 85
	HATF- 4 DF-15 SHAHEEN	SOLID FUEL	600 - 800	500	(?)
	HATF-6/M18(?) / SHAHEEN- II	SOLID FUEL	2000	500	
	HATFV/GHAURI /NODONG	LIQUID FUEL	1200-1300	1000	12-15
	*GHAURI II	LIQUID FUEL	1700		
LACM	*GHAURI III	LIQUID FUEL	2500-3500		
	HATF-VII/DH10 /BABUR		700		
ALCM	HATF VIII / RA'AD		350		

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# PAKISTAN MISSILES – MAIN FEATURES

- Chinese and N Korean assistance
  - Efforts under way for cruise missile- delivery systems
  - Chinese selectively abide by the MTCR; e.g. air-launched missiles are excluded.
  - Currently Pak still dependent on China and DPRK for propellant , critical components and technological aspects.
  - The Ghaznavi (/M11) and Shaheen-I are believed to be operational.
  - Shaheen II development is complete and induction and service trials may soon commence. Ghauri II development is likely to be completed soon.
  - Pak also keeps missiles and warheads de-mated as well as separated.
  - Warheads are believed to stored in disassembled state
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# INDIA - MISSILES

Name/ Alt.	Missile /Propulsion	Warhead	Payload	Range	Nos
Prithvi-I/ SS-150	Ballistic/ Liquid fuel	Conv/ Nuclear	1,000	150	75-90
Prithvi-II/ SS-250	Ballistic/ Liquid fuel	Conv/ Nuclear	500	250	25
Dhanush/Prithvi-III/ SS-350	Ballistic/ Liquid fuel	Conv/ Nuclear	NK	350 Sh / Sm	
Agni- (TD)	Ballistic /2Stage Hybrid	Nuclear	1,000	1,200- 1,500	10 -20
Agni-I	Ballistic/ Solid fuel	Nuclear	1,000	700- 800	NK
Agni-II	Ballistic/ Solid fuel	Nuclear	1,000	2,000- 2,500	NK
*Agni-III	Ballistic/ Solid fuel	Nuclear	NK	3,500- 4,000	
*Agni-V	Ballistic/ Solid fuel	Nuclear	NK	5,000	
BrahMos/ PJ10	Ballistic/ 2 Stage Hybrid Engine	Conv	200-300	280-300 Sh/Sm/Gr/Air	
*Nirbhay	Cruise	Conv	NK	1,000 km	
*K-15 Sagarika	2 stage SLBM	Conv/ Nuclear	600	700 km	
*Shourya	Ballistic/Solid/Canisterised	Conv/ Nuclear	> 500	600 km	



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# MISSILE PROGRAMME DRIVERS - CHINA

- The Taiwan Issue
  - China-US Relations.
  - Relations with Russia.
  - Japan AND South Korea.
  - India.
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# MISSILE PROGRAMME DRIVERS - PAKISTAN

- Indo-centric threat perception
  - Perception of Indian superiority in conventional forces
  - Nuclear Deterrent meant to deter conventional attack
  - Long land border, Navy irrelevant
  - Major Indian value targets within range of fighter-bombers
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# MISSILE PROGRAMME DRIVERS - INDIA

- Long land border with both China and Pakistan
  - History of territorial wars with both
  - Both nuclear weapon states
  - Strong China- Pakistan relations
  - Transfer of missile and nuclear technology
  - India's NFU policy
  - Triad doctrine
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# MISSILE COMPETITION

- With China: India will cope, not compete
  - “Competition” only applies to Pakistan and India
  - Use of launches to convey political signals
  - Ind-Pak-China triangle – a complication
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# RISK FACTORS

- If Missile force over-stretched, C3 will be inadequate
  - “Political” launches can be misinterpreted
  - Conventional missile attack, nuclear response?
  - Non state actors
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# EFFECT OF DOCTRINE

- NFU results in diversification of delivery systems
  - First use option creates uncertainty
  - Dispersal loosens control
  - Dispersal strains C3, may result in pre-delegation
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# MEASURES TO CONTROL MISSILE COMPETITION

- Discussions to reach agreed force levels
  - Risk reduction Centres
  - Eschew conventional SRBMs
  - No “political” launches
  - Control non-state actors
  - Include China
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THANK YOU

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