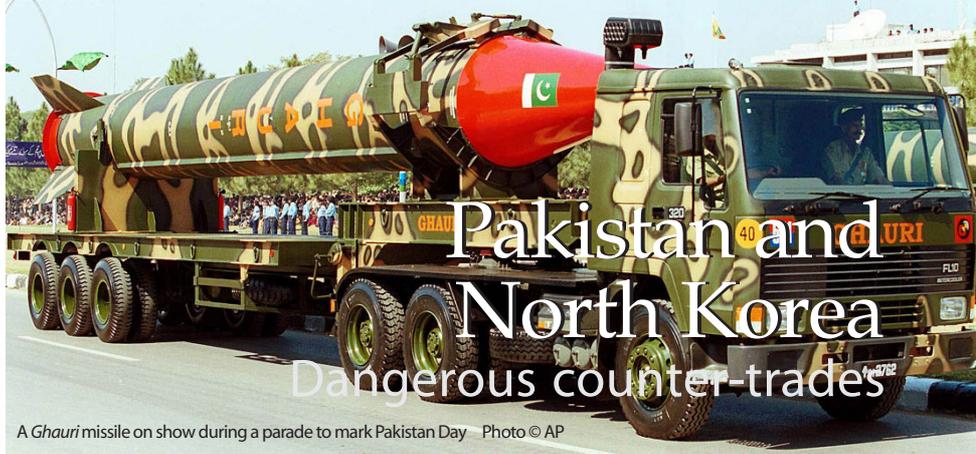


IN OCTOBER 2002, reports citing US officials claimed that Pakistan had assisted North Korea in its recently uncovered effort to develop a clandestine uranium enrichment-based nuclear weapons programme, in violation of Pyongyang's treaty obligations. The allegation that Islamabad traded sensitive information on the gas centrifuge uranium enrichment process, and possibly related technologies, in exchange for North Korean *No-dong* ballistic missiles has heightened concerns about Pakistan's apparent resolve to create an operational nuclear strike force against India through a contravention of global non-proliferation norms and at the risk of destabilising relations with Washington. More importantly, it has raised questions about Pakistan's nuclear decision-making institutions and procedures, and the extent to which military decisions on strategic policy have been subject to review by civilian authorities and rival governmental institutions.

Strategic context

Nuclear-missile links between Pakistan and North Korea are thought to date from the early 1990s when Pakistan, having acquired the capability to build enriched uranium devices, was seeking appropriate delivery systems. Forty F-16 aircraft acquired from the US in the mid-1980s were initially the delivery system of choice. However, after the US in October 1989 invoked the Pressler Amendment (to terminate economic and military aid to Islamabad because of the latter's proliferation advances), the long-term viability of a Pakistani nuclear deterrent centred on US strike aircraft was thrown into doubt. Islamabad concluded that in order for Pakistan to have a secure nuclear strike capability against India, it would need to invest in a ballistic missile force.

However, Pakistan lacked the infrastructure, personnel, or a large civilian satellite launch programme that could be used as a base to develop ballistic missiles. From 1987 onwards, US attempts to restrict the international trade in ballistic and cruise missiles, and other dual-use items and technologies, placed additional obstacles in the path of Pakistan's attempts to develop an indigenous ballistic missile capability. Confronted with these problems, Pakistan in 1989 signed a deal with China to purchase 34 solid-fuelled M-11 ballistic missiles, which can deliver a 500 kilogramme payload over 300 kilometres. Subsequently, Pakistan also negotiated the sale of approximately 12–25 liquid-fuelled *No-dong* ballistic missiles from North Korea. The *No-dong* system can apparently deliver a 700–1,000kg-payload over some 1,000–1,300km.



A Ghauri missile on show during a parade to mark Pakistan Day Photo © AP

Why diversify suppliers?

Pakistan's decision to simultaneously diversify its missile suppliers and invest in solid- and liquid-fuelled engine systems resulted from a combination of factors. The M-11s are short-range systems, and can only threaten a limited number of high-value targets in western India. In order for Pakistan to target locations in north, east, central, and southern India, longer-range ballistic missiles are necessary. In the early 1990s, Beijing's reluctance to sell longer-range missiles in the M-series – largely in response to US pressure to comply with the Missile Technology Control Regime (MTCR) – could also have prompted Pakistan to seek alternative suppliers.

Another probable factor derives from bureaucratic entrepreneurship and rivalry between the Pakistan Atomic Energy Commission (PAEC) and the Khan Research Laboratories (KRL) led, until his dismissal in 2001, by A.Q. Khan. Although the fissile material for Pakistan's early nuclear devices came from Khan's Engineering Research Laboratory, weapon design and manufacture was the result of a much larger interdisciplinary team effort. Yet Khan, to the chagrin of many working in PAEC, insinuated publicly that he was the 'father' of Pakistan's bomb. In the 1980s and 1990s, the PAEC's Directorate of Technical Development upstaged Khan's organisation by taking the lead in the design, development and testing of nuclear weapons. In addition, PAEC oversaw the M-11 acquisition programme from China. It is thus plausible that Khan used his considerable personal influence within the Pakistani government to secure support for the *No-dong* programme as a means of salvaging his organisation's declining institutional influence.

North Korean contacts

As early as 1992, Pakistani officials visited North Korea to view a *No-dong* prototype, and, in May 1993, Pakistani engineers and scientists attended the *No-dong* test-launch at Musudan-ri. When then-Pakistani prime minister Benazir Bhutto visited Pyongyang in December 1993, analysts speculated that a missile deal featured on her agenda. Subsequently, in late 1995,

Marshal Ch'oe Gwang, the former vice-chairman of North Korea's National Defence Commission, visited Pakistan and brokered a missile deal.

Details of Pakistan and North Korea's missile cooperation efforts surfaced in open source literature throughout the 1990s. In 1996, Taiwanese officials seized 15-tons of ammonium perchlorate – an oxidizing agent used in most modern solid-propellant formulas – on a freighter bound from North Korea to Pakistan's Space and Upper Atmosphere Research Committee. In 1997, Kang T'ae Yun, a North Korean diplomat based in Pakistan, who also worked for the Ch'anggwang Credit Bank and/or the Ch'anggwang Trading Company, arranged for the supply of maraging steel from the All Russian Institute of Light Alloys in Moscow to both North Korea and Pakistan. Maraging steel has applications in rocket motor casings, as well as high-speed centrifuges used in the gas-centrifuge uranium enrichment process.

Beginning in late-1997, foreign intelligence agencies began monitoring the increased frequency of cargo flights between North Korea and Pakistan. The frequency of flights increased from nearly three a month in autumn 1997 to approximately three times that number in January 1998. North Korean telemetry crews reportedly travelled on some of these flights. It has recently been alleged, by a former high-level Indian defence official, that in return Islamabad transferred nuclear materials and technology using a private airline run by a retired Pakistani air force officer with close connections to Pakistan's Inter-Services Intelligence agency (ISI).

Missile cooperation between Islamabad and Pyongyang became public when Pakistan tested a *No-dong* (renamed *Ghauri*) in April 1998. North Korean missile crews were present and apparently helped Pakistan with the test-launch. The US State Department subsequently determined that this transfer violated the MTCR and imposed sanctions on Pakistan's Khan Research Laboratories and North Korea's Ch'anggwang Trading Company. However, this did not stop missile cooperation between Islamabad and Pyongyang. In 1999, Indian custom

Pakistan and North Korea page 2

officials, acting on an intelligence tip-off, seized the North Korean ship *Ku Wol San* at Kandla in Gujarat, India. Although the ship's manifest listed water purification equipment, a search revealed that it was carrying missile components and metal casings to Pakistan. Indian officials also discovered 22 technical manuals for *Scud*-type ballistic missiles.

North Korea's transfer of complete missile systems to Pakistan triggered considerable speculation regarding what Pyongyang had gained in return. Money was an obvious reward, as missile sales became North Korea's largest foreign exchange source in the mid-1990s. However, the poor state of Pakistan's economy placed limits on the amount Islamabad could pay. Furthermore, unlike China, North Korea had no geopolitical interests in building up Pakistan's strategic capabilities against India. Some analysts believe that North Korea wanted to test its ballistic missiles in Pakistan and obtain test-data as a result. This would be especially important in view of Pyongyang's moratorium on further domestic ballistic missile tests following the *Taepo-dong* launch over Japan in August 1998.

Evidence for a missile for uranium-enrichment technology swap emerged in summer 2000 with the detection, by US intelligence, of North Korea's clandestine efforts to procure high-strength aluminium tubes to build gas-centrifuges. Based on this and other undisclosed evidence, US intelligence analysts concluded that Pakistan was the source of North Korea's uranium enrichment technology. The latest US disclosures do not detail the precise nature and extent of the technological exchanges between the two countries. But US government sources suggest that cooperation involved the exchange of scientific personnel and some highly questionable shipments to North Korea. It has been suggested that cooperation of some form between the two countries continued as recently as July–August 2002. Pakistan has refuted the allegations and insisted that there is no ongoing programme of cooperation with North Korea at present. On 26 October, Secretary of State Colin Powell said that President Pervez Musharraf had assured him that 'there is no [...] interchange taking place now of any kind ...'. When asked whether this applied to the past as well, Powell replied 'we didn't talk about the past [...] and I don't want to get into who might have done what, when, and at what point in history.'

Decision-making issues

The lack of transparency surrounding Pakistan's nuclear decision-making

institutions and procedures makes it difficult to draw definitive conclusions over whether Pakistani governments were complicit in deals with North Korea. Some analysts have suggested that civilian governments prior to 1999 may not have been aware of the activities of the nuclear and military bureaucracies; others claim that cooperation with North Korea was a clandestine operation conducted by A.Q. Khan and the KRL without formal and explicit authorisation from Pakistani governmental authorities. Still, there is sufficient information available to make some plausible suppositions about the nature of decision-making.

Pakistan's nuclear weapons programme has been closely coordinated and supervised by the military ever since their 1977 overthrow of Zulfikar Ali Bhutto's civilian regime. After the transition from military to democratic rule in December 1988, power was shared by a triumvirate comprising the president, the army chief and the prime minister. Although there is some evidence to suggest that civilian prime ministers might have been unaware of the minutiae of the nuclear weapons programme, they were certainly privy to key decisions and informed of important developments. Prior to the creation of a national command authority in the late 1990s, decisions regarding nuclear weapons and related strategic programmes were probably made by the 'Development Control Committee' (DCC) or by its equivalent.

The suggestion that Khan and the KRL worked out a deal with North Korea independent of government seems implausible. Firstly, although the nuclear establishment enjoys much internal autonomy in decision-making, nuclear scientists are subject to supervision by the national command authority. Secondly, a technical, financial, and strategic evaluation was likely to have preceded the decision to acquire the *No-dong* – military organisations are unlikely to make decisions concerning the acquisition of nuclear strike systems lightly. Thirdly, any decision to transfer nuclear weapons-related technologies would have grave international ramifications. It is difficult to imagine how Khan could have made such a momentous decision independently and without the benefit of even a limited high-level debate in the Pakistani government.

Another theory is that North Korea could have recruited Pakistani nuclear scientists without Islamabad's knowledge or approval. In the early 1990s, North Korea nearly succeeded in recruiting Russian missile scientists and engineers with competitive salary offers. However, Pakistan's nuclear scientists are relatively

well compensated, and there are few if any ideological grounds on which Pakistani scientists might be recruited to the North Korean cause.

On balance, it seems plausible that the Pakistani military and KRL would have been complicit in the gas centrifuge-for-missile deal with Pyongyang. Their decision is also likely to have had the tacit, if not formal approval, of the DCC or its equivalent, the prime minister, or, in the absence of a civilian government, the president. However, if the military reached a decision independently, this would imply that any assurances on proliferation issues made by Pakistan's civilian leaders and diplomats would lack final authority. This interpretation has reopened a debate on the issue of whether Islamabad might transfer nuclear and missile technologies to wealthy Islamic states in the Persian Gulf, especially if Iran were to acquire nuclear weapons.

US responses

Although Powell has repeated Musharraf's refutation of alleged Pakistan–North Korea links, 25 November saw the secretary say that he had made it clear to the Pakistani leader that 'any sort of contact between Pakistan and North Korea [...] would be improper, inappropriate, and would have consequences [as yet unspecified]'. Nonetheless, despite Pakistan's breach of non-proliferation norms, the US has several reasons to avoid the traditional sanctions-based approach in seeking to modify Pakistan's behaviour. If Islamabad's assertion that no cooperation is occurring at present is true, then nothing would be achieved by applying sanctions retroactively. Furthermore, Pakistani nuclear and missile entities, including the KRL, are still subject to technology denials by the US Department of Commerce. Hence, additional sanctions would be symbolic but superfluous. The thinking among senior administration officials is that although sanctions impose costs on the targeted state, the targeting state also loses leverage and influence. The Bush administration's approach of engaging Pakistan is premised on the assumption that Pakistan's compliance with non-proliferation norms and regulations can only be secured if Islamabad is convinced that the positive sum of its ties with the US outweighs any conceivable strategic and economic advantages that might accrue from the proliferation of WMD technologies. Nonetheless, Islamabad's alleged links with Pyongyang will only serve to make many in Washington highly suspicious of Pakistan's intentions, notwithstanding its current position as a valuable ally in the 'war on terror'. ●