A SELECTIVE, ANNOTATED BIBLIOGRAPHY ON CURRENT SOUTH ASIAN ISSUES

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This bibliography provides selective annotations of open-source material on two current issues: nuclear developments in South Asia, and tactics and organization of Afghan resistance groups. The monthly bibliography incorporates serials and monographs arranged alphabetically by author and title within each section.
PREFACE

This bibliography provides selective annotations of open-source material on two current issues:

-- nuclear developments in South Asia, and
-- tactics and organization of the Afghan resistance

The bibliography incorporates serials and monographs received in the previous month and is part of a continuing series on the above subjects.

Entries within each topic are arranged alphabetically by author or title. Call numbers for materials available in the Library of Congress are included to facilitate recovery of works cited.
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1. NUCLEAR DEVELOPMENTS IN SOUTH ASIA
GLOSSARY OF TERMS

AEMC  The Atomic Energy Minerals Center at Lahore is responsible for finding and recovering uranium ore, thereby filling a vital need stemming from boycotts of Pakistan by international nuclear fuel suppliers.

BARC  Bhabha Atomic Research Centre is located in north Bombay and is India's facility for research in and development of nuclear technology.

CHASHNUPP  Pakistan's Chashma Nuclear Power Plant, a projected 900-megawatt facility in Mianwali District, Punjab, was sanctioned in 1982 in order to create electrical power through light-water technology.

Cirus  A Candu-type Canadian-built plant located at BARC, Cirus was commissioned in 1960. India reprocessed spent fuel from Cirus to make the plutonium for its 1974 "peaceful nuclear explosion;" Cirus has a capacity of 40 megawatts.

Dhruva  One of the world's few high-flux reactors, Dhruva, which went critical in August 1985, is solely the product of Indian research and production, and therefore, falls completely outside IAEA safeguards. Dhruva shares facilities with Cirus, its neighbor in the BARC, has a 100-megawatt capacity, and can produce 30 kg of plutonium annually.

IAEA  International Atomic Energy Agency (United Nations)

Kalpakkam  This Tamil Nadu town is the site of the Indira Gandhi Atomic Research Center (formerly MAPP) and gives its name to a 40-megawatt fast-breeder reactor which went critical in August 1985 using plutonium-uranium carbide fuel.
<table>
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<tr>
<th><strong>KANUPP</strong></th>
<th>Karachi Nuclear Power Plant, a 125-megawatt reactor, was supplied by Canada on a turnkey basis and became operational in 1972.</th>
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<td><strong>MAPP-1</strong></td>
<td>Madras Atomic Power Project's first Candu-type 235-megawatt unit was commissioned in January 1984. The center is located at Kalpakkam, Tamil Nadu, and was produced completely by Indian research and technology; consequently, its units and the plutonium they produce fall outside IAEA inspection safeguards. MAPP units are intended to provide electricity for Madras. In October 1985, MAPP was renamed the Indira Gandhi Atomic Research Center, but new names for individual plants have not been made public.</td>
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<tr>
<td><strong>MAPP-2</strong></td>
<td>The second unit at Madras Atomic Power Project is also a Candu-type 235-megawatt plutonium and heavy-water reactor. MAPP-2 went critical in August 1985 and was commissioned in October of the same year.</td>
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<td><strong>NPT</strong></td>
<td>The Nuclear Nonproliferation Treaty was ratified by the UN General Assembly in 1968. India and Pakistan contend that the NPT discriminates against nonnuclear states, but Pakistan has repeatedly offered to sign if India will do so simultaneously. In the UNGA, Islamabad voted in favor of the NPT.</td>
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<tr>
<td><strong>PAEC</strong></td>
<td>Pakistan Atomic Energy Commission</td>
</tr>
<tr>
<td><strong>PINSTECH</strong></td>
<td>Pakistan Institute of Nuclear Science Technology, the site of a US-supplied 5-megawatt &quot;swimming pool&quot;-type reactor installed in the 1960s</td>
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<td><strong>Tarapur</strong></td>
<td>The Tarapur nuclear power plant, located near Bombay, was built by the United States. It has a capacity of 600 megawatts and can annually produce 50 to 80 kg of plutonium. Tarapur and its products come under IAEA inspection safeguards.</td>
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CITATIONS AND ABSTRACTS
"Bhabha Atomic Research Centre Transfer of Technical Know-how." Patriot (New Delhi), 24 May 1986, p. 3.

The Bhabha Atomic Research Centre (BARC) of the Indian Department of Atomic Energy is seeking technology transfer for the manufacture of a number of instruments and monitoring equipment. These devices include nitrogen oxide monitors, sulphur dioxide monitors, infrared carbon monoxide monitors, carbon monoxide monitors for catalytic oxidation, and ozone generators.

Chandrasekaran, E.S. "Capability to Meet Exacting Demands of Nuclear Components." Hindu (Madras), 16 December 1985, p. 23.

For the past decade and a half, Bharat Heavy Electricals Limited (BHEL) has been closely involved with New Delhi's atomic power program through the manufacture of major components for India's nuclear reactors. These components have included reactor headers, steam generators, standby coolers, and bleed condensers for MAPP-1 and 2. In addition, BHEL manufactured the intermediate heat exchangers, steam generators, sodium inlet/outlet pipes, straight, bent and Y-shaped piping and reactor vessel shells for the fast breeder test reactor (FBTR) at Kalpakkam. BHEL also has been entrusted with the design of innovative steam generators and reactor headers for the new Narora Atomic Power Plant.


Describes the technical specifications for India's first fast breeder reactor (FBTR), which uses plutonium-uranium carbide as fuel. The Indian facility is based on a French design, but, whereas the French installation uses a mix of plutonium oxide and highly enriched uranium oxide as fuel, the Indian FBTR has been modified to accept the mixed carbide fuel of domestic design which, at the same time, eliminates the need for enriched uranium.
"France to Supply Nuclear Components to India." Hindu (Madras), 20 May 1986, p. 9.

A French firm, Compagnie Francaise de Forge et Fonderies, will provide components for the primary circuits of atomic power plants in India. These components will include pumps, valves, nozzles, casings, turbine rotors, engine parts and non-magnetic rings for turbine generators. The Indian order is intended for the new power reactors to be built in Karnataka and Gujarat.


India's Fast Breeder Test Reactor (FBTR) at Kalpakkam was constructed on a French design, but modifications were made to permit the Indian facility to use carbides of uranium and plutonium as fuels, instead of oxides of the two elements in the French model. All major components of the FBTR were manufactured domestically in India. This includes such vital assemblies as the reactor vessel, the steam generators, the intermediate heat exchangers, the turbo generators, the sodium pumps and the control rod dry mechanisms.


In the wake of the nuclear accident at Chernobyl in the USSR, a leading scientist in New Delhi gives assurances that a similar mishap cannot occur with Indian atomic reactors. The expert notes that unlike Chernobyl, Indian plants do not use graphite as a moderator, and have secondary containment safety features as well. These features include double-walled containment domes, filters in the annular space between the two walls, a vapor suppression pool at the bottom of the primary container, air coolers for post-accident depressurization and the automatic containment of radioactivity through isolation valves. At the Tarapur reactors, there is a dry well and
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steel containment vessel connected with the vapor suppression pool to bring down the pressure in the reactor building. At the Rajasthan reactors, there is a sprinkler and water spray system to keep the inside pressure below the tolerance of the reactor building. Pressurized heavy water reactors of the type used in India also have a relatively low power density. This means the energy that they produce in ratio to the mass or volume of the core is relatively low and that the facilities consequently are somewhat safer.

"No Option But To Develop N. Technology: Junejo." 
Muslim (Islamabad), 27 April 1986, p. 1.

Speaking at the inauguration of five additional power-generating units at the Guddu Thermal Power Station, PM M.K. Junejo declares that Pakistan as an independent, honorable, self-respecting, and dignified nation has no need to give repeated assurances concerning its peaceful nuclear program. The Pakistani leader notes that Islamabad stands unequivocally for the peaceful uses of nuclear technology and adds that he hopes Pakistan's friends, such as China and the United States, will continue to help his country in the field of such technology.

"Nuclear Power Board Chairman Speaks to Engineers." Telegraph (Calcutta), 15 March 1986, p. 1. In JPRS-TND-86-010, 19 May 1986, p. 44.

Dr. M.R. Srinivasan, chairman of the Indian Nuclear Power Board, declares that under the nation's fifteen-year nuclear power plan, India will have an installed capacity of 10,000 MW in atomic power plants by the year 2000. This total capacity will be generated by 12 reactors of 235-MW and 10 of 500 MW, in addition to the facilities already in the planning stages. Construction work for India's first 500-MW fast breeder reactor will begin in 1987, after the operation of the fast breeder test reactor at Kalpakkam is fully evaluated.

Responding to questions in the Lok Sabha, Minister of State for Atomic Energy Shivraj V. Patil declares that India's target for the generation of nuclear power is 10,000 MW by the year 2000. He adds that, in addition to ongoing projects, India, under its seventh development plan, will erect two atomic power stations of 235-MW each at Kaiga in Karnataka State and will expand the Rawatbhatta facility in Rajasthan State.


There is little doubt that Pakistan now has the ability to manufacture an atomic bomb, but there is equal doubt that Islamabad will exercise this option in the near future, unless New Delhi pursues a nuclear-armaments program of its own. The breakthrough that permitted Pakistan to match India's achievements in nuclear development was the erection of the uranium-enrichment facility that began operation near Kahuta in 1984. Ostensibly, the purpose of the Kahuta installation is to manufacture fuel for Pakistan's light-water reactors of which eight are projected for operation by the year 2000 to alleviate the country's energy shortage. Light-water reactors require as fuel uranium that has been enriched to contain at least three percent of the fissile uranium isotope U-235. The enrichment process at Kahuta has been carried out by a relatively new centrifuge technology that was assembled from components obtained by Pakistan on the open market. According to Dr. Abdul Qader Khan, the father of Pakistan's nuclear program, the enrichment process is the most difficult part of the entire nuclear fuel cycle, and its mastery by Pakistan puts Islamabad ahead of New Delhi in this sophisticated technology. Khan also notes that once enrichment to three percent is achieved, there are no technical obstacles to further enriching the U-235 isotope to the 90 percent purity required for the manufacture of an atomic bomb. Khan emphasises, however, that Pakistan's enrichment program is solely for peaceful purposes and that Islamabad has no intent of making nuclear weapons. In the meantime, Pakistan has repeated its offer to sign
the Non-Proliferation Treaty, accept safeguards on all its nuclear facilities, agree to inspections, renounce nuclear weapons, and agree to a nuclear-free zone in South Asia, if India will do the same. After subsequent negotiations, New Delhi and Islamabad have agreed not to attack each other's nuclear facilities. The Indian nuclear program is ahead of Pakistan's in all areas except enrichment, but there is a perception by both sides that a sort of parity has been achieved, and this may augur well for the stability of South Asia.

Ramanna, Raja. *A 15-Year Programme for Nuclear Power in India*  

The purpose of India's 15-year nuclear power program is the generation of electricity in accordance with the nation's projected need by the year 2000. The plan anticipates the erection of 12 more atomic reactors of 235 MW each, and 10 reactors of 500 MW. The plants will be designed and constructed by domestic means exclusively, without any foreign input. Designs for the 500 MW facilities are expected to be ready in 1987, with the first plants constructed and ready to begin operation by 1995. India's nuclear plan also envisages increased exploration and processing of uranium ores and minerals to yield the 1,800 tons of uranium oxide needed annually for the operation of the nuclear installations. The plan also calls for the stepped-up production of heavy water to about 1,530 tons a year to meet reactor requirements. To accommodate radioactive wastes, three spent-fuel reprocessing plants, each with a capacity of 400 tons a year, and four waste immobilization plants with interim storage facilities will be constructed in the next decade and a half. When interment becomes necessary by the end of the century, final disposal of the solidified waste will be in deep subterranean caverns or tunnels.
2. TACTICS AND ORGANIZATION OF THE AFGHAN RESISTANCE
GLOSSARY OF TERMS

Commander  A resistance fighter who is recognized as a military leader in local or regional areas of conflict; some commanders are respected outside their own regions, but there is not yet a coordinated, nationwide, insurgent command in Afghanistan. The title commander is the only honorific or rank recognized by the resistance movement.

Dushmani  (singular: dushman) Soviet pejorative term for Afghan insurgents; it means "bandit" and originated during the 1930s Central Asia resistance.

DRA  The Democratic Republic of Afghanistan was established as the result of a coup led by Mohammad Nur Taraki and Hafizullah Amin in April 1978. Deteriorating internal security led to military intervention by the Soviet Union in December 1979, and Amin was killed by the invading troops. The Soviet invasion transformed armed resistance toward the modernistic but arbitrary reforms of Taraki and Amin into a war of national liberation.

KHAD  DRA intelligence service whose operations are entirely directed by its many Soviet KGB advisors. The acronym stands for Khedmat-Etalat-e-Daulat (State Information Service). KHAD received ministerial rank in January 1986.

Mujahideen  (singular: mujahid) This Islamic term means "holy warrior," but it is most often used as a name for Afghanistan's resistance fighters, who consider their campaign a jihad (holy war) to drive unbelievers from their country.

Spetznaz  Soviet special warfare troops under the GRU (Military Intelligence Directorate) of the Soviet Ministry of Defense. These highly mobile units are deployed throughout Afghanistan for operations which require more skill or loyalty than is commonly displayed by Soviet or DRA troops.
CITATIONS AND ABSTRACTS

Afghan rebel groups have succeeded in reopening some of their resupply routes closed by the Soviet offensive in Paktia Province last month. Resistance fighters also report they are now reoccupying their base camp at Jawar that had been overrun earlier by Soviet and DRA forces. The Soviets still maintain a 2,000-man garrison at Khowst, presently surrounded by the resistance. A new Soviet offensive to break through the guerrilla encirclement around the besieged city and link up with DRA forces at Gardez to the west is believed to be imminent.


Insurgent leaders around Kandahar, Afghanistan's second largest city, concede they are feeling the effects of an endless war of attrition. Medical supplies are reportedly non-existent, and the mujahideen lack money to hire trucks to transport their wounded to Pakistani hospitals. Food is short and the guerrillas have been forced to sell captured weapons to eat and to procure basic logistical items such as blankets. Similar complaints have come from Herat in northwestern Afghanistan and from the Panjshir Valley, north of Kabul. European journalists report that throughout Afghanistan, insurgent forces lack an air defense capability to cope with Soviet aircraft and stand-off weapons with sufficient range to reach beyond minefields and bombard DRA or Soviet installations.


In spite of superior Soviet military force, Afghan insurgents have been able to hold their own in over six years of fighting. The average guerrilla possesses great courage, stamina, and daring. He is driven by a strict code of honor, demanding implacable vengeance if it is violated. Loyalty is to the family and tribe, rather than
to a government or nation. Initial resistance to the Soviets was based on traditional Afghan warfare with little regard for the complexities of fighting a modern, well-armed foe. Tribal groups engaging the Soviets in combat fought without differentiation of battlefield functions in their ranks. Over the years, however, better mujahideen organization has developed. Some provinces have an overall military leader who divides his region into sector commands, which in turn are subdivided into tactical areas of responsibility assigned to fighting units of 25-35 men. These combatants have specialized battlefield functions such as mortar crewman, machinegunner, or antitank gunner. Mujahideen tactics emphasize road ambushes by units of 30-40 men. These ambushes are emplaced near bridges that are destroyed to slow a convoy, or in defiles where the trapped vehicles cannot deploy. In many cases, the mujahideen will permit the advance guard of a convoy to pass unscathed and activate the ambush only when the main body passes. Despite their combativeness and knowledge of the terrain, however, insurgents continue to face severe handicaps, such as a continuous shortage of food, weapons and supplies, poor training, and lack of tactical coordination and planning.


Article deplores the lack of unity and coordination that continues to plague the Afghan resistance. The author notes that when mujahideen clear the enemy from an area they neither establish a unified local administration, nor seek to expand their liberated zone, but are content to remain in place. Khalil pleads with the insurgents that they "must open their eyes to the bitter reality that nothing can be achieved unless there is a unified, political front and a coordinated military command."

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French commentator on Afghanistan Olivier Roy opines that in view of the tactical stalemate in the embattled country, the Soviet Union has four options. First, it could initiate a destructive campaign of chemical warfare. However, this would entail a loss of credibility at exactly the time Moscow wishes to project an image of moderation in the face of the US Strategic Defense Initiative. The Kremlin also could escalate its military commitment in Afghanistan, but this would have to be at the expense of its strategic priorities elsewhere, namely against NATO and China. Third, it could attack Pakistan in force, with the intent of dismembering the country and putting a stop once and for all to mujahideen supply routes and safe havens, but such a military undertaking might cause major strategic realignments in South Asia. Last, Moscow could negotiate, in a serious or perfunctory fashion, to gain recognition and legitimacy for the Kabul regime and to stop external assistance to the guerrillas.


Herat, once the third largest city in Afghanistan, and former capital of the ancient Timurid Empire, is now a devastated wasteland. Guerrillas of the fundamentalist Jamiaat-Islami occupy cellars, shacks, and single habitable rooms amid the ruins. Food is scarce, and the Herat plain, formerly a breadbasket for the region, is deserted and the land lies fallow. The city itself comes under daily aerial reconnaissance from the Soviet airbase at Mir Daoud, 20 miles south of Herat, and the deserted plain around the urban area is considered a free-fire zone that is frequently subjected to indiscriminate rocket attacks from the nearby airbase. Mujahideen commanders estimate that more than 100,000 persons have died in Herat since the Saur Revolution.

Peck, Robert A. "The Situation in Afghanistan." Statement by the Deputy Assistant Secretary, Bureau of Near Eastern and South Asia Affairs, Department of State, before the
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Subcommittee on Asia and Pacific Affairs, House Foreign Affairs Committee, 1 May 1986, 16 pp.

Testifying before a congressional subcommittee, the author, a senior Department of State official, reviews Afghan insurgent operations during the past year. He notes that in the Panjshir Valley, the key DRA garrison at Peshghur was overwhelmed and captured by combatants under guerrilla commander Ahmad Shah Massoud. In Kunar Province, spirited guerrilla resistance caused substantial casualties to a Soviet/DRA task force attempting to lift the siege of Barikot. In Paktia Province, Peck concedes a determined Soviet/DRA offensive overran the major guerrilla base at Jawar, but states the insurgents virtually annihilated the first assault wave composed of an elite DRA unit and reoccupied the area immediately after the withdrawal of the Kabul regime troops. Peck asserts that the largest-scale rebel operation was the tightening of the insurgent ring around Khowst in Paktia Province. Armored relief columns repeatedly failed to break through to reach the besieged defenders, until the Soviets were left with no option but to mount an airborne operation to reinforce the city and prevent its fall to the insurgents. In spite of such efforts, the siege of Khowst has continued to the present time. In the midst of heavy military activity by both sides, the resistance gradually is forming alliances, and a new Afghan nationalism forged on the battlefields of the war-ravaged country is coming of age.


In the province of Nangarhar bordering Pakistan, the resistance in one of the provincial districts comprises 800 men fighting for the fundamentalist Hezb-Islami organization. The guerrilla commander states that his forces have encountered no opposition from the Pushtun Afridi tribe supposedly coopted by the DRA in the border region. The diary of a slain Kabul regime officer concedes heavy casualties and considerable apathy and desertion among the rank-and-file DRA combatants fighting the mujahideen.

A Western correspondent returning from Kandahar reports that the city is a no-man's land where DRA forces are confined to a few static defense positions, and where mujahideen roam at will in broad daylight amid the widespread urban devastation. Soviet forces in the area are confined to their airbase at Kandahar airport from which they sally forth periodically to conduct bombing, supply and commando missions.


In the resistance stronghold of the Panjshir Valley, insurgent leader Ahmed Shah Massoud has organized his combatants into squads of nine men. Each squad is armed with six AK-47 assault rifles, three Lee-Enfield .303 caliber rifles for sniping purposes, and one RPG-7 antitank rocket launcher. Such squads form Massoud's basic ambush units. Three squads are grouped into a platoon headed by a commander and assistant commander, and reinforced by a light 7.62-mm light machine gun. Three Platoons of 30 men each, with a command group of four personnel and two medics, form a company which is reinforced by a 12.7-mm DShK heavy machine gun, a 40-mm AGS-17 automatic grenade launcher, and a 75-mm recoilless rifle. The guerrillas also have captured Soviet mortars in their inventory, but use them against line-of-sight targets only, because they lack maps, compasses, and a knowledge of procedures to plan concentrations of indirect fire. In past years, there has been no shortage of arms in the Panjshir. Caravans of pack animals loaded with weapons reached the area almost daily. Saudi Arabia provided the funds for the armaments which were purchased in Darra, Pakistan. Money from the United States also was used to pay for Soviet weapons from Egypt, which were then shipped to Karachi and transported overland to the Afghan border.