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RAM RAJAN SUBRAMANIAN

Nuclear Proliferation in South Asia: Security in the 1980s

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South Asia as a region can no longer be de-linked from developments in South West Asia and the Persian Gulf because of the strategic significance of Pakistan. Pakistan's security therefore will be a crucial determinant of the stability of the region. India is a medium power with the capability to manufacture nuclear weapons and even deliver them by sophisticated aircraft such as the Jaguar and MiG-23. Pakistan is attempting to attain a nuclear weapons capability, which according to some western intelligence sources will be achieved sometime in the 1980s. The Reagan Administration in the United States is choosing to ignore Islamabad's nuclear weapons capability owing to its strategy for the Persian Gulf.

Dr Subramanian argues that Pakistani acquisition of even an 'evanescent' capability will force Indian re-thinking. He examines scenarios for atomic warfare in the region and proposes that an effective command, control and communications (C³) should be built to deter nuclear war on the sub-continent.

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INTRODUCTION

In the 1980s the security of the South Asian region can no longer be viewed in isolation but must be linked to the developments that are taking place in contiguous regions like the Persian Gulf and Southwest Asia. Pakistan is the bridge between these regions and South Asia. After the Soviet intervention in Afghanistan in late December 1979, with tens of thousands of troops, the security of the region has become intertwined with the military postures that are being adopted by the two superpowers.

With the advent of the Reagan Administration in the United States in 1981, American foreign policy has taken an anti-Soviet stance, one that is reminiscent of the Dullesian policies of the fifties. Such a stance is not in conformity with India's foreign policy because of New Delhi's special ties with Moscow. Pakistan's strategic proximity to the Persian Gulf, on the other hand, makes Washington view its role as one that is vital for stemming further Soviet advances into the Persian Gulf. As a result, the military leadership in Islamabad is able to procure sophisticated military hardware in spite of its pursuit of both enrichment and reprocessing technology for the production of nuclear weapons (Sinha and Subramanian 1980). The Symington-Glenn Amendment to the Foreign Assistance Act forbids American military credit and economic aid to countries embarking on development of a nuclear weapons capability. US Senator Alan Cranston has charged the Reagan Administration with deliberately withholding facts from the US Congress about Pakistan's nuclear weapons capabilities.

After the visit of US Assistant Secretary of State, James Buckley, to Islamabad in June and September 1981, a five-year \$US3.2 billion aid package was finalised. This package contains provision for the transfer of high performance air superiority fighters, the F-16s, to Pakistan. The introduction of these aircraft into the inventory of the Pakistan Air Force (PAF) will dramatically alter its capabilities to deliver nuclear weapons. In view of Pakistan's decision to forge ahead with a nuclear weapons capability, certain US Congressmen like Stephen Solarz and Clement Zablocki have demanded that a 'cut off' clause be imposed on the package deal, so that all deliveries cease should Pakistan detonate a nuclear device (see Aviation Week & Space Technology, 21 September 1981). This proposal was approved by the US Senate on 22 October 1981 and awaits approval from the House of Representatives.

After Israel's successful raid with F-16s on Iraq's nuclear reactor OSIRAK on 6 June 1981 scenarios of similar strikes by the

PAF on India's nuclear installations are visualised by New Delhi's defence planners. If the testimony of Mr Van Maribod of the US Department of Defense to the US Congress in September this year is any indicator, the F-16s which will be delivered to Pakistan will not have the necessary bombing racks and wiring pylons; thus they will be rendered useless for nuclear strikes (see Aviation Week & Space Technology, 21 September 1981).

Whether the F-16s that will eventually arrive in Pakistan are capable of making nuclear strikes or not, it must be pointed out that the Mirage Vs which are presently in the PAF can, with aerial refuelling by C-130s, increase their range so that vital nuclear installations near Bombay will become vulnerable to nuclear strikes (Khalilzad 1980).

When India detonated a nuclear device in May 1974 it produced two immediate effects, one regional and the other international. Regionally an 'accelerator' effect was created on Pakistan's nuclear ambitions. Internationally, a decision was taken in November 1974 by a select group of exporters of nuclear technology to form a nuclear suppliers' group (NSG) based in London. India's detonation was seen to pave the way for nuclear diffusion in the Indo-Pakistan-Iran region. One American analyst (Dunn 1977: 197-212) went so far as to see a proliferation 'link' in this region. After the political upheavals in Iran and the execution of Bhutto in Pakistan, association of any deterministic trends in this region can at best turn out to be myopic. It was Bhutto who, as early as 1965, had threatened 'to eat leaves and grass' and 'even go hungry' to get the bomb if India got one, and in 1969 he expressed views in favour of an independent Pakistani nuclear deterrent (Bhutto 1969).

Bhutto is believed to have assembled a team of competent scientists and engineers to evolve the blueprints of a Pakistani bomb (Tibenham 1980: 96-100). In late 1973, a few months before Indian scientists were to detonate a nuclear device, Bhutto began negotiations with France for the purchase of a large scale reprocessing plant worth \$US150 million. However, his verbal threats about getting the bomb were not matched by any equivalent degree of Pakistani technological prowess. As a result his objective could not be realised before he was ousted from office in July 1977. The military leadership of President Zia-ul-Haq has not diminished in any way the efforts of Bhutto to produce the bomb. It is for this reason that it is hard to attach too much credence to Bhutto's claim that he was ousted from power by external forces, especially the Americans, because of his intransigence on the nuclear issue. One Pakistani analyst has brought to

light the fact that some senior officers in the military were reported to have been unhappy over Bhutto's missing an opportunity to obtain one hundred A-7s in exchange for foregoing the processing plant, an offer Kissinger made in August 1976 (Tahir Kheli 1978: 368-69). It remains unclear in today's context whether the 'trade off' a la Kissinger that is being attempted by Alexander Haig and James Buckley of the US State Department through the F-16s, can 'whet Pakistan's nuclear appetite', to use Haig's phraseology. This point will be discussed further in the section on Management of Nuclear Proliferation in South Asia.

Unlike India, Pakistan has a military establishment that also makes its major political decisions and hence, whatever opposition might have come from civilian elements with regard to the production of nuclear weapons is absent. However, a well known American specialist on South Asia has observed 'nuclear weapons are hardly attractive to the professional Pakistani officer and pressure for their acquisition has always come from civilians' (Cohen 1981: 32).

In India, the demarcation between the civilian and the military establishments is very marked and, interestingly enough, the Indian military is one of the few in the world that seems to downplay the role of nuclear weapons. This attitude, however, could dramatically change if Islamabad were to denote a nuclear device, because of the intense pressures that living with a second nuclear weapons state (NWS) in Asia would cause in New Delhi. In today's context, the possibility that nuclear installations in Kota (Rajasthan), Trombay and Tarapur (Maharashtra) may be attacked with either conventional or nuclear bombs can only prompt Indian defence planners eventually to integrate nuclear weapons into their protective framework.

If, in the 1970s, India was regarded as the cause and Pakistan the effect of nuclear weapons proliferation, the trend in the 1980s seems to be towards reversal of that order. After its May 1974 detonation, India's nuclear programme slowed down considerably as a result of the pressures brought to bear on it by the United States and Canada, two active members of the NSG (Subramanian 1978). The tenure of Morarji Desai as Prime Minister put the 'nuclear explosive' option back into the basement. Prime Minister Indira Gandhi has said in an interview with the Melbourne Age on 18 September 1981, 'India would consider peaceful nuclear explosions (PNEs), but would not make nuclear weapons even if Pakistan did'. Such a policy statement may be a mere political ploy to defuse the eventual policy decision to co-ordinate the activities of the Bhabha Atomic Research Centre (BARC) in Trombay, and the various

departments of the Defence Research and Development Organisation (DRDO) which are presently unco-ordinated. Pakistan's nuclear posture in the 1980s could spur on precisely such a co-ordination.

At another level, it must be pointed out that both India and Pakistan have in existence a space programme directly responsible to their respective heads of State. The Indian Space Research Organisation (ISRO), however, has made several strides ahead of Pakistan's Space and Upper Atmosphere Research Organisation (SUPARO). ISRO has made two launches with a 40kg payload borne by the indigenously fabricated SLV-3 solid fuelled booster (see Aviation Week & Space Technology 25 August 1980 and 11 May 1981). The first launch in August 1980 was a complete success and carried the payload into near earth orbit. Whilst the second in May 1981 was only a partial success, because ignition failed in the third stage, India's capability to convert its SLV series of rocket boosters into missiles of IRBM and MRBM range has often been stressed both within and outside the country (Singh 1980). However, to date there is very little to suggest that the Indian military has expressed any desire for the manufacture of such types of missiles. Rather, the emphasis seems to be more on conventional weapons modernisation through procurement from various sources abroad, but more on this point later.

India and Pakistan have been to war four times (in 1948, April 1965, September 1965 and 1971) and on each occasion only conventional weapons have been used. After India's detonation of a nuclear device in May 1974 and Pakistan's attempts to match it, the possibility that nuclear weapons may enter the theatre of war has become very real. Pakistan's nuclear weapons programme is presently plagued by the lack of an efficient industrial infrastructure (Cheema 1980: 195-6) and the pace at which its nuclear weapons programme will proceed will be determined by the availability of vital materials, such as steel, etc.

India, under the present tenure of Mrs Gandhi as Prime Minister, is modernising its defence forces considerably. The process of diversification of sources for the supply of arms started by the Janata Government in 1977 has been continued by the present Government. At the same time the special Indian military relationship with the Soviet Union (Menon 1980) has in no ways been diluted and the \$US1.6 billion arms deal signed with the USSR in May 1980 bears ample testimony to that state of affairs. The leadership in Islamabad has often viewed with grave suspicion this special connection between India and the Soviet Union. The Soviet

intervention in Afghanistan has only succeeded in further increasing these suspicions in Islamabad. There are, however, a number of Pakistanis who have come to the realisation that, following the Soviet intervention in Afghanistan, rational Indian self-interest dictates the need for a relatively strong Pakistan to act as a buffer between New Delhi and Moscow (Fukuyama 1980: 8). However, these Pakistanis are not the ones who make the major decisions in foreign policy.

Agha Shahi, the Foreign Affairs Minister of Pakistan, in an interview with *The Times*, London 1 March 1981 (Tiwari 1981), observed that there was no point in a relationship with the USA which did not increase his nation's security. Shahi has viewed Pakistan's security in terms of the amount of American arms and other military hardware that can be committed to Islamabad's protection vis-a-vis the Soviet Union. At a seminar held under the auspices of the Council of Pakistan's Newspapers' Editors in Lahore on 30 June 1981 Agha Shahi made it clear that:

We told Buckley that our programme [nuclear] is only for peaceful purposes, that we have made a joint statement to this effect with the Indian Foreign Minister and we are fully aware of the concern of the United States over our atomic energy programme which we think to be baseless, unwarranted, unjustified. But we understand and we have taken note of this concern. So if we decide to carry out an explosion then we would be prepared to forego this programme . . . But we have given no undertaking to Mr Buckley about explosion.

US Assistant Secretary of State James Buckley, after his most recent visit to Islamabad, testified to the US House of Representatives on 16 September 1981 that President Zia-ul-Haq, though refusing to rule out peaceful nuclear explosions (PNEs), had given him an undertaking that Pakistan would not manufacture nuclear weapons (see *Aviation Week & Space Technology*, 21 September 1981: 23). In the House of Representatives, Clement Zablocki, Chairman of the House Committee on Foreign Affairs, has strongly opposed the F-16 component of the military aid package. One can discern through the various testimonies that have been given to the panel, that the mood in the House is that the Reagan Administration is first to 'consider the shipment of a limited number of F-16s, approximately 20, and then agree to delivery of the export version of either the F-5G, the 'Tigershark' aircraft or the F-5E 'Tiger'. Pakistan, however, has made the F-16 a prestige issue and its insistence on this aircraft could cause

President Reagan to use the 'waiver' in the Symington-Glenn Amendment, if the impediment posed by Pakistan's nuclear weapons programme is to be overcome.

The US Department of Defense has asked two of its NATO allies, the Netherlands and Belgium, for a small number of F-16s for delivery to the US Air Force (USAF). The unusual request, according to informed sources, is tied to an effort to hasten delivery of the aircraft to Pakistan (see Interavia Air Letter, 14 September 1981). A team of officials from the manufacturers, General Dynamics, is also to visit Pakistan to help establish maintenance facilities for these aircraft.

A former analyst of the RAND Corporation, Francis Fukuyama, who is presently an advisor to the US State Department on South and Southwest Asia, after he undertook a trip to Pakistan between 25 May and 5 June 1980, observed that

Pakistan will be of increasing importance to US Security interests in the Persian Gulf/South Asia region in the early 1980s, because of its proximity to the Gulf . . . The United States currently faces a critical policy with regard to South Asia. It must decide whether or not to support Pakistan militarily. (Fukuyama 1980: 5)

According to Fukuyama, Pakistan faces a variety of security threats as a result of the Soviet intervention in Afghanistan. These are in order of seriousness:

- (a) Afghan and Soviet support for separatist movement amongst the Baluchi and Pathan population of Pakistan.
- (b) Soviet air and artillery strikes at refugee camps across the border.
- (c) An attempt by Soviet or Afghan forces to seize a salient of Pakistani territory in the frontier region.
- (d) A Soviet-sponsored attack by India against Pakistan.
- (e) A co-ordinated Indian-Soviet-Afghan attack designed to fragment Pakistan along ethnic lines.

How credible it is for Pakistan to deter a superpower like the USSR is an open question. The acquisition of F-16s has been justified by the Joint Staff Headquarters in Pakistan on the grounds that these aircraft would be used for any counter-air mission against the USSR. The Reagan Administration has accepted this logic in the absence of a willingness on its part to grant Pakistan its original demand that the 1959 bilateral treaty be upgraded into a full-fledged security agreement. If such an agreement had been forthcoming, then the US contention that the F-16s are intended to

deter a Soviet thrust into Pakistan, would have been credible. For Pakistan, the F-16s have been made an issue for testing American commitment to its defence.

However, it must be pointed out that, regardless of what happens on its western borders, Pakistan's major preoccupation continues to be India (Fukuyama 1980: 4). Consequently, Pakistan's reasons for wanting military aid from the United States are geared to the Indian contingency.

At another level, it must be pointed out that Islamabad's increasing military links with friendly 'Islamic' countries in the Arab world, such as Saudi Arabia and Oman, are likely to enlarge the dimensions of threats to India, and in turn South Asia.

The directions which Pakistan's foreign policy take in the future will, therefore, be a major determinant of the security of South Asia in the 1980s. Introduction of nuclear weapons into the region will of course dramatically change the nature of conflicts in the region. Pakistan's evanescent nuclear capability can expose it to threats from adversaries, west and east of its borders. In this analysis my purpose is to examine the postures of a nuclear Pakistan faced on one hand by a global superpower, and on the other by a medium power which it regards as an adversary linked with the same superpower. What effects will nuclear weapons in this region produce? What are the effective means to manage such a proliferated region? What will be the consequences of nuclear warfare in the region? These are some of the questions to be discussed below.

Pakistan's Quest for Nuclear Technology

Pakistan's entry into the field of nuclear technology began in 1962 when the United States under the 'Atoms for Peace' programme transferred an enriched uranium research reactor. This transfer of technology in no way helped Pakistan to move towards indigenisation. If this indigenisation had occurred, future leaders in Islamabad would have been able to justify the setting up of an enrichment plant for peaceful purposes in the 1980s. When, instead, their scientists opted for a commercial reactor based on a Canadian design, using natural uranium and stationed it at the Karachi Nuclear Power Plant (KANUPP), that justification seemed weak. The Canada-Pakistan nuclear relationship, however, ended in 1976 when Canada suspended its supply obligations because of Pakistan's refusal to accept full-scope safeguards on all its nuclear installations. India's nuclear explosion based on plutonium derived from the spent fuel rods of the unsafeguarded Cirus research

reactor (supplied by Canada to India under the Atoms for Peace programme in 1954), irked Ottawa so much that it made demands for tighter safeguards on the CANDU reactor at Karachi. Since Pakistan refused to comply, Canadian aid to future nuclear programmes in Pakistan was suspended on 31 December 1976 (Sinha and Subramanian 1980: 100-101). A casualty of this decision was the Chasma Nuclear Power Plant (CHASNUPP), also a CANDU reactor moderated by heavy water. Agha Shahi has argued that the Pakistani scientists hope to convert CHASNUPP into an enriched uranium light water reactor (see Dawn, Karachi, 7 March 1981).

The year 1972, when Pakistan, under Bhutto, is reported to have decided to acquire nuclear weapons capability, pre-dates by two years India's detonation of a nuclear device, suggesting that Pakistan's intelligence information was sufficiently efficient to have had advance information about India's preparations for a nuclear test (Kapur 1980: 95). Bhutto's negotiations with France for the purchase of a large scale reprocessing plant began in late 1973 (Sinha and Subramanian 1980:95), a few months before India's detonation. Since Indian scientists had put together a small scale plutonium reprocessing plant based on the French Saint Gobain Nouvelle (SGN) design, Bhutto under the advice of Dr Munir Ahmed Khan, whom he brought from the International Atomic Energy Agency (IAEA), Vienna in 1972, tried to emulate his neighbour's modus operandi. By attempting to purchase a large scale reprocessing plant from SGN, Bhutto was also trying to reduce considerably the lead time involved.

However, India's detonation caused the nations of the industrialised world that had perfected nuclear technology to collectivise their efforts to stem the tide of proliferation and to form the nuclear suppliers' group in London. France, which had hitherto rejected both the Partial Test Ban Treaty (PTBT) of 1963 and the Non-Proliferation Treaty (NPT) of 1970 joined the NSG. As a result, the vital five per cent of French technology that would have enabled the separation of plutonium from uranium was withheld from Pakistan. Consequently, one avenue for Pakistan's quest for nuclear weapons technology was cut off, albeit temporarily, and the alternative route - enrichment technology - was pursued instead.

It remains unclear whether Bhutto also masterminded the uranium enrichment project as early as 1972. What is known is that the metallurgist Abdul Qadir Khan who worked at URENCO in the Netherlands left Pakistan in 1972 and returned in 1975. It was only in November 1978, that the British Labour Party MP Frank Allaun revealed that Pakistani agents in the UK had been trying to

procure inverters from a textile firm, Emerson Controls, which operated at the same frequency as those used by the United Kingdom Atomic Energy Authority (UKAEA). This was the first link to a Pakistani centrifuge enrichment project. Subsequent revelations by the CIA in April 1979 further confirmed the existence of an unsafeguarded enrichment plant at Kahuta, near Islamabad, under the directorship of A.Q. Khan. After the worldwide publicity given by the western media to Pakistan's subterfuge, there appeared to be a slow-down in Islamabad's quest for nuclear weapons technology. To date, Pakistan is believed to be in possession of 32 inverters and 6,200 martensitic age-hardened steel tubes, as was revealed by the enquiry conducted by the Dutch Government in 1980. However, the crucial determinant for the speed with which a nuclear explosive capability is likely to be attained is the number of centrifuges that are in operation and the status of the 'hex' plant that circulates the uranium as gas in the centrifuges. This 'hex' plant is now believed to be located at Multan, 320km south of Islamabad (Nucleonics Week, 29 July 1981).

Western estimates about the time span over which Pakistan will attain a nuclear explosive capability often vary. When reckoned in the year 1979, this capability was put anywhere from three to five years (IISS 1980:19). In September 1980, these very estimates were drastically revised when the unsafeguarded reprocessing plant, one tenth the size of the French SGN plant, located on the premises of the Pakistan Institute for Nuclear Science and Technology (PINSTECH), was also discovered by Western intelligence sources. The SGN plant was to have been built at the Chasma Barrage site on the Indus, and to have been under safeguards approved by the IAEA. Added to that, Pakistan's announcement in 1980 that it had been able to fabricate indigenously natural uranium fuel rods (see Nature, London, 18 September 1980), gave rise to speculation that it might attain a nuclear explosive capability through the production of weapons grade plutonium, instead of uranium.

Insertion of the indigenously fabricated natural uranium fuel rods into the KANUPP reactor and their rapid removal, to ensure reduced contamination due to production of plutonium 240, and the reprocessing of the spent fuel rods at the PINSTECH reprocessing plant to recover weapons grade plutonium 239 is seen by American intelligence today as a means to hasten the onset of Pakistan's nuclear weapons capability. Such a modus operandi however, is not completely foolproof as the KANUPP facility is under IAEA safeguards (in spite of Canadian termination of aid in December 1976). There are, however, reports to suggest that the officials at

IAEA are no longer in a position to vouch for the efficacy of the safeguards on KANUPP (see the International Herald Tribune, 22 September 1981).

There have been reports, based both on American and Soviet satellite reconnaissance, that Pakistan has been digging tunnels in the Cholistan desert near Multan (see map attached) in preparation for an underground nuclear test (Sinha and Subramanian 1980: 141). This was brought to light by Senator Alan Cranston of California, who has claimed that the IAEA has also confirmed his suspicions. There have been spurious reports to suggest that Pakistan may test a bomb in Turkey or China, but these lack credibility. Pakistan is in possession of the 'blastwave' technique which is used in the detonation of a plutonium device (Pickering 1979: 22-3). One can foresee a plutonium detonation sometime in the early 1980s, if Senator Cranston's reports are correct.

POSSIBLE OUTCOMES OF PAKISTAN'S NUCLEARISATION

Any prognosis of the likely outcome of proliferation in South Asia is fraught with uncertainty. Let us now analyse some of the possible outcomes:-

Bomb in the Basement Option

At Kahuta, the centrifuge facility's construction is completed and put into operation so that sufficient stocks of weapons grade uranium are stockpiled. The weapons grade material is put into a critical assembly, but the device is not detonated. In this way, maximum uncertainty is forced on India, which will in any case increase production of plutonium in its unsafeguarded facilities (the R-5 and the CIRUS reactor).

A Symbolic Nuclear Test followed by the shelving of the Pakistani Programme

The Pakistani leadership detonates a peaceful nuclear explosion sometime in the 1980s but issues a declaration that no more tests are envisaged. Next step is to reiterate the nuclear free zone (NFZ) in South Asia proposal, and call for a mutual inspection of each other's nuclear facilities. The Indian Government's present policy (and the likely policy for the future) will be to reject the NFZ in South Asia unless China is included. To date, China has

participated only in the Latin American Nuclear Free Zone (LATNFZ).

Pakistani Nuclear Test Spurs Indian Nuclear Weapons Programme

A proliferation chain in South Asia is activated. The Indian leadership faces renewed pressure to re-open the nuclear weapons option. As a result a clear political 'go' decision is made. India explicitly declares she will make nuclear weapons and also detonate a nuclear device. This causes Pakistan to stockpile increasing quantities of weapons grade uranium. India responds by increasing production of plutonium in its own unsafeguarded facilities (R-5 and CIRUS). The stage is therefore set for each of the nuclear weapons states to determine at what stage the 'cut off' in fissionable material production should occur. Considering that India has the larger nuclear establishment, Pakistan's capability to stock weapons grade material equivalent to a few atomic bombs seems unlikely to match in any degree that of India.

One Pakistani analyst has observed:

India naturally would like to prevent a decision by Pakistan to go nuclear. To this end it can respond in a variety of ways:

- (a) accelerate its own programme ensuring that India remains sufficiently ahead of Pakistan in nuclear technology to render the Pakistani threat insignificant in magnitude and defensive in nature.
- (b) improve relations with Pakistan, thereby reaching some sort of an agreement to forswear the use of nuclear weapons.

(Rizvi 1975)

IMPACT ON INDIAN DEFENCE PLANNING

The conventional armaments balance in the South Asian region has been quite stable, if not tilted in India's favour, up to the time of the Bangladesh War of December 1971. After the fiasco of that war, Pakistan renewed its efforts to seek spares and military hardware. These were sought in Iran (during the era of the Shah) and Turkey, both of whom were its alliance partners in the CENTO pact (Syed 1973). The total number of Pakistani military personnel grew by 43,000 during the period 1971-1980

despite the loss of East Pakistan. If the 90,000 prisoners-of-war who were held in India for two years after the 1971 war are also counted, the increase in Pakistan's armed forces between December 1971 and the middle of 1980 was of the order of 133,000 (see IISS, Military Balance 1980-81). The corresponding increase in the Indian Armed Forces during the same period was of the order of 84,000. The inventory of military equipment and number of military personnel in the armed forces of each of the countries is shown in Table I.

In the late seventies, the decision to modernise the Indian defence forces was taken by the transitory Janata government. Since Mrs Gandhi's second tenure as Prime Minister this process of modernisation has been accelerated.

The decision to purchase 150 Jaguar deep penetration strike aircraft (DPSA) was taken by the Janata government in October 1978. When Mrs Gandhi returned to office in January 1980 there was speculation that the decision might be reviewed and the French Mirage considered as a replacement. As yet there are no definitive indications that the Jaguar deal will be scrapped and replaced by an agreement for the licenced manufacture of the Mirage 2000. There have been reports to suggest that that part of the agreement pertaining to the manufacture within the country of the Jaguar will be terminated and replaced by one that relates to the production of aircraft of the 1990s, say the Mirage 2000 (see Milav News, London, October 1981).

However, there have been as yet no indications that the IAF has opted to look beyond an aircraft suitable for the 1990s. If the credit terms with the French Government are favourable the scales will tip in favour of the Mirage 2000. In any case, licenced manufacture of the Mirage 2000 can only start in the late 1980s, as it will only roll off the assembly line in 1984.

The Jaguar decision was but one in a series of decisions by India in the late 1970s to diversify its sources of arms supply. Ever since the United States imposed an embargo on arms sales to the sub-continent in 1965, India has been heavily dependent on the Soviet Union (Menon 1980: 7). Indo-Soviet military co-operation took strong root in 1964 after the debacle which India suffered, both psychologically and militarily, in the border war with China in October 1962. If for India the Soviet Union was a major source of arms supplies, for Pakistan it became China, whose weapons though obsolescent have been transferred in sizeable numbers to Islamabad.

After a gap of nearly sixteen years the Indian Government of Mrs Gandhi took the step in 1980 of beginning negotiations with the

TABLE I Indo-Pakistan Arms Race in 1980s

Country	Year	Nature of Personnel		Numbers of Select Weapons Systems			Increase over period 1971-80			Comments
		Army	Navy	Airforce	Combat Aircraft		Army	Navy	Airforce	
Pakistan	1971	365,000	10,000	17,000	285		43,000	3,000	600	Apparent decrease by 29 Aircraft due to grounding of F-86s.
	1980	408,000	13,000	17,600	256					
India	1971	860,000	40,000	80,000						On order 32 Mirage Vs 18 Mirage IIIs fighter ground attack 25 'Supporter' trainers.
	1980	944,000	47,000	113,000			84,000	7,000	33,000	
										On order 150 Jaguars (1 sqdr formed) 1 sqdr of MIG-23s formed in Dec 1980 5 MIG-25 'Foxbat' reconnaissance on order.

Source: Military Balance, International Institute for Strategic Studies, London. (1970-71, 1980-81).

Carter Administration for the purchase of 3200 short range TOW anti-tank missiles for \$US40m and about 230 lightweight long range M-198 heavy mountain guns for \$US300m (see The Statesman, New Delhi, 20 January 1981). However, certain problems have arisen as Indian requirements are not being completely met. The lack of will on the part of the United States to transfer the associated technology precludes the possibility of subsequent production of these arms within India at a later date.

At another level, India received a very 'soft' loan from the USSR for the purchase of arms worth \$US1.6 billion. This agreement, signed with the Soviet Union in May 1980, provides for credit payable over a seventeen year period at very low interest (1.6 per cent). This has been Pakistan's complaint, since it would have to pay an interest rate of 14 per cent over a ten year grace period for the military component (\$US2.5 billion over a five year period) of the \$US3.2 billion package, which has been finalised with the United States. Aga Shahi has, however, been quoted as saying that 'Pakistan had refused to accept a concessionary rate of military sales credits at three per cent of interest, preferring to pay the normal rate of 14 per cent in order to protect the independence of its foreign policy' (see Pakistan Defence Journal 7(8): 3).

India is expected to receive military equipment, such as naval patrol boats, surface-to-air missiles and T-72 tanks as a result of the \$US1.6 billion deal. The agreement also provides for MiG-23 tactical fighter bombers, which arrived in knock-down kits just before President Brezhnev arrived in New Delhi in December 1980 (Sharma 1980: 7). Two squadrons have already been formed. India has also procured two versions of the MiG-25 'Foxbat' reconnaissance and trainer aircraft. These aircraft will considerably improve reconnaissance capabilities vis-a-vis Pakistan and China. In view of the F-16s that are to be delivered to Islamabad from 1982, a decision has been taken to explore the possibility of procuring 150 Mirage 2000 air superiority fighters by 1986.

If the decision to manufacture the Mirage 2000 within India is taken, then the original agreement signed with the British Aerospace Corporation (BAC) in 1978 will be modified. The clause that relates to the production of the Jaguar deep penetration strike aircraft in India's facilities will have to be deleted. Instead, only 85 of the original 150 Jaguars will be purchased outright. The shortfall will then be made up through the manufacture by Hindustan Aeronautics Limited (HAL) of the Mirage 2000. A high-level delegation led by the Indian Defence Secretary and the Chief of Air Staff went to Paris in October 1981 to explore the

possibilities for outright purchase of 40 Mirage 2000s. Subsequent numbers will then be produced in India, provided that an 'intent to purchase' (ITP) is signed. There are still details to be worked out with regard to the RDI radar and the Super Matra 530 missiles. It is possible that a number of interceptor versions of the MiG-25 will also be procured as part of a new deal with the Soviet Union.

If the Mirage 2000 which is likely to be ready for delivery by 1983-4 enters the inventory of the IAF, it is conceivable that an air power profile is being envisaged by India which extends into regions beyond its borders. Pakistan too will seek an antidote to the Mirage 2000, perhaps the F-15, to increase its air superiority vis-a-vis India. In a radio discussion held in Rawalpindi between two military officials (one retired) in July 1981, the point was stressed that the answer to the Indian procurement of the Mirage 2000 is the F-15, not the F-16. In the years ahead Pakistan is likely to be faced by severe financial problems (Faruqi 1981: 17-21). Consequently it is unlikely that it will be able to finance its requirements for defence wholly from internal resources. Increased Pakistan-Saudi military co-operation may be one of the major avenues by which Islamabad can gain access to the most sophisticated military hardware.

Saudi Arabia is one of the richest countries in the world thanks to its oil wealth. What it lacks, however, is trained manpower. Pakistan has developed a number of military establishments imparting various kinds of training which have surplus capacity to help friendly countries. Pakistan is known to have been providing training to Saudi military personnel in Saudi Arabia as well as in Pakistan (Sinha 1980: 357-61). Riyadh, on its part, has been providing financial assistance for the military re-equipment plans of Islamabad.

Under an agreement of 1967, the PAF sent an instructional and advisory mission in 1968 to assist in the expansion of the Royal Saudi Air Force (RSAF). It took over many of the training responsibilities in Saudi Arabia which had hitherto been undertaken by a British firm named Airwork Services Limited.

In an interview with the New York Times in February 1981, President Zia-ul-Haq said that negotiations had been going on with Saudi Arabia for the dispatch of no more than 600 or 700 Pakistani soldiers, airmen and sailors (Kaufman 1980). Their role has been likened to that of the Vatican Swiss Guard (Raj 1981: 40-47).

At the request of the French Government, Pakistan had also accepted the job of training Saudi and other Arab pilots on the Mirages which France was selling to several Arab states. This training has also been imparted at centres like the PAF Recruit

Training School at Kohat and the PAF School of Aeronautics at Korangi Creek (Sinha 1980: 359).

If the PAF were able to have access to the F-15s and the AWACS in Saudi Arabia, then in future wars with India, its low-level deep strike capabilities would be greatly enhanced. Pakistani sources are known to have made the charge that the Soviet AWACS, code-named Moss, though remaining wholly within Indian territory directed the IAF Canberras deep into Pakistan during the Indo-Pakistan War of 1971 (Cherikow 1975: 677-8). There is no evidence to suggest that this was in fact the case, and it is possible that such an argument has been devised by the PAF to enable it eventually to procure its own AWACS. If the Lockheed Corporation claim that it is a simple matter to convert the C-130 transport aircraft to an EC-130 AWACS (see Aviation Week & Space Technology, 25 May 1981) is true, then Pakistan could convert one of her existing C-130s to perform this role.

The introduction of the AWACS into the theatre of war between India and Pakistan will alter dramatically the nature of aerial warfare in the sub-continent. India's Air Force is also likely to press its claim for AWACS. The British Nimrod and the Soviet Moss are the most accessible. Presently, the IAF is relying on the reconnaissance capabilities of the MiG-25 to survey air bases and nuclear facilities in Pakistan.

The advanced avionics of the F-16s are likely to usher in a new era of electronic warfare on the sub-continent. Because of the short distances between the two antagonists' targets, the warning time is not great for either the PAF or the IAF.

Let us now turn to an analysis of Pakistan's indigenous defence modernisation efforts.

PAKISTAN'S DEFENCE MODERNISATION IN THE 1980s

Pakistan's defence expenditure presently runs at about \$US1 billion annually within a GNP of \$US18.5 billion. A US Congress delegation from the Armed Services Committee that visited Pakistan and other contiguous states during the period 2-14 April 1980, learned in its discussions with Pakistan's military leaders that a massive force modernisation package had been developed through an American defence survey and submitted for review by United States officials. The weapons package included requests for air defence ground equipment, aircraft, attack helicopters, missiles, anti-aircraft weapons, tanks, armoured personnel carriers, communications equipment and artillery. While it is true that the impetus for this package was largely due to the Soviet intervention

in Afghanistan, it must be pointed out that Pakistan began modernising its armed forces after the loss of East Pakistan in December 1971 (Ayoob 1978: 189). The IISS Military Balance for 1972-73 and 1974-75 listed the F-104s as part of the PAF's inventory, but in subsequent years removed them. This change leads one to suspect that countries like Jordan sent their F-104s to Pakistan for maintenance and that Pakistan is in fact a major aircraft maintenance facility for some of the Islamic bloc countries.

Following the 1971 war with India, Pakistan adopted a fundamental approach to developing a defence industrial potential. The 1971 war resulted in a requirement by the PAF for an aircraft battle damage repair facility located fairly close to the main operational sectors along the central and northern borders with India. In 1972 Pakistan made a diplomatic approach to the Chinese government to establish a Pakistan repair centre for the F-6 fighter at Kamra in Attock District. The Chinese not only agreed but also offered a more advanced facility than had been requested, including full overhaul and rebuild capabilities. One major reason for such heavy Chinese involvement was the short overhaul lives of the Chinese supplied F-6s (Fricker 1981: 58-59).

Although its connections with China may provide Pakistan with a quantity of weapons which are obsolete by today's standards, the development of the Pakistan Aeronautical Complex at Kamra, near Abbotabad (see map), for the overhaul of the Dassault Mirage IIIEPs of the PAF could go a long way towards modernisation. French technicians helped Pakistani Air Force technicians when the first overhauls began at the Pakistan Aeronautical Complex. The first batch of 22 Mirage IIIEPs should have completed their rebuild by the end of 1981 and Mirage Vs, 32 of which have now arrived in Pakistan, will become due for overhaul from 1983 onwards. Another stage, scheduled for completion in June 1981, relates to the activation of a new facility alongside the Mirage III plant and involves the manufacture under licence of the Swedish Saab Scania MF-17 support and liaison aircraft. Pakistan also tried to procure the Mirage 2000 from France in 1979, when Agha Shahi visited Paris. Since the delivery date was set somewhere between 1983 and 1984, this was not acceptable to Islamabad. All PAF Mirages have provision for a jettisonable SEPT 844 rocket booster pack to improve high altitude interception performance if required and, out of the total 107 Mirages in the PAF's inventory today, about 30 aircraft are currently being updated by the installation of the Litton LW-33

nav/attack system incorporating the Thompson-CSF head-up display. Mirage roles and armament will be extended over the next two years by provision of AM-39 Exocet ASMs for anti-ship use. The aircraft's armament already includes MATRA Durandal penetration bombs for use against runways.

The People's Republic of China (PRC) has been a source of substantial technical and equipment support ever since the United States imposed an embargo on arms sales to the sub-continent in 1965. In November 1980 the PRC gave assistance in training maintenance crews for servicing the Shenyang Fantan-6 (F-6) fighter, the Chinese-built version of the Soviet MiG-19SF. Following a deal signed during a visit to China of the Pakistan Air Force's Chief Air Marshal Anwar Mohammed Shamim in Beijing in June 1980, deliveries of the F-6 were to be completed by mid-1981. The F-6 is being inducted by the PAF as a strike fighter and has a combat radius of 130 miles. Published versions of its range capability are highly exaggerated and some estimates have put the figure as high as 468 miles. Pakistan will receive three more squadrons, comprising 65 aircraft, and presently has a total of 144 MiG-19s which are now divided between Peshawar and Sargodha (see map). These aircraft have also been equipped with American AIM-98/3 Sidewinder air-to-air missiles. In previous wars the PAF has relied primarily on these aircraft for protection of their air bases, some of which are located in Mauripur (Masroor), Chaklala (Rawalpindi), Mianwali, Sargodha, Multan and Peshawar. Table II lists the bases at which the Pakistani F-16s and the Mirages are, or will be, located.

TABLE II: PAF MIRAGE/F-16 BASES

No.5 Squadron	Mirage III EP	Interceptor	Sargodha
No.9 Squadron	Mirage V P	Strike	Rafiqi (Shorkot Road)
No.20 Squadron	Mirage III RP	Reconnaissance	Karachi
No.26 Squadron	Mirage V P	Strike	Peshawar
	F-16 Falcon	Strike	
No.33 Squadron	Mirage V P	Strike	Karachi

Normally there are 16 aircraft per squadron. The three squadrons of F-16s that the PAF is likely to receive over the 1983-84 period may not have the bombing racks and automatic fire control system of the American version. Akin to the difficulties faced by the Reagan Administration with regard to the Saudi

AWACS deal in the US Congress, the F-16s that are to be delivered to Pakistan may find approval within the House of Representatives only if they are rendered non-lethal. In that case, the F-16s will be put into an air defence role to combat the IAF's air superiority provided by the Soviet supplied MiG-21s and MiG-23s.

At another level, the F-16s, if provided with the bombing racks, are capable of carrying two 2000lb bombs over a range of 400 miles when performing a low-low-low mission. Called the 'Fighting Falcon', the F-16, which is a compact multi-role fighter attack plane, is equally effective in air-to-air combat and in a ground support role. Its speed is Mach 2 plus; it has a combat ceiling above 50,000 feet and a range of more than 2000 miles. It is equipped with 200 mm multi-barrel cannon with 500 rounds. Its external stations can carry up to six AIM-9 infra-red missiles, conventional air-to-air and air-to-surface munitions and electronic measure pods.

Because it is small in size, with one smokeless engine (with a thrust of 25,000 pounds), it is difficult to detect visually or with radar. Its bubble canopy cockpit gives the pilot almost unlimited visibility. The pilot has excellent flight control through its 'fly-by-wire' system in which electrical wires carry commands replacing the usual cables and linkage controls. A well-known Pakistani journal has observed in its editorial that:

The F-16s, if they ever join the Pakistan Air Force, will certainly bring new technology to this country but not without introducing a new sense of responsibility and cost evaluation. It will cost no less than \$15 million a piece and much extra for spares per aircraft. It will be a very costly deal to be made through loan at market rates which are very high. Pakistan will not be able to afford it without matching its pace of economic and industrial development with this level of cost technology.

The introduction of the F-16 is not such an epoch making phenomenon . . . The F-16 is not an agent provocateur and certainly not for a country like Pakistan which has been consistently ensuring at least one thing for the last four years and that is that it refuses to be provoked. (See The Pakistan Economist, 15 August 1981, 23(33): 5-8.)

A retired Pakistani military officer has also observed that:

All the Indian clamour about the F-16 is strongly reminiscent of a similar adverse reaction to the indiction of the

F-104 Starfighter into the PAF in late 1961. The angry debate which the solitary squadron of F-104s had caused in the Indian press and political lobbies might just as well have equalled, if not exceeded, their criticism of the entire US military aid to Pakistan between 1954-55. The aircraft was painted through the mass media as a sort of ultimate weapon to tilt the mythical strategic balance in the sub-continent that never did really exist nor does. (Siddiqi 1981: 5)

For the Indian Air Force it is the capability of the F-16 radar to operate in five modes that is a destabilising factor and one that vitiates the air superiority that the IAF presently possesses. The radars in the Russian MiG-21 and MiG-23 fighters are two generations behind the F-16 model. Hindustan Aeronautics Limited (HAL) is presently engaged in upgrading electronic counter-measure (ECM) equipment and has produced the 'identification, friend or foe' (IFF) radar which has been fitted in the Jaguar aircraft. As was pointed out earlier, there is so much preoccupation with the F-16s in India that the possibility that larger numbers (say 100) of F-5Es and A-7s (which the Vought Corporation says Pakistan is still interested in) may eventually be transferred by the United States instead of the F-16s goes largely unnoticed. This is essentially a point in the PAF's favour as the A-7s too can deliver lethal nuclear strikes on Indian installations.

On the political level, India has to contend with the increasing possibility that Pakistan is now the prime focus of attempts to build an Islamic nuclear bomb, especially since Iraq's capabilities have been dealt a severe blow. Since an Islamic bomb would threaten Israel, that country may contemplate strikes on Pakistan's nuclear facilities at Kahuta, Multan and PINSTECH. In testimony to the US Senate in August 1980 Lewis Dunn of the Hudson Institute alleged that New Delhi would also contemplate such a move. Edward Luttwak in the same testimony made the point that the Reagan Administration should delay the delivery of the F-16s until Pakistan abnegates nuclear weapons. Such a strategy of 'trade off' is but one form of management of nuclear proliferation in South Asia.

MANAGEMENT OF NUCLEAR PROLIFERATION IN THE 1980s

In April 1979 the United States used the provisions of the Symington-Glenn Amendment to the Foreign Assistance Act of

1976 to suspend economic aid worth \$US40 million to Pakistan on the grounds that it was building an unsafeguarded enrichment plant. Such a move by the American government of President Carter was unproductive as it only strengthened Pakistan's resolve. Also, Pakistan viewed America's non-proliferation policy as practised by Carter as smacking of double standards because earlier Carter had twice used his executive privilege to overrule the objections of the Nuclear Regulatory Commission (NRC) to shipments of US enriched uranium to India for the American licenced boiling water reactors (BWRs) at Tarapur, near Bombay (Tahir Kheli 1 980: 348).

Pakistan's logic was, however, faulty in arguing that the United States was supplying nuclear fuel to a country that had detonated a nuclear device and was at the same time denying economic aid to one who had not. What the leaders in Islamabad had failed to appreciate was the distinction between the Symington-Glenn Amendment and the Nuclear Non-Proliferation Act. It is the latter that pertains to the supply of nuclear materials to countries engaging in 'peaceful nuclear' activity. The provisions of the US Non-Proliferation Act of 10 March 1978 demand the application of 'full scope' safeguards on all nuclear facilities of countries that have contracted to receive supplies of nuclear material and technology from the United States. If the United States had used the pretext of supplies of US enriched uranium to the research reactor at PINSTECH to demand safeguards on Kahuta, Multan and PINSTECH, Pakistan too would have resisted. In the present context it appears that the Reagan Administration is in a mood to use the waiver also in the Non-Proliferation Act (NPA). Supplies of nuclear fuel to Pakistan will therefore remain unaffected if the House approves the waiver. President Carter's policy did attempt to impose these types of safeguards on India but failed, because India had the capacity to resist and demonstrate that it had a self-reliant nuclear fuel cycle, which in the case of Pakistan is not true.

American attempts under President Carter to manage the nuclear proliferation problem in South Asia displayed another major inconsistency when, in the wake of the Soviet intervention in Afghanistan, President Carter offered Pakistan \$US200 million (over two years) as military aid. President Zia-ul-Haq rejected this offer of aid on the grounds that it amounted to 'peanuts'. What Zia was seeking was nearly \$US2 billion, which Washington felt was too high. A well known American analyst, who once served on the Carter task force has viewed the proliferation problem as 'one of managing the de-stabilising effects of nuclear spread by keeping the rate and degree as low as possible' (Nye 1980: 102).

Considering that since China's atomic test in 1964, India detonated in 1974 and Pakistan will only have the capability sometime in the 1980s, one can argue that the rate and degree of spread has been slow to begin with, and therefore Carter's inconsistent policies did not help in any way towards constructive management. President Reagan's policy of preventing the spread of nuclear weapons was announced on 6 July 1981. Its guidelines are quite comprehensive and stringent as far as the transfer of nuclear technology to countries that do not subscribe to the nuclear non-proliferation treaty (NPT) is concerned. However, in the case of South Asia it appears more than likely that the new policy will affect India's nuclear programme rather than that of Pakistan's, because India's significance in US foreign policy, unlike Pakistan's, does not merit Presidential waivers.

US Assistant Secretary of State, James Buckley, after his two visits to Islamabad in 1981, sought to draw a subtle distinction between a peaceful nuclear explosion (PNE) and a nuclear weapon, in the case of Pakistan. Such distinctions are futile since President Zia-ul-Haq, as early as 1979, rejected the utility of any PNE, especially in the case of Pakistan. Consequently, present American attempts to manage the nuclear proliferation issue in South Asia by hardening their stance in the case of New Delhi and weakening it in the case of Islamabad can only result in a Carter-type dilemma.

When Kissinger visited Islamabad on 8 and 9 August 1976, Pakistan viewed it as an occasion for the renewal of American concern for the 'security, territorial integrity and independence of Pakistan' and of Pakistani requests for the fulfilment of its defence needs. Interpreting the positive results of Kissinger's preceding visit to Iran - where an arrangement was made for the supply of \$US10 billion in American weapons over a period of five years - as a sign of American commitment to Iran's security, the then Prime Minister Bhutto said to Kissinger: 'Your visit to Iran is really quintessential of your perceptions of the whole concept of security arrangements. We are so delighted with the outcome of your visit to Iran' (Bhutto in Pakistan Times, 9 August 1976). At that time, the United States under President Ford (and Kissinger) viewed Iran as the dominant power in the Indian Ocean region and Pakistan perceived Iranian security to be inseparable from its own. Bhutto also observed: 'If there are small bangs, it does not matter. If there is a big bang, they [the USA] cannot consider Iran's security separate from Pakistan's'. Although Kissinger's larger 'balance of power' concepts were sympathetic to Pakistan's needs, he was in no position to issue a carte blanche to Pakistan's acquisition of so sensitive a nuclear technology as reprocessing.

Rather, he was offering a 'trade off' between Pakistan's acquisition of the reprocessing plant and the sale of 105 A-7 attack aircraft. However, President Carter, who formulated a new arms export policy, refused the sale of the A-7 to Islamabad, fearing that to do so would be to introduce offensive arms into a region of tension. For the same reason the sale to India of the Swedish Viggen, bearing an American engine, was banned.

The 'trade off' between conventional weapons and the non-acquisition of a nuclear weapons capability by countries is a strategy that acts in conflict with the Symington-Glenn Amendment. In the US Senate presently, the Foreign Relations Committee already has voted to exempt Pakistan from the Amendment. The House Foreign Affairs Committee like its Senate counterpart is also being asked by the Reagan Administration first to exempt Pakistan from the Amendment and then to authorise the \$US3.2 billion aid package. A team of the Committee's members was despatched to Pakistan in October 1981 to investigate the extent of Pakistan's clandestine attempts to build a nuclear bomb. Pakistan's designation as a 'front line state' by the Reagan Administration stems from the Soviet presence in Afghanistan.

When the United States, in early 1979, offered to sell Islamabad 50 F-5E fighters, provided she would agree to place the centrifuge facility at Kahuta under international safeguards, President Zia-ul-Haq turned down the offer (IISS 1979: 18). As pointed out in the introduction, the Pakistani military during Bhutto's time are believed to have held the view that it would have been better for Pakistan to have accepted Kissinger's offer of A-7s. For Pakistan, the need to acquire the A-7s was motivated by a desire to enhance its anti-tank capabilities vis-a-vis India. Air Marshal Asghar Khan, the former Chief of the Pakistan Air Force and then one of the leaders of the opposition in the Pakistan National Alliance (PNA) party in 1976, was amongst the minority. However, there seem to be no signs currently that the military leadership in Islamabad is in any way relenting on the nuclear issue. Zia-ul-Haq is on record as saying that nuclear energy is more important for Pakistan than the polls. Neither do there seem to be any signs that there will be a free election in the near future.

The possibility that the leadership may be forced to detonate a nuclear device for 'symbolic purposes', for example, to divert the attention of the people, is very real. Pakistan is an unstable state and, therefore, its acquisition of a crude nuclear device poses severe command and control problems, especially for India. One American analyst has made precisely this point with relevance to nuclear proliferation in South Asia during the 1980s (Betts 1979:

175-80). A model pertaining to the typical case of two adversaries differing greatly in size (Wohlstetter 1975: 148-9) may be applied to South Asia. Within this framework, large countries in general will have the capacity to destroy small ones, but not vice versa. This difference in destruction capability implies a difference in bargaining leverage. The smaller maybe able to 'tear an arm' off the larger. In the Gaullist formulation, the stakes at issue for the larger country would not be comparable to the damage, less than total, the smaller country might inflict on it. Suppose Pakistan, faced with a Soviet-Afghan 'final solution' prefers annihilation rather than subjugation, then the following inferences may be made:

- (a) The possession of nuclear weapons by Pakistan is likely to induce caution by the Soviet Union in challenging what might be considered by Islamabad as its vital interests.
- (b) Pakistan would be playing a riskier hand than the Soviets, for the latter would have an incentive and perhaps the capacity to eliminate the smaller's nuclear force.
- (c) There remains large disparities in power and in bargaining advantages.

In present-day American foreign policy, the contingencies foreseen in Pakistan are:

- (a) The Soviets use artillery and aircraft to attack refugee camps in Pakistan, on the pretext of preventing the rebels crossing from Afghanistan. Also the Soviets attempt to intercept the rebels moving through the passes and trails across the border.
- (b) With air and artillery cover, the Soviets seize a part of Pakistani territory within their SAM environment and hold it, forcing the Pakistanis to counter-attack. There are numerous points at which a salient of Pakistani territory juts into Afghanistan and the Durand Line follows an irregular course along the watershed. None of these salients are properly defended. The Soviet objective is to threaten the Pakistanis in order to prevent them giving support to the Afghans.
- (c) India, as a Soviet proxy, attacks Pakistan in the east. India's objective is the assertion of hegemony over South Asia and the achievement of dominant power status in that region.
- (d) A joint Soviet-Indian co-ordinated attack is made from both west and east, with the fundamental objective of dismembering Pakistan. Moscow's goal is to gain access to the sea and control of the southern flank, the eventual objective being the oil fields of the Gulf. India's goal would be to undo the partition of the sub-continent.

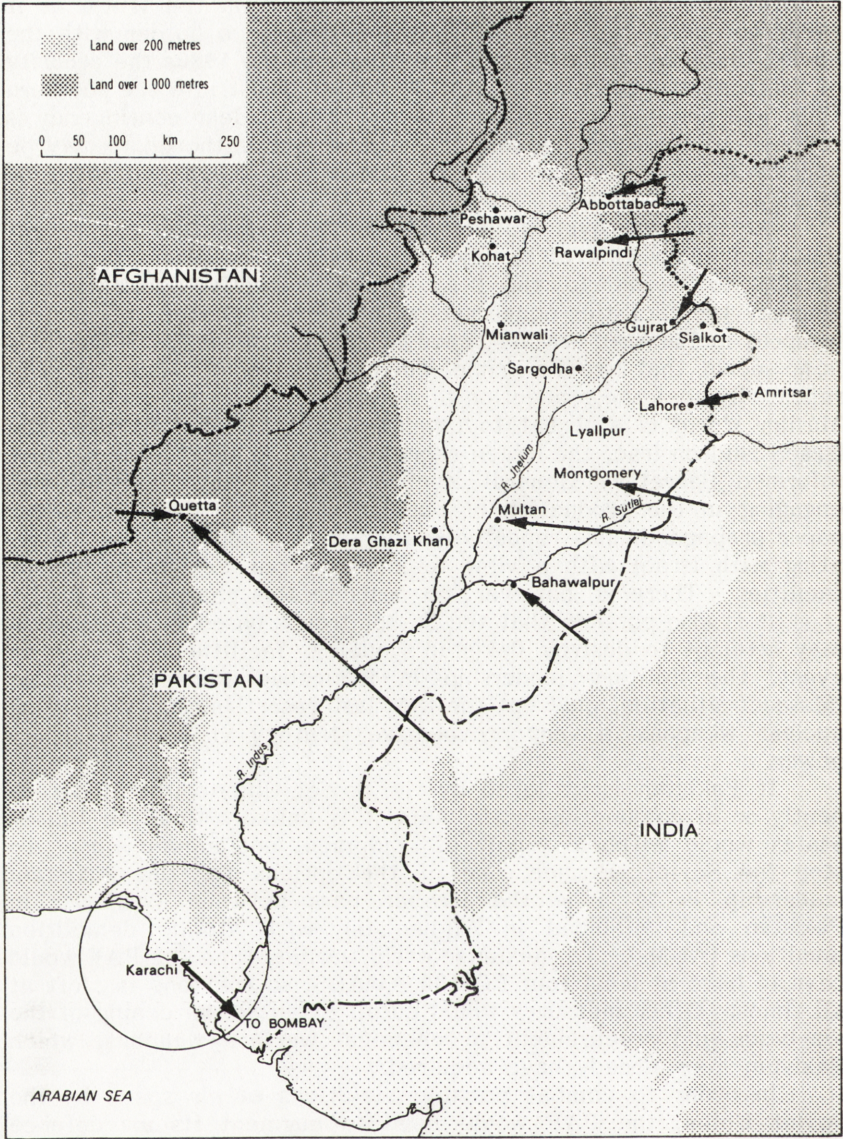
The above perspectives coincide with the thinking prevalent today at the Joint Staff Headquarters in Pakistan. India is seen as a Soviet proxy. Nothing could be farther from the truth, as it would not be in New Delhi's interests to share a border with the Soviet Union by dismembering Pakistan. In the 1980s the security of South Asia is correlated with the Soviet thrust into the southern flank and possible American response. The nuclear contingency is relevant to the Indo-Pakistan threat of war, although it may be conceived as a 'last resort' instrument for Islamabad vis-a-vis Moscow.

At another level, failure of the United States to prevent Pakistani acquisition of nuclear weapons may precisely force the Israelis to resort to the strategy of 'assertive disarmament' whereby the facilities concerned with the manufacture of nuclear weapons in Pakistan are destroyed by surgical strikes 'a la Iraq'. It is no secret that Israel's Prime Minister Menachem Begin has said repeatedly that the production of nuclear weapons anywhere in the Muslim World is a threat to Israel's security. Shortly after the Israeli raid on Iraq, the Israeli representative at the United Nations informed Secretary General Kurt Waldheim that Pakistan was engaging in the production of nuclear weapons. Pakistani newspaper propaganda has repeatedly alleged that India was collaborating with Israel with a view to knocking out Pakistan's nuclear facilities. There is, however, no basis to this charge.

It is also possible that the Soviet troops based in Afghanistan may attempt to destroy Pakistan's nuclear facilities. In such an event, the military leadership in Islamabad facing a possible 'Masada' situation, may opt for the 'last resort' strategy of using nuclear weapons, a very provocative strategy vis-a-vis a super-power.

If Pakistan is attacked by the Soviet Union either independently or in conjunction with India, it is unlikely that the United States would withhold supply of equipment and ammunition. To stop the Soviet advance, one of the options for the Pakistani leadership is to mine the Khyber pass between Peshawar in Pakistan and Jalalabad in Afghanistan with atomic demolition munitions (ADMs). To maximise early warning time the PAF would have to have at least four EC-130 AWACS, so that one is aloft at all times. Other measures would entail extensive hardening of the air bases and procurement of chemical warfare weapons, which Pakistan may already have acquired.

In order to combat possible violations of air space by the Soviet Union, the PAF would need to augment its air defence ground environment (ADGE) with TPS-43 radars, to permit



replacement of losses (Rikhye 1981). In any case, to combat the Soviets Pakistan would need help from her allies in the Islamic world such as Saudi Arabia, Jordan and Libya. In addition, the Chinese would have to resupply her with military hardware through the strategic Karakoram highway, which was completed in 1977. Soviet troops have, however, moved into the strategic corridor in northeast Afghanistan in very close proximity to the Karakoram range. These troops have occupied the largely uninhabited 300 square km Wakhan corridor across the Pamir mountains. The corridor is a thin finger of 5,000 metre high mountains and steep valleys pointing towards China in the east between Pakistan and the Soviet Union (see map). According to Western diplomats in Pakistan, the Soviet Union has been building airstrips in the corridor, permanent barracks for its troops and widening and extending the small network of roads (see *Asia Defence Journal*, January 1981: 17). Consequently, the strategic utility of the Karakoram highway would be weakened as the passes through which China might make military supplies to Pakistan could be effectively sealed.

Having analysed the influence of factors external to South Asia, let us now examine some possible scenarios of nuclear war between India and Pakistan.

CONSEQUENCES OF NUCLEAR WARFARE IN SOUTH ASIA

Sometime in the 1980s both Pakistan and India might be in possession of nuclear weapons that can be delivered by long range aircraft. Some of the major military targets that might invite an Indian nuclear attack are illustrated in the accompanying map. The thrust on Quetta presupposes a joint Indo-Afghan thrust (which can be classified as a low-level contingency in Indian defence planning). Mianwali and Sargodha (the location of the air force facilities) would be the major counter-force targets. Let us examine some of the scenarios:

Scenario 1. Since most of Pakistan's industries lie within 250 kilometres of the Indian border, a strategic attack launched by India in a 'massive retaliation' scheme would target the following principal cities (populations indicated):

City	Population
Islamabad	201,000
Karachi	5,100,000
Lahore	2,920,000
Multan	730,000
Peshawar	555,000
Quetta	285,000
Rawalpindi	928,000
Sargodha	294,000
Sialkot	296,000

Source: Morning News, Karachi, 30 July 1981.

A fifteen kiloton bomb dropped on Lahore could kill 52,000 people. Another on Faisalabad could kill 85,000.

A viable doctrine of deterrence such as that which has provided stability in the European theatre is presently lacking in the sub-continent. This situation must be corrected. If such a doctrine of deterrence is to be evolved for the two countries, then the two nation states must be in a position of parity, in terms of their ability to launch nuclear weapons against each other. Since India would possess an overwhelming superiority in terms of capacity to stockpile weapons, deterrence may not be a feasible doctrine, as the asymmetry in capabilities may be a strong reason for Islamabad to launch a pre-emptive nuclear strike.

Since (a) the population of India is so much greater than that of Pakistan, (b) the Pakistani leadership would need to destroy many more military targets in India than vice versa, and (c) the distance the PAF aircraft would have to travel to reach Indian targets would be much greater than that the IAF would have to travel in Pakistan, any Pakistani contemplation of a 'counterforce' strategy would trigger 'massive retaliation' from India that would inflict unacceptable damage on the whole of Pakistan. Some might argue on the other hand that nuclear weapons on the sub-continent would stabilise the situation.

Scenario 2. To prevent a Pakistani pre-emption, India launches a conventional air strike on selected facilities such as Kahuta (the site of the centrifuge), Chasma and PINSTECH (if plutonium production is believed to be under way). Surprisingly, the centrifuge at Kahuta is located only 90 kilometres from the Indian part of Kashmir and is vulnerable, therefore, to both ground and air attack. Such a strike would render the nuclear facilities in Pakistan ineffective. A Pakistani response to such strikes would be

to 'harden' the sites by increasing the battery of Crotale and SA-2 missiles presently around the facilities (Henderson 1980). India's MiG-23s, together with MiG-25s for aerial reconnaissance, when coupled with the Jaguars, would be adequate to deal with the Pakistani air defence.

Scenario 3. Islamabad uses its 'nuclear devices', deliverable by its fleet of Mirage Vs and F-16s, with aerial refuelling by C-130s to increase the range of operations, in order to blackmail India. Typically, this may be achieved by loading one of the F-16s with a nuclear device (provided bombing racks are available) and continually circling either the Tarapur reactor or the Rajasthan reactor (both within range of the F-16s and Mirage Vs). The use of a single ten kiloton weapon in the centre of Bombay would result in some 265,000 fatalities. India can be well protected by its fleet of MiG-23s and MiG-25s and its SAM-7 anti-aircraft missiles. These weapons would make the delivery of a Pakistani nuclear munition to targets in Indian territory rather difficult. Among the Indian cities Bombay would be one of the easier targets, owing to its distance from Karachi being within the range of the Mirage III and V aircraft, as illustrated in the accompanying map. (The radius of the circle represents the radius of action of the aircraft). Pakistan's procurement of F-16s with 'look down' and 'shoot down' capability would enable the delivery of a nuclear weapons with yield ranging from 1kt to 20 kt from an air base (Sargodha or Peshawar) 1000 kilometres from the nearest Indian border. If one of the 38 Mirage Vs presently in the Pakistani inventory were to be used, then it could fly from Karachi at low altitude over the Arabian Sea, aerially refuel, and head for Bombay. The location of Indian nuclear facilities and their nearest population centres are illustrated in the accompanying map. One of the most vulnerable targets is the Tarapur reactor, which is located a few miles from Bombay.

Destruction of a nuclear facility by a nuclear munition is a topic that has received attention only very recently (Tsipis 1980, Ramberg 1981). Because nuclear power facilities contain such large inventories of biologically threatening radionuclides, they can make potentially useful radiological weapons when manipulated for strategic purposes. According to a study by the US Oak Ridge National Laboratory's Institute for Energy Analysis:

What can be said for the concept of nuclear power plants as potential hostages is that by installing a reactor on its territory, a country increases its vulnerability to grave, possibly unacceptable damage in the event of war.

a result, that nation's leaders might be inclined to raise the threshold of their own inclinations towards aggression Aside from the promise of a vast increase in energy supply for developing nations, nuclear powered generating stations could actually improve relations among countries. The risk of widespread radioactive contamination by nuclear power plants hit by even conventional bombs could introduce a positive new element into the military calculations of powers outside the NATO-Warsaw Pact arena. As they balance military and diplomatic solutions to local conflicts, moderation rather than bellicosity might become the better part of valor. (Cooper 1978: 125-35)

Judging from the above remarks, the presence of power reactors at Karachi and Chasma in Pakistan and those at Tarapur and Kota in India should act as a stabiliser rather than a destabiliser in times of war. However, as long as there is a military theocratic state in Pakistan, no leader in India can afford to view nuclear weapons in Pakistan as having a stabilising effect. It is possible that by transition to a civil government in Islamabad the concentration of military power might be diffused and a new strategic policy might emerge. India has a viable command, control and communications system (C³) for handling nuclear weapons; this is not true in the case of Pakistan as yet.

The short range between military targets in India and Pakistan reduces the warning time and this may encourage preemptive or 'launch on warning' postures (Betts 1979: 183). Since India has a relatively sophisticated space programme, it should attempt to provide a viable 'hot link' between the leadership in New Delhi and that in Islamabad. Also, the Indian Space Research Organisation (ISRO) has the capabilities to launch photo-reconnaissance satellites. This was demonstrated by the launching of the remote sensing satellites (the Rohini series) in August 1980 and May 1981. In the case of Pakistan, such advances will take at least five to six years, according to the Chairman of SUPARCO (see Pakistan Times, 20 October 1981). However, regional management of the nuclear proliferation problem by India and Pakistan alone, to the exclusion of the superpowers, is not feasible as long as the USA and USSR co-ordinate their overall strategies for the Arabian Sea and the Persian Gulf with those of supporting their interests in South Asia.

CONCLUSION

The security of South Asia in the 1980s cannot be separated from the security interests of the two superpowers in Southwest Asia and the Persian Gulf. Acquisition of nuclear weapons by Pakistan will spur an Indian nuclear weapons programme. Since India's nuclear infrastructure is so much bigger than Pakistan's, it is New Delhi that can effectively manage the regional problem of nuclear proliferation. For this, India and Pakistan should work towards:

- (a) a 'no first use of nuclear weapons' policy;
- (b) a declaration not to use nuclear munitions on sensitive facilities such as nuclear reactors;
- (c) enhancement of communication links through satellites, with a view to creating an effective C³ system, so that the leadership in both India and Pakistan is aware at all times of developments in the nuclear arena in times of war. This link is vital, in case Israeli commandos or aircraft should strike the facilities at Kahuta, Islamabad and Multan, and be mistaken by the military leadership in Islamabad for the agents of New Delhi.

APPENDIX 1

PAKISTAN

Population: 126,300,000.
 2 years selective military service.
 Total armed forces: 392,000.
 Estimated GNP 1970: \$16 billion.
 Defence budget 1971-72: 3,400 million rupees (\$714,000,000).
 4.76 rupees = \$1.

Army: 365,000 (including 25,000 Azad Kashmir troops).
 2 armoured divisions.
 12 infantry divisions (2 more being raised).
 1 independent armoured brigade.
 1 air defence brigade.
 100 M-47, 100 M-48, 100 T-54, 50 T-55 and 225 T-59 med tanks; 200 M-24, 75 M-41 and 20 PT-76 lt tanks; 300 M-113 APC; about 900 25-pounder guns, 105mm and 155mm howitzers; 200 130mm guns; *Cobra* ATGW; 20 H-13 helicopters.

Navy: 10,000.
 4 submarines.
 1 light cruiser/training ship.
 2 destroyers.
 3 destroyer escorts.
 2 fast frigates.
 4 patrol boats.
 8 coastal minesweepers.
 2 small patrol boats (less than 100 tons).
 2 UH-19 air-sea rescue helicopters.

Air Force: 17,000; 285 combat aircraft.
 1 light bomber squadron with Il-28.
 2 light bomber squadrons with B-57B.
 2 fighter-bomber squadrons with *Mirage III*E.
 8 fighter-bomber/interceptor squadrons with F-86.

INDIA

Population: 557,000,000.
 Voluntary military service.
 Total armed forces: 980,000.
 Estimated GNP 1970: \$49 billion.
 Defence budget 1971-72: 12,420 million rupees (\$1,656 million).
 7.5 rupees = \$1.

Army: 860,000.
 1 armoured division.
 2 independent armoured brigades.
 13 infantry divisions.
 10 mountain divisions.
 6 independent infantry brigades.
 2 parachute brigades.
 About 20 AA artillery units.
 200 *Centurian Mk 5/7*, 250 *Sherman*, 450 T-54 and T-55 and 300 *Vijayanta* med tanks; 150 PT-76 and 100 AMX-13 lt tanks; OT-62 and Mk. 2/4A APC; about 3,000 artillery pieces, mostly 25-pounders, but including about 350 100mm and 140 130mm guns; SS-11 and *Entac* ATGW.

Navy: 40,000.
 1 16,000-ton aircraft carrier.
 4 submarines (ex-Soviet F-class).
 2 cruisers.
 3 destroyers.
 9 destroyer escorts (including 5 ex-Soviet *Petya* class).
 1 general purpose frigate.
 5 anti-submarine frigates.
 3 anti-aircraft frigates.
 10 patrol boats (4 less than 100 tons).
 4 coastal minesweepers.
 4 inshore minesweepers.
 1 landing ship.
 2 landing craft.
 9 seaward defence boats (6 less than 100 tons).
 The naval air forces includes 35 *Sea Hawk* attack aircraft, 12 *Alizé* maritime patrollers, and 2 *Sea King* and 10 *Alouette III* helicopters. 10 *Sea Hawks*, 5 *Alizés* and 2 *Alouettes* can be carried on the aircraft carrier at any one time.

Air Force: 80,000; 625 combat aircraft.
 3 light bomber squadrons with *Canberra B (I)*.
 5 fighter-bomber squadrons with Su-7.
 2 fighter-bomber squadrons with HF-24 *Marut I A*.
 6 fighter-bomber squadrons with *Hunter F-56*.
 2 fighter-bomber squadrons with *Mystère-IV*.
 7 interceptor squadrons with MiG-21.
 8 interceptor squadrons with *Gnat*.
 1 reconnaissance squadron with *Canberra PR-57*.
 1 maritime recon sqn with L-1049 *Super Constellation*.
 (8 to 25 aircraft in a combat squadron).
 Transports include about 55 C-47, 60 C-119, 20 Il-14, 30 An-12, 25 *Otter*, 12 HS-748 and 15 *Caribou*.
 Helicopters include about 80 Mi-4, 150 *Alouette III*, 10 Bell-47 and a few Mi-8.
 About 50 SA-2 SAM complexes.

Para-Military Forces: About 100,000 in Border Security Force.

PAKISTAN

Population: 82,700,000.
 Military service: voluntary.
 Total armed forces: 438,600.
 Estimated GNP 1978: \$18.5 bn.
 Defence expenditure 1979: 11.68 bn rupees (\$1.18 bn).
 \$1 = 9.9 rupees (1978, 1979).

Army: 408,000 (incl 29,000 *Azad Kashmir* troops).
 6 Corps HQ.
 2 arm'd divs.
 16 inf divs.
 4 indep arm'd bdes.
 4 indep inf bdes.
 6 arty bdes.
 2 AA arty bdes.
 6 arm'd recce regts.
 6 SAM sqns with *Crotale*.
 1 Special Services Group.
 5 army aviation sqns.
 M-4, 250 M-47/-48, 50 T-54/-55, 700 T-59 med, 15 PT-76, Type 60, 50 M-24 lt tks; 550 M-113, K-63 APC; about 1,000 75mm pack, 25-pdr, 100mm, 105mm, 130mm and 155mm towed, 12 M-7 105mm sp guns/how; 270 107mm, 120mm mor; 57mm, 100mm towed, 8 M-36 90mm SP ATK guns; 75mm, 106mm RCL; *Cobra* ATGW; ZU-2-4 23mm, 30mm, 37mm, 60 40mm, 57mm, 15 90mm, 3.7-in AA guns; 6 *Crotale* SAM; 40 O-1E, 30 Saab *Supporter* lt ac; 12 Mi-8, 35 *Puma*, 20 *Alouette* III, 12 UH-1, 15 Bell 47G hel.

(On order: *TAM* med tks; M-113 APC; *TOW* ATGW.)

RESERVES: 500,000.

Navy: 13,000.
 6 submarines: 2 *Agosta*, 4 *Daphne*.
 5 SX-404 midget submarines.
 1 ex-Br *Dido* cruiser (cadet trg ship).
 6 destroyers: 2 ex-US *Gearing*, 4 ex-Br (1 *Battle*, 1 CH, 2 CR).
 1 ex-Br Type 16 frigate.
 3 large patrol craft: 1 *Town*, 2 ex-Ch *Hai Nan*.
 12 ex-Ch *Shanghai-II* FAC(G).
 4 ex-Ch *Hu Chwan* hydrofoil FAC(r) <.
 7 ex-US *Adjuvant* and 268-class coastal mine-sweepers.
 1 ASW/MR sqn with 3 *Atlantic*, 2 HU-16B.
 3 *Alouette* III, 6 *Sea King* ASW/SAR hel.
 ASM: AM-39.
 (On order: 40 *ASROC* ASW msls.)

Base: Karachi.

RESERVES: 5,000.

INDIA

Population: 672,000,000.
 Military service: voluntary.
 Total armed forces: 1,104,000.
 Estimated GNP 1979: \$96 bn.
 Defence expenditure 1980-81: 36 bn rupees (\$4.4 bn).
 \$1 = 8.17 rupees (1980), 8.19 rupees (1979).

Army: 944,000.
 2 arm'd divs.
 17 inf divs.
 10 mountain divs.
 5 indep arm'd bdes.
 1 indep inf bde.
 2 para bdes, 1 cdo bde.
 14 indep arty bdes, incl about 20 AA regts, 4 arty observation sqns and indep flts.
 950 T-54/-55, 70 T-72, 1,100 *Vijayanta* med, 50 PT-76, AMX-13 lt tks; 700 BTR-50/-152, OT-62A/-64A APC; about 2,000 75mm, 25-pdr (mostly towed), about 300 100mm, 105mm (incl pack, *Abbot* sp how), 550 130mm, 5.5-in, 155mm, 203mm guns/how; 500 120mm, 160mm mor; 106mm RCL; SS-11, *ENTAC* ATGW; 57mm, 100mm ATK guns; 30mm, 40mm towed, ZSU-23-4 SP AA guns; 40 *Tiger* cat SAM; 40 *Krishak*, 20 *Auster* AOP-9 lt ac; some *Alouette* III, 38 *Cheetah* (*Lama*) hel.

(On order: 700 T-72 med tks, 75 *Cheetah* hel.)

RESERVES: 200,000. Territorial Army 40,000.

Navy: 47,000, incl Naval Air Force.
 8 ex-Sov F-class submarines.
 1 ex-Br *Majestic*-class aircraft carrier (capacity 18 *Sea Hawk*, 4 *Alize*).
 1 ex-Br *Fiji*-class cruiser (trg).
 29 frigates: 6 *Leander* with *Seacat* SAM, 1 hel; 2 ex-Br *Whitby* with *Styx* SSM; 12 ex-Sov *Petya* II; 7 trg (3 ex-Br *Leopard*, 1 *Hunt*, 2 *Black Swan*, 1 *River*); 2 ex-Br *Blackwood* (coastguard).
 4 ex-Sov *Nanuchka* corvettes with SSM, SAM.
 16 ex-Sov *Osa-I/II* FAC(M) with *Styx* SSM.
 1 *Abhay* large patrol craft.
 5 *Polucha* large patrol craft (coastguard).
 4 ex-Sov *Natya* ocean, 4 ex-Br *Ton* coastal, 3 *Ham* inshore minesweepers.
 1 ex-Br LST.
 6 ex-Sov *Polnochny* LCT.
 (On order: 3 *Kashin* destroyers, 2 modified *Leander* frigates, 2 *Nanuchka* corvettes, FAC(M), 2 *Natya* minesweepers, 6 *Polnochny* LCT.)

Bases: Bombay, Vishakapatnam, Cochin, Calcutta, Goa, Port Blair.

NAVAL AIR FORCE: 2,000; 50 combat aircraft.
 1 attack sqn with 25 *Sea Hawk* (10 in carrier).
 1 ASW sqn with 17 *Alize* (4 in carrier).
 2 MR sqns with 5 *Super Constellation*, 3 Il-38.
 4 ASW hel sqns with 15 *Sea King*, 5 Ka-25.
 1 SAR/liaison hel sqn with 10 *Alouette* III.
 3 trg/comms sqns with 7 HJT-16 *Kiran*, 4 *Vampire* T-55, 5 *Defender*, 2 *Devon* ac, 4 *Hughes* 300 hel.
 (On order: 8 *Sea Harrier* FGA, 3 Il-38 MR, 8 *Kiran* com/trg ac.)

PAKISTAN

Air Force: 17,600; 256 combat aircraft.
 1 lt bbr sqn with 11 B-57B (*Canberra*).
 12 FGA sqns: 4 with 17 *Mirage* IIIEP, 38 *Mirage* SPA/DP; 5 with 140 MiG-19/F-6; 3 with 40 F-86F/*Sabre* 6.
 1 recce sqn with 10 *Mirage* IIIRP.
 2 tpt sqns with 14 C-130B/E, 1 L-100, 1 *Falcon* 20, 1 F-27, 1 *Super King Air*, 1 *Bonanza*.
Hel: 10 HH-34B, 4 *Super Frelon*, 14 *Alouette* III, 1 *Puma*, 12 Bell 47G.
Trainers incl 5 MiG-15UTI, 24 MiG-17/F-4, 5 *Mirage* IIIDP; 23 *Saab Supporter*, 20 T-33A, 50 T-37C.
AAM: *Sidewinder*, R-530, R-550 *Magic*.
 (On order: 32 *Mirage* 5, 18 *Mirage* III FGA; 25 *Supporter* trg ac.)
RESERVES: 8,000.

Para-Military Forces: 109,000: 22,000 National Guard, 65,000 Frontier Corps, 15,000 Pakistan Rangers, 2,000 Coastguard, 5,100 Frontier Constabulary.

Source: Military Balance 1971-72, 1980-81.

INDIA

Air Force: 113,000; some 630 combat aircraft.
 3 lt bbr sqns with 60 *Canberra* B(I)58/B(I)12/B-66.
 17 FGA sqns: 4 with 64 Su-7BM/U, 4 with 64 *Hunter* F-56/-56A, 3 with 50 HF-24 *Marut* 1/IT, 5 with 80 *Gnat* Mk 1, 1 with 16 *Jaguar* GR-1, 2 T2.
 14 interceptor/FGA sqns with 252 MiG-21PF/FL/PFMA/MF/M/bis/U.
 1 recce sqn with 18 *Canberra* PR-57 (to be replaced by MiG-25).
 Ocu with 24 *Hunter* F-56/T-66/T-66D.
 Trg and conversion sqn with *Canberra* T-4/T-13/T-67, *Hunter* F-56/T-66, MiG-21, Su-7, *Gnat*.
 11 tpt sqns: 1 with 16 HS-748, 2 with 32 C-119G, 2 with 28 An-12, 2 with 24 DHC-3, 3 with 40 C-47, 1 with 14 DHC-4.
 1 comms sqn with 2 Tu-124, 6 HS-748, C-47, *Devon*.
 12 hel units: 6 with 40 Mi-4, 3 with 40 Mi-8, 3 with 60 *Chetak* (*Alouette* III).
Trainers incl 70 HT-2, 110 *Kiran* 1/1A, 15 *Marut*, 45 *Iskra*, 20 HS-748 ac, *Chetak* hel.
AAM: AA-2 *Atoll*.
ASM: AS-30.
 20 SAM sqns with 120 SA-2/-3.
 (On order: 150 *Jaguar* (110 to be locally built), MiG-21/bis, 100 *Ajeet* (*Gnat* Mk 2) fighters; 5 MiG-25 recce; An-32, 10 HS-748 tpts; 40 *Iskra* trainers; 45 *Chetak* hel.)

Para-Military Forces: About 200,000 Border Security Force, 100,000 in other organizations.

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