WHY CHINA SELLS ARMS
A Quest for Influence and Profits

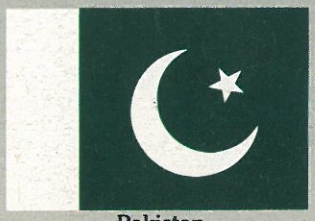
Newsweek

THE INTERNATIONAL NEWSMAGAZINE

July 11, 1988

THE NUCLEAR CLUB

India

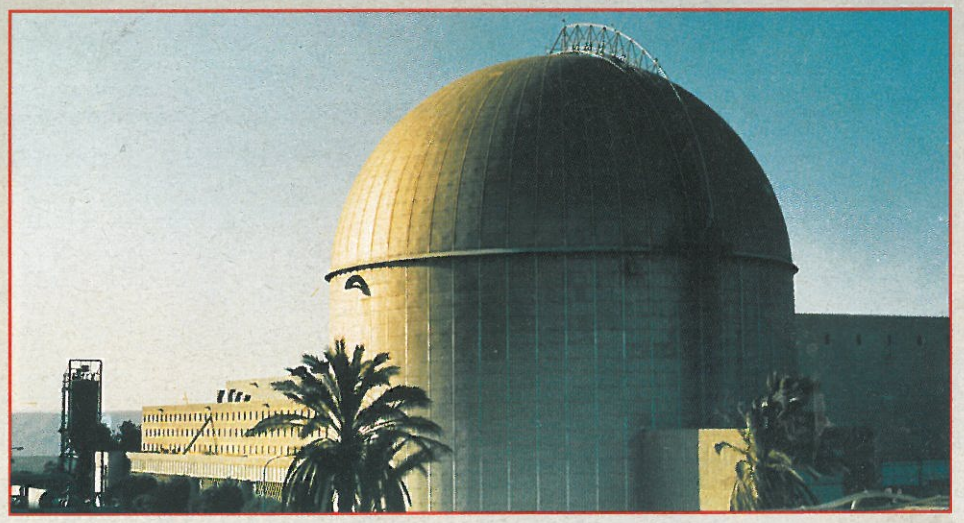


Pakistan

Its Four Newest Members

Israel

South Africa



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Number 28

The Nuclear Club

our developing nations have atomic weapons—and the means to use them

ROD NORDLAND

Imagine India launching a nuclear missile over the Himalayas into China, or Pakistan laying waste to New Delhi with an atomic bomb. Imagine Israel firing a nuclear warhead at ghdad. Think of South Africa, besieged a continent of enemies, leveling Zimbae. None of these scenarios is politically usible, at the moment. But technically, clear war among Third World nations become an unsettling possibility. ese four countries not only possess mic weapons, they now have the means leliver them.

his month, India will try to test-launch intercontinental ballistic missile. If sucsful, it would be the Third World's first h missile that could carry a nuclear rhead anywhere in the world. India has many as 20 such devices. Earlier this r, its cross-border enemy, Pakistan, ed a small missile that might be nucle-capable; Pakistan also has as many as r atomic bombs, Western intelligence rces say. Israel has nuclear weapons, —including thermonuclear devices as l as the first-generation atomic bombs others possess, U.S. intelligence rces say. At the same time, Israel has eloped a missile, the Jericho II, capable eaching most of the Arab capitals and n into the southern Soviet Union. "The t time there's war in the Mideast," says proliferation expert, Avner Cohen of Kennedy School at Harvard, "it'll be in the nuclear age."

long with South Africa, these nations the newest members of the nuclear b. They keep their bombs "in the baset," as weapons analysts put it, but acding to a wide variety of intelligence and ntific sources in the United States and ope, there is no longer any doubt that y have them. Unlike the five estabed nuclear powers,* they don't adverttheir arsenals. Nor do they test them: a ic atomic bomb no longer requires a test st. The weapons themselves have grown ophistication from the first crude Indibomb of 1974, so unwieldy that delivery ld have required a truck. India now has ller warheads that might fit onto inter-

*, U.S.S.R., France, Britain and China.

mediate-range missiles. Pakistan has a bomb thought to weigh no more than 400 pounds, light enough to strap to the belly of one of its U.S.-supplied F-16 fighter-bombers. Israel's bombs are so small that several experts think some may be intended for battlefield use. "I don't know of any time when there have been more countries pursuing the nuclear-weapons option," says a well-placed Defense Department source. "They're making more progress than ever before." Despite U.S.-Soviet agreement on banning intermediate nuclear forces, adds Sen. John Glenn, "the danger of nuclear war is rising, not because of what the Soviets are doing, but because of what smaller or less industrialized nations are doing to develop or acquire nuclear weapons."

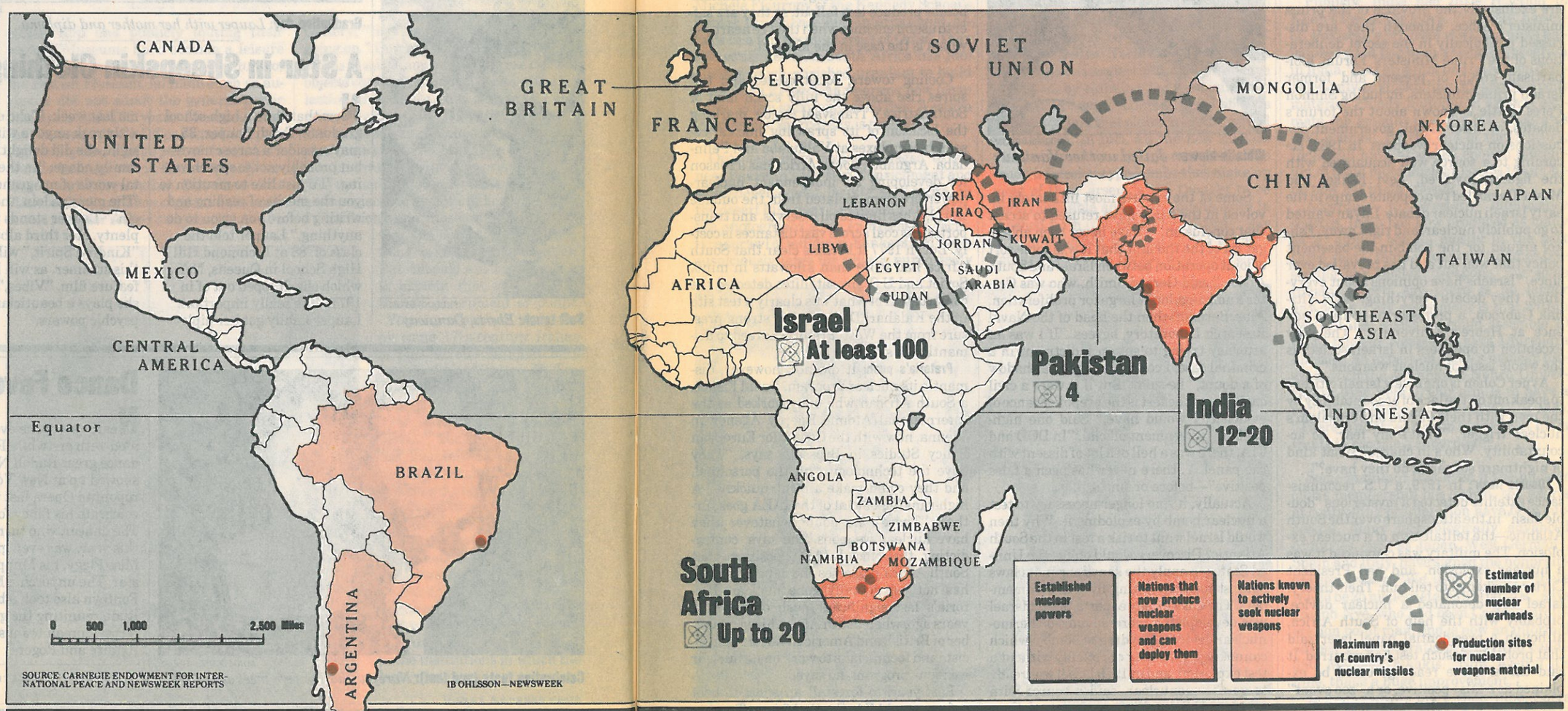
For years, the United States and other nuclear-club members tried to stop other countries from building the bomb. The nuclear nonproliferation treaty of 1968 eventually gathered more than 130 signatories, who agreed to forgo nuclear-weapons programs in return for help with nuclear power. A major international bureaucracy, the International Atomic Energy Agency, was established to monitor compliance and keep peaceful nuclear facilities from being converted to bomb factories. None of the major new proliferators has, however, signed the treaty; few of those that did sign ever had serious nuclear intentions. Among the nonsignatories, two other countries are in the nuclear homestretch: Argentina and Brazil, U.S. intelligence sources say. The CIA says Taiwan, despite repeated U.S. pressure, has tried to continue secret nuclear-weapon research efforts.

Reprocessing facility: The wonder, perhaps, is that more countries are not building nuclear weapons; it's not that hard. "If a country has only one very specialized chemical engineer, and if he can use a laboratory with good equipment, with time he can produce a sufficient amount of fissile material for one nuclear bomb," said Jacques Merlet, assistant director-general of Société Générale pour les Techniques Nouvelles (formerly Saint-Gobain Nucléaire), the French company said to have helped Israel build a reprocessing facility. "You don't need an industrial plant."

The ramifications of the bombs in the basement are nightmarish. In addition to their previous wars, India and Pakistan are now shooting at each other along the disputed border of Kashmir. India and China have ongoing border disputes, which have led to gunplay before. "One on one, the intellect has trouble dealing with the strategic problems," says François Heisbourg of London's International Institute of Strategic Studies. "But in Pakistan and India, there's a nuclear equivalent of a love triangle, with the superpowers watching over their shoulders." "The next time India and Pakistan go to war," says Leonard S. Spector, a leading proliferation expert with the Carnegie Endowment for International Peace, "each side must assume the other has a bomb."

Ten miles outside the Israeli town of Dimona, in the Negev desert, there's an unmarked road off the highway to the Dead Sea that leads to Israel's top-secret Dimona nuclear facility. At 8 each morning, fleets of buses cross the desert, taking nuclear workers home from the night shift and bringing a fresh crew on. Israel has by far the most ambitious nuclear program of any of the new club members.

Something of the full extent of that program became public two years ago when nuclear technician Mordechai Vanunu left Israel and told his story, supported with inside photographs of the Dimona plant, to The Sunday Times of London. Scientists like Theodore Taylor, one of the pioneers of the U.S. nuclear-weapons program, examined his information and found it credible. Although Vanunu never actually saw how many bombs had been stockpiled, the details he did provide led some experts to calculate that Israel had made as many as 200 nuclear bombs, based on the apparent output of its secret reactor and reprocessing plant. More conservative estimates—the ones believed by U.S. intelligence



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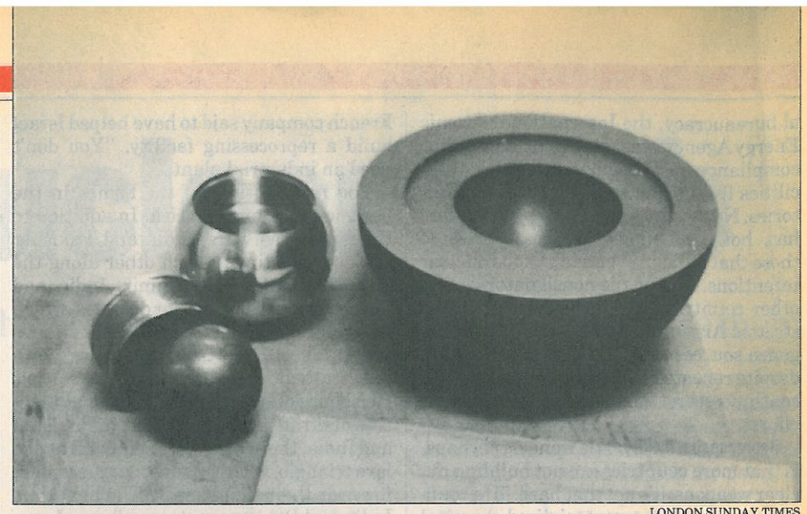
herers—put the number at about 100. lthough Israel denied Vanunu's ims, Mossad agents kidnapped him in ly and returned him to Israel, where he s tried this year as a traitor and sen- ced to 18 years in prison. "His convic- n doesn't mean it's necessarily true," l Emanuel Zippori, director of the Israe- Foreign Ministry's disarmament divi- n—an interesting office for a country t claims not to have nuclear weapons. ne very fact of his talking broke the law l made him culpable." Asked if Israel sesses nuclear weapons, Zippori said, hen that question is asked directly, re is usually no answer given." Israel s, however, have a policy position it en cites on nuclear weapons: "Israel l not be the first to introduce nuclear apons into the Middle East." "Nor," one aeli leader reputedly once said, "will it the second."

With even the Israelis left favoring nu- ar deterrence, there has been almost no olic debate about the country's weapons. ues such as when or if they would be used exclusively the province of the prime nister's office, although they are dis- sed periodically in the secret delibera- ns of the Prime Ministers' Forum, a bi- rtisan group of present and former aeli prime ministers, including Shimon es. Little is known about the forum's ates, or other Israeli government dis- sions on nuclear weapons. In 1962, ac- ding to a source well acquainted with figures involved, Levi Eshkol and she Dayan led two opposite camps in the ly Israeli nuclear debate. Dayan wanted o publicly nuclear, and right away. Esh- argued for the bomb-in-the-basement icy that won out and has prevailed ever ce. "Israelis have opinions about every- ng, they debate everything," said Yitz- k Gabroon, a professor of political sci- e at Hebrew University. "The only eption to openness in Israeli society is whole issue of nuclear weapons."

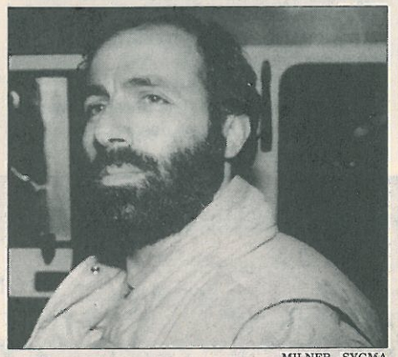
Avner Cohen is one of few Israeli citizens peak out on the lack of accountability by men with their fingers on Jerusalem's lear trigger. "That's my fear: no ac- ntability. Who's in charge? What kind ightmare scenarios do they have?"

Double flash': In 1979, a U.S. reconnais- ce satellite detected a mysterious "dou- flash" in the atmosphere over the South antic—the telltale sign of a nuclear ex- sion. The military was convinced it was nuclear explosion, and had President rter awakened to tell him. Their theory: ael had detonated a nuclear device, bably with the help of South Africa, hough a presidential panel later said t probably no such test had occurred. It d the satellite readings could be ex- ined as a false positive, or a "zoo event" to some atmospheric disturbance.



LONDON SUNDAY TIMES

The Israeli bomb: *Vanunu's photo of an atomic-bomb model inside Dimona*



MILNER—SYGMA

Whistle-blower: *Jailed worker Vanunu*

Some of the experts most intimately involved in the study have refused to accept that conclusion. "I have never been able to get rid of the thought that it was some sort of joint operation between Israel and South Africa," said Gerard Smith, who was Carter's ambassador at large for proliferation. Alan Berman, then the head of the Naval Research Laboratory, agrees. "If I was an attorney trying to get an indictment in a criminal case, I couldn't, beyond a shadow of a doubt," he said. "But if it were a civil case, where the test is the preponderance of evidence, I would have." Said one high-ranking government official, "In DOD and CIA, there was a hell of a lot of dissent with the panel . . . there never has been a false positive"—before or since.

Actually, it's no longer necessary to test a nuclear bomb by exploding it. Why then would Israel want to risk a test in the South Atlantic? Discovery would oblige the United States to apply the sanctions in its laws against nuclear testing by nonclub members. The answer, say experts, is that Israel was developing a more advanced thermonuclear device—a hydrogen bomb—which cannot be built safely or reliably without a test explosion, and in 1979 Israel was ready to go thermonuclear, said a source with access to U.S. intelligence reports. A thermonuclear bomb, which is actually detonated by a small atomic bomb, gives much higher explosive yields than atomic bombs. This means it can be made much smaller—making it more deliverable. There is another important advantage: thermonuclear bombs produce less fallout, so they are safer to use on enemies when they're nearby—which is the case in the Mideast.

Cooling towers, squat domes and tall spires rise above the hilly scrub land of South Africa's Transvaal region, marking the location of its sprawling nuclear-research complexes at Valindaba and Pelindaba. Arguably, South Africa has a reason for developing an independent nuclear-power program. Isolated from the outside world, it has limited oil reserves, and transporting its coal across vast distances is costly. But in 1977 it became clear that South Africa had more than kilowatts in mind. Soviet and U.S. spy satellites detected the construction of what was clearly a test site in the Kalahari Desert. After strong pressure from the West, Pretoria agreed to dismantle the site.

Pretoria's push: It did not, however, dismantle its nuclear program. David Fisher, a South African who once worked at the International Atomic Energy Agency in Vienna, now with the Center for European Policy Studies in Brussels, says, "They have the technology, and the personnel, and they could make a bomb quickly." A high-ranking official of the IAEA goes further: "There's no doubt whatever they have nuclear weapons," he says, contradicting the official IAEA position that South Africa possesses the capability, but has not yet actually gone nuclear. Pretoria's last significant push came three years ago, when South Africa hired a number of British and American nuclear physicists and technicians to work on its nuclear weapons program, he says.

Last year, to forestall an effort to boot it from the IAEA, South Africa offered to sign the nuclear nonproliferation treaty, which, among other things, would bring its uranium enrichment under international inspection. But since then it has reneged on its promise to sign the treaty. Although sources at IAEA say they have substantial anecdotal evidence from nuclear physicists who have worked in South Africa that Pretoria has developed nuclear weapons, U.S. intelligence sources are less certain. "We just don't have the intelligence assets in South Africa that we have elsewhere," says one source.

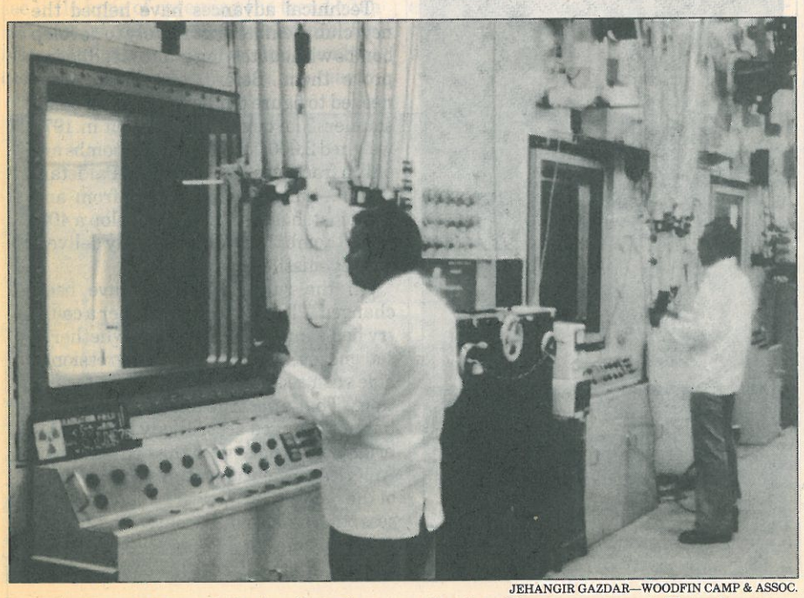
Eric de Montille, an official of the Foreign Affairs Ministry in Pretoria in charge of proliferation, denies his country has developed nuclear weapons—but not that it has the capability. "If you have a nuclear power plant, you have the capability," he said. "But who are we going to use it against, the African National Congress?"

"However illogical military and domestic uses of South Africa's nuclear arsenal may seem, they may not appear altogether unreasonable," write Kurt Campbell and Michèle Flournoy of the Kennedy School's Center for Science and International Affairs in a forthcoming issue of Orbis. They cite estimates that South Africa has produced enough enriched uranium to build from 13 to 21 nuclear weapons now (compared to the maximum of 20 that Western intelligence sources say is probable).

Outsiders have never managed to get near Pakistan's top-secret enrichment and bomb-development facility at Kahuta, in the desert hills near Rawalpindi. But satellite photographs show an extensive facility, a sprawl of buildings, bunkers and roads suspiciously large for what is purportedly an experimental effort to develop enriched uranium for fuel in an as yet unbuilt nuclear power plant.

The U.S. government has expressed concern about Pakistan's nuclear program for many years; since 1976, the Symington Amendment, aimed at Pakistan, has made the massive U.S. aid program conditional on whether Pakistan continues to try to build a nuclear bomb. But the administration has pressured a reluctant Congress into granting exemptions to the amendment, most recently last October for two years, in order not to endanger Pakistan's support for the anti-Soviet mujahedin, who are based in Pakistan. Each time, U.S. officials have maintained that Pakistan does not actually have a completed weapon. This, however, flies in the face of the administration's own intelligence gathering; both CIA and Defense Department officials are convinced Pakistan has made a complete bomb.

'One screw turn away': Despite that, the Reagan administration has repeatedly pressured Congress to grant exceptions to the Symington Amendment because of Pakistan's support for the U.S.-financed Afghan guerrillas. Technically, Pakistan's supporters can argue that they do not have a weapon, by claiming they are still "one screw turn away." United States officials have made just that claim in justifying aid to Pakistan. In fact, all the new nuclear members could make this argument. The crude implosion-type bombs that make up most of their arsenals are thought to be highly unstable and dangerous to store in finished form (the exception is Israel, say U.S. intelligence sources). So no prudent country with such bombs would put them on the shelf in completely assembled form.



JEHANGIR GAZDAR—WOODFIN CAMP & ASSOC.

Superpower ambitions: *India's plutonium-producing Cirus reactor at Trombay*

The best evidence of what Pakistan has been up to came last year, when A. Q. Khan, the head of Pakistan's nuclear program and a man known even in Pakistan as the father of its atomic bomb, gave an extraordinary interview to a group of journalists—including an Indian. Khan is widely credited with having purloined the enrichment process plans from a classified Dutch plant in which he worked as a metallurgist. "America knows it. What the CIA has been saying about our possessing the bomb is correct," Khan was quoted as saying. Later he repudiated the interview: Faced with Islamabad's evasiveness on possession of nuclear weapons, Khan disavowed his remarks, although they were said to have been taped by one journalist. No one present took the disavowal seriously. "It was clear," says Indian journalist Kuldip Nayar, "he was trying to send a message to India [that] Pakistan is here to stay and if you ever try to destroy us, we should use the bomb."

Publicly, India had little reaction to Khan's toss of the glove. Privately, however, Pakistan's progress toward a nuke galvanized what had been a dormant program in India. That program had once been dedicated only to stockpiling nuclear weapons material, chiefly plutonium; experts estimate the amount at some 300 kilograms (660 pounds). By the end of the century, India will have produced enough plutonium to build more nuclear bombs than China now has in its arsenal.

According to Western intelligence sources, India has now produced as many as 20 atomic bombs, mostly in the past three years. India strenuously denies possessing any nuclear weapons. But some Indian experts say there is no longer any doubt. "My assessment is that within two to three weeks we could assemble 20 to 40 nuclear weapons," says Dhirendra Sharma, an expert on India's nuclear program with the Jawaharlal Nehru University in New Delhi. "Our aim is to have a ballistic missile capacity by 1990," he adds. "There is no other reason except that India wants to become a superpower."

Some maintain that even if the nuclear club's membership has grown, the efforts at controlling proliferation have been successful. Many technologically advanced countries, such as Japan, West Germany, Spain and Italy, have signed the nonproliferation treaty. "We used to worry there would be 25 nuclear states by the '70s," says Joseph Nye, who had been Carter's proliferation point man, and is now an informal adviser to Democratic presidential candidate Michael Dukakis. "Now, even if it's nine, that's a huge improvement."

It may soon be more than nine. Some experts think Brazil and Argentina could

Testing Is No Big Secret

When India exploded what it called a "peaceful nuclear device" in 1974, it shocked the world into a version of retaliation. The original members of the nuclear club pushed through the nuclear nonproliferation treaty and cajoled, threatened or induced more than 130 nations to accept it. The U.S. Congress passed legislation requiring that aid be cut to nations that set off nuclear bombs and approved sanctions to punish those countries that continued working on nuclear-weapons technology. The price of exploding a test bomb just became too high for these countries politically, diplomatically and economically; since then, none of the developing nuclear powers has openly done so.

But the truth is that they no longer need to risk an explosion that will set off seismographs and satellite detectors all over the world. The new members of the club have been able to develop and test reliable nuclear weapons without exploding them. In a rare interview (which he later repudiated) with a group of Pakistani journalists and an Indian journalist, Dr. A. Q. Khan, father of Pakistan's atomic bomb, bragged that his country did not have to blow up a bomb: "The testing does not have to be done on the ground. It can be done in a laboratory through a simulator," he said. "Planes are flown after testing their capability in simulators."

In fact, the first atomic bomb dropped by the United States, the Hiroshima bomb, was only laboratory-tested in advance, since scientists were so certain it would work. The second bomb, the one dropped on Nagasaki, was pretested with the Trinity explosion in Nevada. But even in that case, scientists had little doubt it would explode as planned. The Nagasaki bomb was an implosion-type design in contrast to the gun type used over Hiroshima. And it is the implosion-type design that developing countries are now using.

Availability of components: Khan also said in the interview that Pakistan's task had been made much easier by the availability of many bomb components in Western countries. His alleged purloining of an entire uranium-enrichment facility from Holland saved Pakistan years in development of its own facility. "Indeed, it was difficult, particularly when America and other Western countries had stopped selling anything which could be used in manufacturing the bomb," he said. "But we purchased whatever we wanted before the Western countries got wind of it."

The new club members are aided in their theoretical and laboratory work by decades of observing the experience of other countries. Sometimes they have even been able to find important details in public literature: until the 1960s, for instance, the technology involved in producing enriched uranium for bombs was publicly available. During World War II, Manhattan Project scientists were able to do calculations that correctly predicted that their bomb design would work, but they had to do them virtually by hand because computers had not yet been developed. Now, mainframe computers easily available to Third World countries greatly speed up the theoretical calculations required for bomb design. In addition, new technical aids are available, such as sophisticated flash X-ray machines, which take a high-speed picture of the conventional-explosive detonation that triggers the atomic explosion. The nuclear core of an implosion-type bomb is surrounded by conventional high explosives, which implode the nuclear material to set off the chain reaction that gives an atomic explosion. The implosion has to be uniform to accomplish this. The flash X-ray can tell scientists if they have correctly designed this detonation—the most critical part of atomic-bomb construction. Pakistan has made many attempts to purchase flash X-rays and may have succeeded in buying one such machine from Sweden; South Africa is also thought to have acquired flash X-ray machines from Sweden.

ALAIN MOGUES—SYGMA

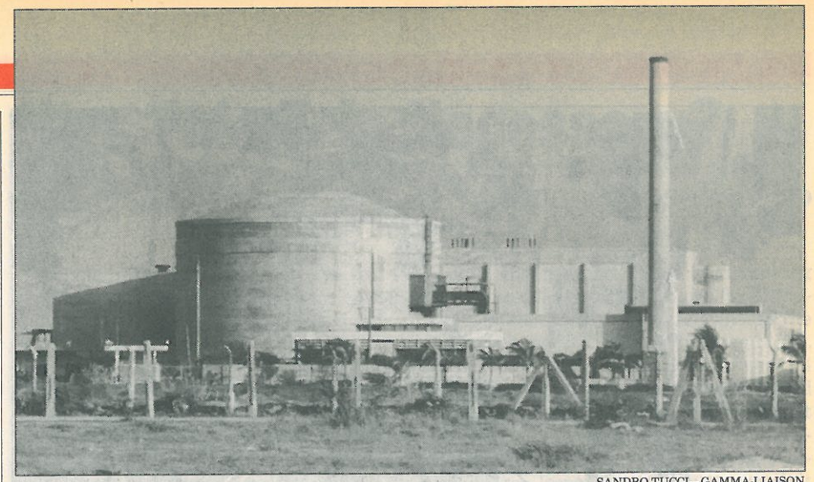
A thing of the past? *In the French Pacific*

Blueprints for bombs: Another technique available is the zero-yield test. Mock bombs, using conventional explosives, can now be used to judge a nuclear-bomb design. Exploded underground, these weapons tests would be almost impossible to detect—not through listening posts or satellites. Pakistan and Israel have the best deal of all: they have received blueprints for their bombs based on a proven design; from China, in Pakistan's case, from France, in Israel's case. Says Donald R. Westervelt of the Los Alamos National Laboratory: "The beginner state can unquestionably manufacture reliable weapons without conducting test explosions."

Technical advances have helped the new club members not merely to develop bombs without testing but to steadily improve them. Before, test blasts were needed to figure out how to make a bomb smaller. The device India set off in 1974 weighed 2,000 pounds; now its bombs are only a fraction of that size. And Pakistan, without suffering the fallout from any test blast, has managed to develop a 400-pound bomb that would be easily deliverable by missile or jet aircraft.

All the rules of testing have been changed. "The old test of whether a country had a nuclear weapon was whether it set one off," says a U.S. congressional aide with access to intelligence information. "That's not true now, but our policy has not changed accordingly." David Albright, a physicist with the Federation of American Scientists, states the position of the new nuclear powers. "You can possess before you test," he says, "but no one wants to admit it."

ROD NORDLAND



SANDRO TUCCI—GAMMA-LIAISON

The Islamic bomb: *Pakistani plutonium-reprocessing plant near Rawalpindi*

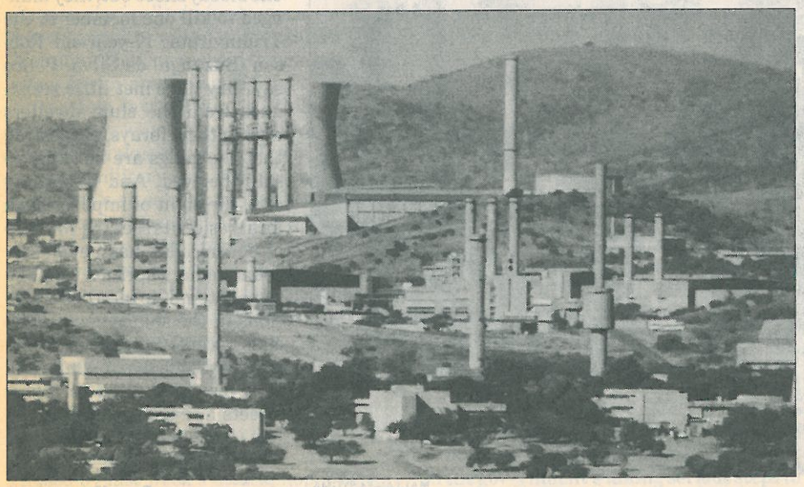
go nuclear in two years or so. While both are negotiating to join a nuclear-free zone, they have not yet—and Brazil's program remains the exclusive province of its powerful military, with a secret budget and little civilian overview. "Brazil is particularly worrying," said a key U.S. source. "They have done everything they would have to do to have an aggressive bomb program, and [scientifically] they're very good." In Iran, the Khomeini regime has expressed interest in rekindling the shah's once-ambitious nuclear program, which was assumed to include designs on bombs. Libya's Muammar Kaddafi has brazenly advertised his interest in buying a nuclear bomb, and even North Korea has taken nuclear steps that are military in nature, experts say. "Lately I've become rather depressed," says Ben Sanders, a veteran United Nations diplomat from Holland who once headed the diversion safeguards division at IAEA. "Now even the Nigerians are saying, 'We want nuclear weapons'."

In his forthcoming authoritative survey on nuclear proliferation, "The Undeclared Bomb," Carnegie's Spector writes that much of the proliferation battle has already been lost. "Probably the best we can do," he says, "is to freeze the status quo; it's hard to imagine that a country that has the bomb is going to give it up." In the report, which will be released later this year, Spector says: "Now that Pakistan has effectively got the bomb, the critical nonproliferation battle for the next administration will be stopping Argentina and Brazil ... they're still drifting toward the nuclear threshold and are going to cross it unless we can convince them to stop."

In frustration, U.S. policymakers who see little hope of reversing the trend often feel the best course is to just ignore proliferation. As long as the new club members don't trumpet what they have, the reasoning goes, their neighbors won't feel obliged to try to launch an arms race—although that's already happening on the subcontinent. "Better a bomb in the basement than on the front lines," says Nye.

The Reagan administration has never had the commitment to nonproliferation efforts that characterized the Carter years. During the Reagan years, the new nuclear powers all crossed the threshold, except for Israel, which may have had nuclear weapons since the early 1970s or before. New club members are quick to point to the superpowers' own arsenals, and Third World countries complain America has never objected publicly to the Israeli bomb. "We have the great difficulty of a double standard," acknowledged Ambassador Gerard Smith, "We know the Israelis have nuclear weapons and we never did anything about it." One high-ranking State Department official acknowledged that the issue of Israel's nuclear weapons is scarcely ever discussed bilaterally. "No country wants to make an issue of it," says Avner Cohen.

In 1973 the Israelis were very nearly overrun by the Arabs; would they have turned Cairo or Damascus into another Hiroshima if their survival was threatened? In 1976 Pakistan and India fought a bitter war that resulted in the humiliating loss of Bangladesh by Pakistan. If Pakistan had had nuclear weapons then, would it have used them? These are questions too weighty to ignore, especially when the answers may well be yes.



The apartheid bomb? *South African nuclear-research facility at Pelindaba*

New members: Still, no country has ever given up nuclear bombs once it has them. Perhaps, say some experts, the existing nuclear powers should just tell the new ones, "Welcome to the club." "We have to seriously consider the question of whether we should help these countries who already have the bomb with their command and control systems and other safeguards," says one former high-ranking U.S. official who had once campaigned for nonproliferation. Recognizing the new club members would also have the advantage of opening debate among them on issues such as the rules of engagement, thresholds of use—perhaps even disarmament. These issues, thoroughly explored by the superpowers, have been scarcely mentioned among their far less stable nuclear cousins.

One leading American expert suggests that the established powers might have to consider teaching the new nuclear powers how to develop a stable, "one-point safe" weapon, which presently is beyond the technical reach of the new club members (with the possible exception of Israel). Bombs that are not one-point safe can explode accidentally—if dropped, for instance. If Pakistan inadvertently set off a nuclear explosion at Kahuta, then India, only 35 miles away, might suffer extensive fallout damage. The very idea of discussing how to help emerging nuclear powers build better bombs, says David Albright of the Federation of American Scientists, is "a terrible admission of failure." The alternative, however, may be a refusal to recognize failure, and thereby at least manage to contain the damage.