

India Chemical Chronology

[2010-2001](#) | [2000-1999](#) | [1998-1996](#) | [1995-1992](#) | [1991-1980](#) | [1979-1920](#)

Last update: October 2008

**"As of October 2008, this chronology is no longer being updated.
For current developments, please see the India Chemical Overview.**

This annotated chronology is based on the data sources that follow each entry. Public sources often provide conflicting information on classified military programs. In some cases we are unable to resolve these discrepancies, in others we have deliberately refrained from doing so to highlight the potential influence of false or misleading information as it appeared over time. In many cases, we are unable to independently verify claims. Hence in reviewing this chronology, readers should take into account the credibility of the sources employed here.

Inclusion in this chronology does not necessarily indicate that a particular development is of direct or indirect proliferation significance. Some entries provide international or domestic context for technological development and national policymaking. Moreover, some entries may refer to developments with positive consequences for nonproliferation.

2010-2001

July 30, 2009

The Indian army carried out a successful test of the land attack variant of the BrahMos cruise missile at the Pokharan test range in Rajasthan state. According to a source, "with this launch, the requirement of Army for the land attack version with block-II advanced seeker software with target discriminating capabilities has been fully met and this version is ready for induction." This was the fourth test of the block-II variant this year, with the first resulting in failure. The land-attack BrahMos first entered into service with the Indian army in June 2007.

—Vimal Bhatia, "Army Test-Fires BrahMos Again," *The Times of India*, July 30, 2009,
<http://timesofindia.indiatimes.com>.

July 27, 2009

The indigenously developed Indian nuclear powered submarine, INS Arihant, which was launched for sea trials on July 26, and is expected to enter into service in the next few years, will be armed with the 700 km range nuclear capable K-15 ballistic missiles.

—T.S. Subramanian, "Nuclear-Powered Submarine To Be Fitted With Ballistic Missiles," *The Hindu*, July 27, 2009.

May 19, 2009

The Indian Army successfully tested the 3000 km-range, nuclear capable Agni-II ballistic missile. Following three successful tests, the missile is ready for production.

—"India Successfully Tests Nuclear-Capable Missile," *Press Trust of India*, May 19, 2009, BBC Monitoring South Asia
— Political, Lexis-Nexis.

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April 15, 2009

The Indian Army has successfully tested an improved variant of its nuclear capable 350 km-range Prithvi-II ballistic missile. The army has already inducted this missile.

—"India Test-Fires Surface-to-Surface Missile," *Press Trust of India*, April 15, 2009, BBC Monitoring South Asia — Political, Lexis-Nexis.

March 30, 2009

The block II version of the land-attack variant of the BrahMos cruise missile was tested for the third time. The first test, in January, had been a failure. The second test, on March 5, and the most recent test, were both successful. According to the Defence Research and Development Organization (DRDO), the missile is now ready for induction into the army.

—T.S. Subramanian, "BrahMos Launch Successful," *The Hindu*, March 30, 2009.

March 7, 2009

India successfully tested a missile interceptor over the Bay of Bengal in the Indian Ocean. A "hostile" missile was destroyed by the interceptor in the third successful trial of components of India's ballistic missile defense system since 2007.

—"India Tests Interceptor Missile," *The China Post*, March 7, 2009, www.chinapost.com.tw.

March 5, 2009

The block II version of the land-attack version of the BrahMos cruise missile was successfully tested at Pokharan. The earlier test of this variant, in January, was a failure.

—T.S. Subramanian, "New BrahMos Test Successful," *The Hindu*, March 5, 2009.

January 21, 2009

The January 20 test of the BrahMos cruise missile which had been termed as successful, in fact, resulted in the missile failing to hit the target, according to Indian defense scientists. The latest test was that of a block II version of the missile, which possesses advanced software that would allow the missile to select targets more efficiently. Older block I versions of the missile have already been deployed with the army.

—T.S. Subramanian, "BrahMos Missed the Target," *The Hindu*, January 22, 2009.

January 20, 2009

India has tested its BrahMos supersonic cruise missile at Pokharan in the state of Rajasthan. The missile can carry conventional and nuclear warheads, and has a range of 290 km. The missile is being developed for launch from a range of platforms.

—"India Tests Missile Amid Tensions with Pakistan," Reuters, January 20, 2009, www.reuters.com.

January 8, 2009

India has conducted talks with officials from the United States on the possibility of acquiring a missile defense system. The discussions were on a scientific and technical level and Indian officials also viewed computer simulations and attended live missile tests. According to a U.S. embassy official in New Delhi, "India is a partner of ours, and we want to provide it with whatever it needs to protect itself...This fits into the overall strategic

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partnership we are building."

—"India-US 'Missile-Shield Talks'," *BBC News*, January 8, 2009, <http://news.bbc.co.uk>.

2-5 December 2008

A five person Indian delegation attends the 13th Session of the Conference of States Parties in the Hague.

—*List of Participants to the Thirteenth Session of the Conference of the States Parties, C-13/INF.3/Rev.1*, Organisation for the Prohibition of Chemical Weapons, 5 December 2008, p. 39, www.opcw.org.

31 October 2008

The OPCW reports that as of this date India has destroyed 97.03% of its declared stockpile of chemical weapons. According to OPCW reports the remaining quantity of CW in India possession awaiting destruction is comprised of small amounts remaining after the draining of bulk-storage containers. India appears to be on course to destroy the remaining materials in time to meet its revised destruction deadline of April 2009.

—*Status report on the progress made by those states parties that have been granted extensions of deadlines for the destruction of their category 1 chemical weapons, C-13/DG.7*, Organisation for the Prohibition of Chemical Weapons, 14 November 2008, p. 3, www.opcw.org.

28 July 2008

Sanctions imposed by the US government against Balaji Amines Limited and Prachi Poly Products Limited under the Iran Nonproliferation Act in July 2006 expire. [see entry for 4 August 2006]

—Anya Loukianova "Last Round of INA Nonpro Sanctions to Expire Monday," Total Wonkerr, www.totalwonkerr.com.

9 April 2008

The Indian Permanent Representative, Ambassador Ms. Neelam D. Sabharwal delivers a formal statement at the 2nd CWC Review conference in The Hague. In her speech she announces that India has now completed the destruction of 97 percent of its declared CW stockpile and draws attention to several issues of importance to the Indian government. These include the need for the priority of industry inspections and the verification process more generally to be conducted in accordance with the hierarchy of risks established in the CWC's Annex on Chemicals. [This longstanding Indian position is in opposition to the efforts of many Western states to push for a realignment of the OPCW's verification efforts to concentrate great resources on inspections of other chemical production facilities (OCPF) such as those producing discrete organic chemicals using small batch reconfigurable facilities.] The Ambassador also proposes "the creation of a standing committee of governmental experts of States Parties as a permanent mechanism to thoroughly examine the finding reached by [the OPCW Scientific Advisory Board] SAB and prepare recommendations for the policy making organs of the OPCW." [This proposal is regarded with suspicion in some quarters as it is perceived to be an attempt to interpose a political filter between the SAB and the policy-making organs undermining the role of the SAB in providing independent scientific advice to the OPCW and its member states.]

—*Statement by Ambassador Ms. Neelam D. Sabharwal, Permanent Representative of India to the OPCW and Leader of the Indian Delegation to the Second Review Conference April 7-18, 2008*, www.opcw.org.

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4-7 March 2008

At the 52nd session of the OPCW Executive Council, meeting at OPCW Headquarters in the Hague, India's representative submits a document entitled "Report on CW Destruction Activities during the Extension Period after 29 April 2007." This report details progress that India has made in fulfilling its obligations to complete its CW destruction activities by its extended deadline of April 2009.

—"Summary of the Fifty-Second Session of the Executive Council," *Chemical Disarmament Quarterly*, p. 5.

20 January 2008

The Indian government announces that it has succeeded in destroying 93 percent of its Category 1 stockpile. India's final deadline for the destruction of its Category 1 chemical weapon stockpiles is 28 April 2009.

—"India claims to have destroyed 93 % of its chemical weapons," Associated Press of Pakistan, 20 January 2008, www.app.com.pk.

23 December 2007

Sanction imposed by the US government against Sabero Organic Chemicals Gujarat Ltd. and Sandhya Organic Chemicals Pvt. Ltd under the Iran Nonproliferation Act in December 2005 expire. [see entry for 23 December 2005]

—Anya Loukianova "Last Round of INA Nonpro Sanctions to Expire Monday," Total Wonkerr, totalwonkerr.com.

25 September 2007

The Director General of the OPCW provides an update on progress in destruction of chemical weapons stockpiles to the OPCW Executive Council in which he notes that as of 31 August 2007 India has destroyed around 86 percent of its Category 1 stockpile. India's final deadline for the destruction of its Category 1 chemical weapon stockpiles is 28 April 2009.

—Katie Smallwood, "Progress in the Hague," *The CBW Conventions Bulletin*, No. 76+77 (October 2007), p. 20.

26 June 2007

The Director General of the OPCW provides an update on progress in destruction of chemical weapons stockpiles to the OPCW Executive Council in which he notes that as of 1 June 2007 India has destroyed around 80 percent of its Category 1 stockpile. India's final deadline for the destruction of its Category 1 chemical weapon stockpiles is 28 April 2009.

—Katie Smallwood, "Progress in the Hague," *The CBW Conventions Bulletin*, No. 76+77 (October 2007), p. 19.

8 December 2006

The Eleventh Session of the OPCW CSP grants a Indian request to extend its final deadline for the destruction of its Category 1 chemical weapon stockpiles to 28 April 2009.

—*Decision: Request by India for an Extension of the Final Deadline for Destroying all of its Category 1 Chemical Weapons, C-11/DEC.16*, Organisation for the Prohibition of Chemical Weapons, 8 December 2006, www.opcw.org.

4 August 2006

The US State Department announces the imposition of sanctions on two Indian chemical manufacturers, Balaji Amines Limited and Prachi Poly Products Limited, are sanctioned for the sale of precursor chemicals to Iran that could have been used in the production of chemical weapons. The Indian companies are included in a group of

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seven companies, from four countries, penalized by the US government for violating the Iran Nonproliferation Act 2000, the purpose of which is to prevent Iran acquiring weapons of mass destruction.

—*The CBW Conventions Bulletin*, No. 74 (December 2006), p. 46; Sharon Squassoni, *India and Iran: WMD Proliferation Activities*, CRS Report CRS-2006-FDT-1575, 8 November 2006, p. 5.

29 December 2005

Responding to the decision of the US government to impose sanctions against it for exports of chemicals to Iran that might be of assistance to an alleged CW program Sandhya Organic Chemicals Pvt. Ltd. provides additional information on the activities that may have triggered the US government's actions. Sandhya states that "[w]e had exported approximately 1.5 M[etric] T[ons of] POCl₃ [Phosphorus oxychloride] to Iran and we have taken all necessary documentary permission [sic.] to export the item as per the CWC convention." The company denies any wrong-doing. The chemical in question is restricted under Schedule 3B of the Chemical Weapons Convention. As such it is recognized as a chemical manufactured and used in large quantities for legitimate industrial purposes that may also be of use in the production of chemical weapons. The US objection to the sale of this chemical relates to its potential role as a precursor for the production of Tabun (GA). Legitimate uses of POCl₃ include the production of insecticides, flame retardants, hydraulic fluids and semi-conductor silicon. The most likely use for the chemical in Iran would be for the manufacture of gasoline additives. When used in the production of GA the quantity of POCl₃ noted above would only be sufficient to produce approximately 1.5 metric tons of agent., a relatively small quantity.

—"US Sanctions Indian Firms For Chem Sales," Arms Control Wonk, 29 December 2005, www.armscontrolwonk.com; "The Chemical and Biological Warfare Threat" prepared by the Nonproliferation Center, Central Intelligence Agency, in *Global Proliferation of Weapons of Mass Destruction Pt. 1*, Hearing before the US Senate Permanent Subcommittee on Investigations, S. Hrg. 104-422, 31 October 1995, p. 511.

23 December 2005

The U.S. State Department announces the imposition of sanctions on two Indian chemicals companies for exports to Iran. The State Department states that the exported chemicals may be of assistance to alleged Iranian CW activities. The companies are Sabero Organic Chemicals Gujarat Ltd. and Sandhya Organic Chemicals Pvt. Ltd. The State Department does not specify the chemicals or the quantities transferred.

—Susan Krause, *U.S. Sanctions Nine Companies Under Iran Nonproliferation Act*, Bureau of International Information Programs, U.S. Department of State, 28 December 2005, <http://usinfo.state.gov>; Sharon Squassoni, *India and Iran: WMD Proliferation Activities*, CRS Report CRS-2006-FDT-1575, 8 November 2006, p. 5.

13 May 2005

On 13 May 2005, India's upper house of parliament passes legislation banning the proliferation of nuclear, biological, chemical, and missile technology. The Weapons of Mass Destruction and Their Delivery Systems (Prohibition of Unlawful Activities) Bill is passed by the lower house of parliament on 12 May 2005 and will become law as soon as it is signed by Indian President Abdul Kalam. The bill states that a person caught engaging in commerce in these technologies could face five years to a life in prison as well as a fine. The legislation covers Indians in India and abroad and foreigners residing in India.

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—"India's Upper House Approves Nuclear Bill," Agence France Presse, 13 May 2005; in Lexis-Nexis Academic Universe, 13 May 2005, www.lexis-nexis.com.

29 November 2004

Twenty years after the Bhopal, India gas disaster, American scientists prepare to recreate the accident under controlled conditions in the Nevada, U.S. desert. Emory University (Atlanta) professor Dr. V Ramana Dhara suggests that the experiment will provide valuable information on chemical emergency preparedness. Scientists with expertise in chemical engineering, toxicology, environmental health, exposure assessment, atmospheric sciences, ethics, and emergency preparedness will be involved in the unique project.

—Dinesh C. Sharma, "US Sees Defense Lesson in Bhopal Tragedy," *Hindustan Times*, 29 November 2004; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

November 2004

The Indian Council of Medical Research (ICMR) releases a report on the Bhopal disaster, 20 years after the accident. According to the ICMR report, an array of 21 chemical compounds - including about 10 unidentified ones - were found in the residue in the Union Carbide tank from which toxic fumes leaked. ICMR toxicological studies chief Dr. S. Sriramachari explains that some of these toxins, such as hydrogen cyanide, were also present in the blood and viscera of the dead as well as that of survivors.

—Dinesh C. Sharma, "US Sees Defense Lesson in Bhopal Tragedy," *Hindustan Times*, 29 November 2004; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

4 August 2004

The Indian Institute of Chemical Technology (IICT) proposes to set up a chemical weapons testing facility. According to IICT's director, Dr. J.S. Yadav, the Institute will approach the Ministry of Defence for funding. IICT will likely be the first Indian institute to receive the accreditation necessary to test chemical weapons, having crossed two stages of a three-stage test for certification with the Organization for Prohibition of Chemical Weapons (OPCW). The accreditation will authorize IICT to test domestic as well as foreign chemical samples.

—"IICT Plans Chemical Weapons Testing Lab," *Business Line*, 4 August 2004; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com; "IICT All Set to Get Accreditation for Testing Chemical Weapons (Will Authorize Indian Institute of Chemical Technology to Test Domestic Chemical Samples)," *Business Insight*, 4 August 2004; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

10 July 2004

The government of India restructures the position of National Security Advisor (NSA) so that the NSA, Mr. J.N. Dixit, can monitor all matters relating to the National Authority for the Chemical Weapons Convention.

—"J.N. Dixit Emerges A Key Player," *The Hindu*, 10 July 2004; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

1 June 2004

Delhi Police conduct a mock exercise to combat chemical warfare. The Central Industrial Security Force, the Indo Tibetan Border Police, and the Delhi Fire Service also participate in the exercise. A senior police officer describes

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the exercise as "based on the threat perception that an attack with chemical weapons can take place in the city."
—"Police Gear up for the next crime: chemical warfare," *Times of India*, 3 June 2004; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

11 February 2004

The Indian National Authority on Chemical Weapons conducts a chemical weapons awareness drive in the state of Gujarat. More than 50 percent of India's discrete organic chemical units are located in Gujarat, and many local manufacturers are unaware that the chemicals they produce are precursors to weapons-grade agents used in the creation of chemical weapons.

—"Weapons Grade Chemicals Made in Gujarat Factories (Over 50% of India's Discrete Organic Chemicals Unit are Located in Gujarat)," *Business Insight*, 11 February 2004; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

13 August 2003

Indian Vice-Chief of Army Staff Lt. General Shantonu Chowdhury announces, "We have radio intercepts that indicate terrorists could be making attempts to use chemicals and explosives" in the Jammu and Kashmir regions.

—"Army Official Notes Terrorists Plan to Use Chemical Weapons in Kashmir," *Global News Wire*, 14 August 2003; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

6 August 2003

The Indian government decides to allow the duty-free import of equipment and samples by an inspection team from the Hague-based Organisation for the Prohibition of Chemical Weapons (OPCW). The action is viewed by India's chemical industry as a prelude to surprise inspections by the OPCW of companies and plants which produce dual-use chemicals and chemical weapons precursors.

—Minocha, Naresh. "India to Permit Int'l Chemical Weapons Inspections," *Chemical News & Intelligence*, 6 August 2003; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

3 May 2003

Maharashtra Deputy Chief Minister Chhagan Bhujbal announces the seizure of lethal chemicals and some arms from two nearby militant training centers. The seizure comes in the aftermath of the arrest of six Students Islamic Movement of India activists with links to Lashker-e-Toiba and to Pakistan. Mr. Bhujbal claims that the seized materials include one kilogram of potassium cyanide, bottles of sulphuric acid, ammonium nitrate, nitric acid, as well as firearms.

—"India: Policy Seize 'Lethal Chemicals' Linked to Militant Groups," *BBC Monitoring South Asia - Political*, 3 May 2003; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

30 April 2003

The Indian Army's Public Relations Officer Lt.-Colonel S.P.K. Singh alleges that foreign mercenaries in the Jammu and Kashmir region have chemical weapons. He describes how Indian Army intelligence intercepted radio transmissions between guerillas reportedly instructing fighters to "look towards their containers" in the case of heavy losses to Indian federal forces.

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—"J&K Ultras Have Chemical Arms," *The Statesman*, 1 May 2003; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

25 April 2003

Pakistan alleges to the United States that India is using chemical weapons in Kashmir and asks that the United States intervene in the matter.

—"Pakistan: Daily Expects Armitage's Visit to Prove Breakthrough on Kashmir, Other Issues," Global News Wire, 25 April 2003; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

23 April 2003

The United Jihad Council accuses India of using "chemical weapons" against militants in "held Kashmir." The Council says in a statement, "India is using chemical weapons against the Mujahideen in sheer violation of all those international laws and principles whose implementation has been declared obligatory by the United Nations.

—"Pakistan: India Warned of 'Serious Repercussions' Against Use of Poisonous Gasses," Global News Wire, 24 April 2003; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

22 April 2003

The Organization for the Prohibition of Chemical Weapons (OPCW) Director General Rogelio Pfitter states that India is on target to meet the deadline for destroying some of its chemical weapons. He says that by 29 April 2003, India, the United States, and Russia, "will have destroyed the percentage of munitions and chemical agents that they have committed themselves to reduce under the (1993 chemical weapons) convention."

—Watchdog: US, Russia, India On Track to Reduce Chemical Weapons Stockpiles," Agence France Presse, 22 April 2003; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

11 April 2003

Pakistani Minister for Information and Broadcasting Shaikh Rashid Ahmed states that India is a "fit case" for pre-emptive strikes owing to its possession of chemical weapons. According to Ahmed, "As far as chemical and biological weapons are concerned, it is India that is active in this field. And it has stockpiled these weapons in neighboring countries." However, Indian Defense Minister George Fernandes and External Affairs Minister Yashwant Sinha reject Ahmed's allegations as false.

—"Pakistan Information Minister Reiterates India Fit Case for Preemptive Strikes," Global News Wire, 12 April 2003; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com; "Indian Defence Minister Rejects Pakistan's Biological, Chemical Weapons Charge," BBC Monitoring South Asia - Political, 11 April 2003; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com; "Pakistani Minister Says India Stockpiles Weapons in Other Countries," BBC Monitoring South Asia - Political, 22 April 2003; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

26 March 2003

An article in *The Hindu* newspaper, Mr. K. Sekhar, the director of the Defense Research and Development Establishment of the Indian Ministry of Defense, is quoted as saying, "If we are to protect our armed forces and our citizens, we have to develop our own medical armor. In fact, we have had to develop our own auto injectors

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loaded with a variety of antidotes for weapons like nerve gas which are supplied to our troops engaged in decontamination tasks." The article also states that the Mr. Sekhar's organization has recently perfected possibly the only known prophylactic, code named DRDE-07, for the most common gas warfare chemical, sulphur-mustard. —"Toxic Technology Challenges and Spin-Offs," *The Hindu*, 26 March 2003, in Lexis-Nexis Academic Universe, 6 April 2005, www.lexis-nexis.com.

19 February 2003

The United States announces sanctions on the Indian company NEC Engineers Private Limited for allegedly contributing to Iraq's biological and chemical weapons program. American officials say that NEC Engineers' transfers of biological and chemical materials to Iraq took place "over a period of time," including but not limited to 2002.

—"US Sanctions Indian Company for Selling Iraq WMD Materials," *The Washington Times*, 2 February 2003; in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

6 January 2003

In a comment on India's nuclear posture announcement, Pakistani Foreign Office Spokesman Aziz Khan says, "India's announcement to use nuclear weapons if attacked with biological or chemical weapons signals an important extension of India's policy of using nuclear weapons. This is further evidence that nuclear weapons and their use is very much a part of India's strategic policy."

—"Operation Against Terrorists Only by Pakistani Forces: FO," *The Pakistan Newswire*, 6 January 2003, in Lexis-Nexis Academic Universe, 16 February 2005, www.lexis-nexis.com.

5 January 2003

The Indian government announces a new nuclear posture that allows India to "retain the option of retaliating with nuclear weapons" in the event of a major biological or chemical attack against India or Indian forces anywhere.

—"India Establishes a Nuclear Command System," *The New York Times*, 5 January 2003, www.nytimes.com.

27 October 2002

In a public address, Prime Minister Atal Behari Vajpayee expresses concerns that chemical and biological weapons are difficult to detect; and that such weapons could fall into the hands of non-state actors.

—"Goals, Not Dates, First: PM," *Indian Express*, 27 October 2002; in Lexis-Nexis Academic Universe, 14 February 2005, www.lexis-nexis.com.

24 September 2002

British Prime Minister Tony Blair singles out the Indian company NEC Engineers Private Limited for "illicitly" helping Iraq in expanding its missile and chemical weapons arsenal. The Indian government, in response, finds Mr. Blair's "selective reference" to the Indian company "unfortunate" but it also accuses NEC Engineers of exporting sensitive equipment to Iraq.

—Shishir Gupta, "Arms Control: the Indian Connection," *India Today*, 14 October 2002, www.india-today.com.

6 September 2002

The Indian government defends its position to embargo certain chemicals to Iraq before the Delhi High Court,

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claiming the order was issued following intelligence reports that the Indian company NEC Engineers Private Limited might be actively assisting in Iraq's chemical weapons program. Indian government representatives Additional Solicitor General K.K. Sud and Jayant Bhushan tell the court, "This is a very serious matter which will harm India's interest and have international ramification. There are intelligence reports that these chemicals may be used to developing chemical weapons in Iraq." Senior advocate R K Anand, appearing for NEC Engineers, said the company was only an exporter buying the chemicals for use in manufacturing paints.

—"HC-Iraq," Press Trust of India, 6 September 2002; in Lexis-Nexis Academic Universe, 14 February 2005, www.lexis-nexis.com.

26 August 2002

India's Department of Revenue Intelligence (DRI) releases a report outlining its ongoing investigation of five subsidiaries of the Indian company NEC Engineers Private Limited for allegedly supplying technology and equipment to Iraq for its missile and chemical weapons programs. According to the DRI, NEC Engineers "actively assisted" Iraq in setting up a chlorine plant in Fallujah by exporting sensitive membranes and centrifugal pumps. India's external intelligence agency, Research & Analysis Wing (RAW), and appropriate U.S. agencies are also involved in the investigation.

—"Indian Firms Probed for Alleged Weapons Technology Sales to Iraq: Report," Agence France Presse, 26 August 2002; in Lexis-Nexis Academic Universe, 14 February 2005, www.lexis-nexis.com; Shishir Gupta, "Arms Control: the Indian Connection," *India Today*, 14 October 2002, www.india-today.com.

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—Shishir Gupta, "Arms Control: the Indian Connection," *India Today*, 14 October 2002, www.india-today.com.

6 September 2002

The Indian government defends its position to embargo certain chemicals to Iraq before the Delhi High Court, claiming the order was issued following intelligence reports that the Indian company NEC Engineers Private Limited might be actively assisting in Iraq's chemical weapons program. Indian government representatives Additional Solicitor General K.K. Sud and Jayant Bhushan tell the court, "This is a very serious matter which will harm India's interest and have international ramification. There are intelligence reports that these chemicals may be used to developing chemical weapons in Iraq." Senior advocate R K Anand, appearing for NEC Engineers, said the company was only an exporter buying the chemicals for use in manufacturing paints.

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—"Indian Firms Probed for Alleged Weapons Technology Sales to Iraq: Report," Agence France Presse, 26 August 2002; in Lexis-Nexis Academic Universe, 14 February 2005, www.lexis-nexis.com; Shishir Gupta, "Arms Control: the Indian Connection," *India Today*, 14 October 2002, www.india-today.com.

11 July 2002

India's military scientists say that they have developed safeguards against chemical, biological, and nuclear weapons. They assert that they did not violate any international conventions during their experiments. They state that they also have developed 26 items that allow them to detect and respond to a chemical or nuclear attack.

—Pratap Chakvarty, "India Readies Nuclear Shelters, Trains Military Against First Strike," Agence France Presse, 11 July 2002, International News.

4 July 2002

Shri Tapan Sikdar takes over as the Minister of State for Chemicals and Fertilizers.

—"Tapan Sikdar Takes Over as Minister of State for Chemicals and Fertilizers," Press Information Bureau, Government of India, 4 July 2002, <http://pib.nic.in>.

21 June 2002

The Defense Research and Development Organization (DRDO) laboratory, Gwalior, develops First Aid Kits for nuclear, biological and chemical warfare. The kits are split into two groups-Type A and Type B. Type A provides support for four to six personnel, while Types B is for 50-60 personnel. Type A kits contain an inhaler, antibiotics, antipyretic tablets, dressing pads, personal decontamination kit, and three-color detector paper. Type B kits contain essentials medicines, drugs, injectibles, syringes, dressing materials, detector paper, and a water testing kit. Both kits are already entered into service.

—"First Aid Kit to Treat NBC Injuries Developed," Press Information Bureau, Government of India of Indian Press Release, 21 June 2002, <http://pib.nic.in>.

19 June 2002

The Defense Research and Development Organization (DRDO) laboratories in Gwalior and Ahmednagar develop a nuclear, chemical, and biological decontamination system.

—"NBC Decontamination System Developed," Press Information Bureau, Government of India of Indian Press Release, 19 June 2002, <http://pib.nic.in>.

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7 June 2002

Dr. A.K. Walia, New Delhi's health minister is quoted as saying that the capital is ready for all levels of attack, including a biological or nuclear attack. He also says that some hospital workers have received special training in how to respond to a chemical attack and that India had ordered three mobile hazardous chemical units from Germany.

—Edna Fernandes, "India Prepares For The Prospect of Nuclear War; Civil Defense Mass Production Ordered of Shelters Able to Withstand Nuclear Attack; A National Contingency Plan For The Masses Has Been Put on Standby in Recent Days," *Financial Times*, 7 June 2002, p. 12.

23 May 2002

Integrated Field Shelter is developed. The shelter is designed to provide collective personnel protection from nuclear, chemical, or biological agents. The shelter was developed by the Research and Development Engineers, Pune, which is part of the Defense Research and Development Organization (DRDO) and is designed to accommodate thirty people for 95 hours.

—"Integrated Field Shelter for Protection from Nuclear, Biological and Chemical Agents Developed by DRDO," Ministry of Defense Press Release, 23 May 2002, <http://mod.nic.in>.

1 March 2002

India signs a deal with Polish SKO-1T Drawa-T Thermal Imaging Fire-Control Systems to update 250 of its T-72 tanks. The deal will allow India to update its tanks nuclear, biological, and chemical defense systems.

—Grzegorz Holdanowicz and Rahul Bedi, "India Signs T-72 Upgrade Deal," *Jane's*, 20 March 2002, www.janes.com.

3 January 2002

Rajeev Pandia, President of the Indian Chemical Manufacturers Association, states that Indian chemical industry with its proven research and development can lend itself as a major outsourcing zone for the global chemical manufacturers.

—"Chemicals Sector Set For Outsourcing: Pandia," *The Times of India*, 4 January 2002, www.timesofindia.com.

30 December 2001

India completes destruction of its declared Category 3 chemical weapons.

—WGRC-1/s: Annex 2, p. 29.

4 December 2001

In a statement to the Executive Council of the OPCW, the General Secretary states that India has destroyed 29 percent of its Category 1 CW agents and over 39 percent of one declared Category 2 CW agent.

—Opening Statement by the Director-General to the Executive Council at its twenty-seventh session, 4 December 2001.

26 November 2001

Addressing Senior Commanders of the Armed Forces, Prime Minister Atal Behari Vajpayee states that the Defense Research and Development Organization is "often hamstrung by unreasonable and discriminatory technology control regimes."

Related content is available on the website for the Nuclear Threat Initiative, www.nti.org.



—"Prime Minister Addresses Combined Commanders Conference," Press Information Bureau, Government of India, India, issued 26 November 2001.

24 October 2001

The Indian Defense Research and Development Establishment is asked to conduct training programs on all aspects of biological and chemical warfare for civilian authorities.

—P. Sunderarajan, "India: Training to Tackle Biological Warfare," *The Hindu*, 25 October 2001.

18 October 2001

The Department of Chemicals and Petrochemicals de-licenses 19 of the 22 chemicals that had been kept under compulsory license. The remaining three are hydrocyanic acid and its derivatives; phosgene and its derivatives, and Isocyanates and Diisocyanates.

—"New Goal & New Initiative," Press Information Bureau, Government of India, 18 October 2001, <http://pib.nic.in>.

10 October 2001

The Indian Government asks Hindustan Fluorocarbons Ltd to adopt the recommended procedure for disposal of Perfluoro Isobutylene, a Schedule 2 toxic chemical, per the Chemical Weapons Convention.

—"India: Bid to go by Treaty on Chemical Arms," *Business Line*, 17 October 2001.

October 2001

Indian intelligence reports that it had intercepted a Lashkar-e-Toiba communication that indicates the (terrorist) group has smuggled a large amount of lethal gas into India.

—"Security Agencies Alerted on Lethal Gas," *The Times of India*, 15 October 2001.

5 September 2001

India and the United Kingdom participate in the third round of talks of the India-U.K. Formalized Dialogue on Non-proliferation and Disarmament in London. The two sides discuss the chemical and biological conventions, as well as export controls.

—"Indian and UK officials Hold Non-Proliferation Talks," IRNA, 5 September 2001, www.irna.com.

August 2001

OPCW inspectors declare the complete destruction of one declared Category 2 CW agent in India.

—Opening Statement by the Director-General to the Executive Council at its twenty-seventh session, 4 December 2001.

July 2001

At the Indo-Russian Joint Council for ILTP in Moscow, India and Russia both identify 146 new joint research and development projects. These projects will cover field like biotechnology, immunology, bio-medical sciences, and chemical sciences.

—Anders Axelsson, Pal Jonson, Anders Lindblad, Lena Norlander, Anders Norqvist, Wilhelm Unge, and Lars Wigg, "Indian and Pakistani Weapons of Mass Destruction in a Security Policy Context: A Comprehensive Analysis of Capabilities, Objectives, and Consequences," Swedish Defense Research Agency, March 2002.

Related content is available on the website for the Nuclear Threat Initiative, www.nti.org.



5-10 May 2001

India conducts "Operation Complete Victory" in the Pokharen desert. The exercise involves military maneuvers, and for the first time India incorporates chemical, nuclear, and biological weapons into the scenario. The exercise also tests new equipment such as protective gear, decontamination routines, and electronic warfare systems for battle in a contaminated area.

—*The CBW Conventions Bulletin*, No. 53 (September 2001), p. 26; Anders Axelsson, Pal Jonson, Anders Lindblad, Lena Norlander, Anders Norqvist, Wilhelm Unge, and Lars Wigg, "Indian and Pakistani Weapons of Mass Destruction in a Security Policy Context: A Comprehensive Analysis of Capabilities, Objectives, and Consequences," Swedish Defense Research Agency, March 2002; "India's 'War Hysteria' Threatens Regional Peace," *Khabrain in Urdu*, 12 May 2001, available from FBIS, document identification number SAP20010515000028.

10 April 2001

In meetings between External Affairs and Defense Minister Jaswant Singh and visiting US officials, India states that it believes that chemical and biological weapon present a greater danger than nuclear weapons. India believes that these weapons are more dangerous because of the ease of which they can be procured by international terrorist groups.

—*The CBW Conventions Bulletin*, No. 52 (June 2001), p. 53.

February 2001

An assessment by the German Bundesnachrichtendienst (BND) states that the company NEC has acted as a buyer of equipment for the al-Mamoun chemical factory in Iraq. The report also states Indian companies are involved with 80 chemical projects, with 20 of those suspected of being used for chemical weapons production.

—Johannes Leithaeuser, "Saddam Expands Weapons Programs, Report says," *Allgemeine* in English, 24 February 2001, in FBIS Document EUP20010224000093; Georg Mascolo, "Big Plans and Shoddy Businesses," *Der Spiegel in German*, 26 February 2001, FBIS Document EUP20010226000071; Roger Boyes, "Iraq Builds Chemical Weapons System 'Capable of Hitting European Cities'," *The Times* (UK), 26 February 2001.

31 January 2001

Sarita Prasad is appointed Chairperson of the National Authority for the Chemical Weapons Convention.

—"India: N.K. Singh Appointed OSD in PMO," *The Hindu*, 31 January 2001.

18-19 January 2001

In an inaugural address to a two-day seminar on nuclear, biological, and chemical defense in Lonavala, Indian Vice-Admiral Harinder Singh calls for "urgent steps to meet the asymmetric threats in the form of chemical and biological weapons emerging from the low-intensity proxy wars." Another speaker, Indian Vice-Admiral A.S. Krishnan, states that CBW appears to be gaining a slow but steady foothold in the form of use of chemical and biological agents against military and civilian groups. In addition, Krishnan states that a Nuclear, Biological, and Chemical (NBC) defense doctrine has been drafted along with the creation of joint services institute for NBC warfare that has been proposed at the College of Military Engineering in Pune.

—*The CBW Conventions Bulletin*, No. 51 (March 2001), p. 44; Lonavia V. Radhika, "Armed Forces to Formulate Defense Against Nuclear Attacks," *Indiainfo.com*, 19 January 2001, news.indiainfo.com.

Related content is available on the website for the Nuclear Threat Initiative, www.nti.org.



17 January 2001

Indian Chief of Army Staff General Sunderajan Padmanabhan states that India will emphasize upgrading its equipment such as main battle tanks and armored personnel carriers to provide protection from a nuclear, biological or chemical attack.

—Rahul Bedi, "Gen Sunderjajan Padmanabhan India's Chief of Army Staff," *Jane's*, 17 January 2001, www.janes.com.

[Back to Top](#)

2000-1999

December 2000

The OPCW Executive Council reviews plans for the destruction and conversion of Indian chemical facilities.
—*The CBW Conventions Bulletin*, No. 50 (December 2000), p. 13.

8 November 2000

The OPCW conducts the eighth lab proficiency test to be a reference laboratory for CWC treaty verification. Twelve labs participated in the test, with one Indian lab passing and two failing the test.
—*The CBW Conventions Bulletin*, No. 52 (June 2001), p. 13.

3 October 2000

Raja Israr Abbasi, an opposition leader in the Azad Kashmir Assembly, accuses India of using chemical weapons in Kashmir. The *Pakistan* also reports that India is using chemical weapons in Kashmir along the Line of Control as several people are dying due to "various kinds of diseases."
—*The CBW Conventions Bulletin*, No. 50 (December 2000), p. 39.

28 August 2000

An article published in *The Gazette* points out that the Chemical Weapons Convention Bill, 2000, has many spelling errors, causing a major embarrassment for the government.
—Akshaya Mukul, "Jaitley to Decide on Mistakes in Act," *The Times of India*, 9 August 2001, www.timesofindia.com.

16 August 2000

The lower house of the Indian Parliament, Lok Sabha, approves the Chemical Weapons Convention Bill. With the approval of the bill, a national authority will be set up to fulfill India's obligation under the treaty.
—"Indian Parliament approves Chemical Weapons Convention Bill," All India Radio Home News Service in English, 16 August 2000, available from FBIS, document identification number SAP20000816000069.

26 July 2000

India's Upper House of Parliament, Rajya Sabha, passes the Chemical Weapons Convention Bill, 2000. The bill makes the CWC part of Indian domestic law.

Related content is available on the website for the Nuclear Threat Initiative, www.nti.org.



—"Indian Upper House Passes Chemical Weapons Convention Bill," *Xinhua in English*, 26 July 2000, available from FBIS, document identification number CPP20000726000172.

6 May 2000

The Statesman reports that India is reviewing its Chemical Weapons Implementation legislation. India is now reportedly drafting a bill to deny or restrict OPCW inspections where it felt that its national security interests were at stake. Also India is thinking of implementing a law that would prohibit samples taken from sites in India from leaving the country.

—*The CBW Conventions Bulletin*, No. 48 (September 2000), p. 26; "Bill to Restrict Arms Inspection Insecurity Interests," *The Statesman*, 6 May 2000.

20 April 2000

In Washington, DC, senior US and Indian officials conclude talks on tightening India's chemical export regulations and bringing them on par with US guidelines.

—"India to Bring Export Control Norms at Par With US," *The Times of India*, 20 April 2000.

27 March 2000

As part of a military agreement between India and Vietnam, India agrees to give Vietnam all of its research on countering chemical weapons effects. India agrees to release the data because Vietnam continues to claim reproductive abnormalities caused by Agent Orange in third generation children.

—*The CBW Conventions Bulletin*, No. 48-Supplement 2 (June 2000), p. 16.

19 March 2000

The Indian Defense Ministry places orders for thousands of nuclear, biological, and chemical suits from the Ordnance Factory Board (OFB). The ministry also asks the OFB to speed up its production of sophisticated gas masks. The suits are to be manufactured at ordnance factories at Kanpur and Avadi located in Tamil Nadu.

—"Defense Brass places Orders For N-suits," *Hindustan Times*, 19 March 2000.

20 January 2000

The Pakistani English-language newspaper *The News*, reports that Pakistani defense officials are becoming increasingly concerned about India's continued research in the field of chemical weapons. According to the unidentified officials India had supplied Iraq with phosgene before the Gulf War to test its effectiveness. They also accuse India of using chemical weapons during the Kargil crisis in 1999.

—*The CBW Conventions Bulletin*, No. 47 (March 2000), p. 38.

January 2000

During the third meeting of the US-India Counterterrorism Working Group, the Indian government accepts a US offer for a seminar on countering chemical, biological, nuclear, and radiological terrorist threats.

—"US, India on Growing Global Menace of Terrorism," US Department of State, 26 July 2001, www.state.gov.

2000

A report on chemical weapon threats to China claims that before India signed the Chemical Weapons Convention,

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it made a crash production of chemical weapons so that it could have the status of "chemical weapons possessor state." Chinese chemical weapon defense writers noted that India possesses five chemical weapons production and storage facilities with 1,000 tons of chemical weapon agents. The report goes on to state that most of the agents are mustard and that thousands are ready for delivery.

—Chen Jisheng, "Analysis of Chemical and Biological Weapons in the 21st Century and Arms Control Developments," *Fanghua Yanjiu*, No. 1, 2000. p. 45.

2000

The OPCW Annual Report states that India had met its year 2000 obligation in the destruction of chemical weapons. Also the report states that 23 inspections were done in India during 2000, with 16 at Chemical Weapon Development Facilities, 5 at Chemical Weapon Production Facilities, 3 at Chemical Weapon Storage Facilities, one of a Schedule 1 facility, and two at Schedule 3 facilities. In addition, the report says that India plans to destroy its Schedule 2 and Schedule 3 stockpile of weapons by 29 April 2002. With this India declares it has four Schedule 2 sites, but only one is available for inspection, while it declares 24 Schedule 3 sites, with 19 that can be inspected. India also declares that it has 20 Discrete Organic Plants.

—*OPCW Annual Report*, 2000.

December 1999

The Executive Council of the OPCW adopts six facility agreements with India for a Schedule 1 facility, three Chemical Weapons Production Facilities, and two Chemical Weapons Storage Facilities, all at undisclosed locations in 2000.

—*The CBW Conventions Bulletin*, No. 46 (December 1999), p. 14.

December 1999

India submits its annual report on the destruction of Category 3 chemical weapons.

—*The CBW Conventions Bulletin*, No. 46 (December 1999), p. 13.

23 November 1999

The OPCW Secretariat issues a corrigendum to its 1998 report, declaring India as a party that had declared its Chemical Weapons Production Facilities under Article V of the Chemical Weapons Convention.

—*The CBW Conventions Bulletin*, No. 46 (December 1999), p. 17.

8 September 1999

An editorial in the Pakistani newspaper *Jang*, accuses India of using chemical weapons in the Neelum valley in Kashmir. The article uses the death of two uninjured children at a border village as evidence of the attack.

—*The CBW Conventions Bulletin*, No. 46 (December 1999), p. 27.

September 1999

The Defense Research and Development Establishment, Gwalior, submits two patents for filing. One is for an improved process for chemical destruction of sulfuric acid. The second is for a process for the preparation of s-alkyl-aryl sulfide di-hydrochlorides.

—"DRDO Patent," *DRDO Newsletter*, Vol. 19, September 1999 No. 9.

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2 July 1999

The OPCW releases its annual report on implementation of the Chemical Weapons Convention for the year 1998. The report credits India with declaring its chemical stockpile. It also goes on to state that India has made declarations of either past or present capabilities to produce chemical weapons.

—*OPCW Annual Report 1998* (The Hague: Organization for the Prohibition of Chemical Weapons, 1998), www.opcw.org

17 June 1999

The US Department of State's spokesperson, James Rubin, states that the Clinton administration has found no evidence that India has used chemical weapons in Kashmir.

—"US Rejects Pak Claim on Chemical Arms," *The Hindu*, 17 June 1999, News.

14 June 1999

Pakistan accuses India of using chemical weapons in Kashmir and states that it is testing the shells that are fired into its Kashmiri territory.

—Hema Shukla, "India Battles Rebel Forces in Kashmir; Talks with Pakistan fail to ease Tensions," *The Atlantic Journal and Constitution*, 14 June 1999, p. 3A.

14 June 1999

Kashmiri politicians and militant groups condemn India's alleged use of chemical weapons in Kashmir.

—"Kashmiri Groups Condemn Alleged Use of Chemical Weapons," Agence France Presse 14 June 1999.

12 June 1999

According to Pakistan Television, India uses chemical weapons against Pakistani position along the Line of Control in Jammu and Kashmir. According to reports shell are launched that exploded 400 meters above ground, releasing a gas that causes suffocation and skin irritation. India describes these reports as "baseless" and as part of "Pakistani propaganda."

—*The CBW Conventions Bulletin*, No. 45 (September 1999), p. 29.

7 June 1999

Hafiz Mohammad Saeed, Chief of Markaz al Dawat al Irshad, accuses India of preparing to use chemical weapons against the Kashmiri Mujahideen. According to Saeed, India is preparing to use these weapons because it is disheartened after having been defeated by the Pakistani army and the Mujahideen.

—"Urdu Daily: India to Use Chemical Weapons on Mujahideen," *Khabrain in Urdu*, 7 June 1999, FBIS, document identification number BK0706114599.

June 1999

India submits to the fifteenth session of the Council for OPCW agreed detailed plans for the verification of the destruction of chemical weapons at Chemical Weapon Destruction Facilities.

—*The CBW Conventions Bulletin*, June 1999, Issue Number 44, p. 10.

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26 May 1999

India denies reports that it is using chemical weapons in Kashmir. The US State Department also states that it has no evidence that India is using these weapons in Kashmir.

—*The CBW Conventions Bulletin*, No. 44 (June 1999), p. 46.

26 May 1999

Unidentified Pakistani sources state that India uses a "nerve gas bomb" against Kashmiri Mujahideen on the Pakistani side of Kashmir.

—*The CBW Conventions Bulletin*, No. 45 (September 1999), p. 23.

May 1999

The Indian Army claims it seized Pakistani document that indicates the presence of chemical weapons in the Kaksar area of Kashmir.

—Anders Axelsson, Pal Jonson, Anders Lindblad, Lena Norlander, Anders Norqvist, Wilhelm Unge, and Lars Wigg, "Indian and Pakistani Weapons of Mass Destruction in a Security Policy Context: A Comprehensive Analysis of Capabilities, Objectives, and Consequences," Swedish Defense Research Agency, March 2002.

7 March 1999

In a meeting with the Director General for the OPCW, Pakistan Foreign Minister Sartaj Aziz accuses India of preparing and stockpiling chemical weapons.

—"Aziz: Pakistan Not Manufacturing Chemical Weapons," *Al-Akhbar in Urdu*, 7 May 1999, FBIS, document identification number BK0903081199.

1999

India destroys 1 percent of its chemical weapons stocks as part of its obligation under the Chemical Weapons Convention.

—Ron G. Manley, "Overview of The Status of The Chemical Demilitarization Worldwide and The Way Ahead," Organization for the Prohibition of Chemical Weapons, August 2000, www.opcw.org.

1999

A total of 15 OPCW inspections are carried out in India. Four are at a Chemical Weapons Destruction Facility, six at a Chemical Weapons Production Facility, two at a Chemical Weapons Storage Facility, one inspection is done of Schedule 1 chemicals, and two inspections are conducted for Schedule 3 chemicals.

—*OPCW Report*, 1999.

[Back to Top](#)

1998-1996

31 December 1998

The Indian Army begins training its medical personnel to deal with contingencies arising from the potential use of

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chemical, biological, or nuclear weapons. Training for the fallout of a chemical, biological, or nuclear attack had been done earlier at the college of Military Engineering.

—"Army is Training Doctors to Deal With Nuclear War," *The Asian Age*, 31 December 1998.

December 1998

The Indian military conducts a ten-day long war game exercise in the Thar desert of western Rajasthan, close to the border of Pakistan. Code-named "Exercise Shiv Shakti," nearly 60,000 troops participated in the exercise, which included "testing Indian planning on conducting and surviving nuclear and chemical war using modern technology and new tactics."

—Dr. Jassim Taqui, "Sanctions Can Be Re-Imposed on Pakistan," *Global News Wire*, 13 September 1999.

December 1998

India conducts military exercises in Rajasthan. The exercises involve maneuvers to protect troops from nuclear, chemical and biological attack.

—"Signals, Indians Exercise in a Big Way," *Jane's Defence Weekly*, 1 January 1999, Edition 1999, Volume 104/001.

29 November 1998

The Indian military carries out maneuvers that involve chemical weapons exercises.

—*The CBW Conventions Bulletin*, No. 43 (March 1999), p. 24.

24 June 1998

An Indian government statement states that the Indian government will allow the export of Schedule 3 chemicals to countries that are signatories of the Chemical Weapons Convention. Companies wishing to export Schedule 3 chemicals will have to provide end-user certificates within 15 days of the actual export date.

—"Indian Government Permits Weapons-Grade Chemical Exports," *Asia Pulse*, 24 June 1998, Nationwide Financial News.

2 June 1998

The Rajya Sabha, the upper house of Parliament, passes the Chemical Weapons Convention Bill, 1997, thus implementing the CWC into Indian law.

—*The CBW Conventions Bulletin*, No. 41 (September 1998), p. 26.

June 1998

The Defense Ministry agrees to open up eight Defense Research and Development Organization (DRDO) laboratories to industry use.

—"CII-DRDO Joint Initiatives," www.ciidefence.com.

19 May 1998

The Indian Cabinet approves submission to Parliament of a bill on domestic implementation of the Chemical Weapons Convention.

—*The CBW Conventions Bulletin*, No. 40 (June 1998), p. 37.

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May 1998

The United States imposes sanctions on 200 Indian companies for undertaking the nuclear weapons tests in Pokhran. As a result of these tests, both India and Pakistan (which, also tested nuclear weapons in retaliation) are heavily sanctioned by the United States.

—"India-Pakistan Sanctions Legislation Fact Sheet," 11 July 2001, www.clw.org.

11 March 1998

Pakistani Foreign Minister Ayub Khan states that India possesses chemical weapons and can use them against Pakistan.

—Sayuri Saito, "Japan Urged to Take Role in Afghan Peace Process," *The Daily Yomiuri*, 12 March 1998, p. 3.

22 February 1998

In Bangalore, Indian defense science advisor A.P.J. Abdul Kalam states that the intermediate range Agni missile had the capability to carry a nuclear, biological, or chemical warhead.

—*The CBW Conventions Bulletin*, No. 40 (June 1998), p. 24.

4 January 1998

In Pakistan, the daily newspaper *Jasarat*, reports that India has yet to sign the Chemical Weapons Convention. [Note: Perhaps the authors intended to say "ratify" and not "sign" as India was a signatory to the CWC by this date.]

—*The CBW Conventions Bulletin*, No. 39 (March 1998), p. 33.

22-25 November 1997

The Secretariat of the OPCW visits India and meets with senior officials and personnel of the National Authority.

—*The CBW Conventions Bulletin*, No. 38 (December 1997), p. 14.

15-20 September 1997

The Defense Research and Development Establishment (DRDE) offers a Continuing Education Program (CEP) course entitled "Hazards in Chemical Laboratory Prevention & Protection Methods."

—Defense Research & Development Establishment manual, www.drdo.org.

8 August 1997

An OPCW team inspects the chemical laboratory in Ozra, India.

—R. Bedi, "Indian Chemical Bases Come Under Scrutiny," *Jane's Defense Weekly*, vol. 28, no. 6, 13 August 1997, p. 5; Rahul Bedi, "International Team Inspects Chemical Weapons Facility," *South China Morning Post*, 6 August 1997 p. 12; *The CBW Conventions Bulletin*, No. 38 (December 1997), p. 21.

7 August 1997

In a speech to the Lok Sabha, the lower house of Parliament, India Prime Minister Inder Kumar Gujral states that India still reserves the right to pull out of the Chemical Weapons Convention. Gujral says that India will take such action only if it views that its security is at risk. Gujral also emphasizes that India is no longer producing chemical weapons, but continues to possess such capabilities in order to restrain the aggressive designs of countries that

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have not given up the idea of using these weapons against India.

—Leonid Kotov, "India Reserves Right to Quit Chemical Weapons Ban Convention," TASS, 7 August 1997.

Early August 1997

A ten-person team of inspectors from the Organization of the Prohibition of Chemical Weapons (OPCW) conducts an inspection of a Defence Research and Development Organisation (DRDO) facility involved in chemical weapons production. The facility is located at Ozra (near Nashik, Maharashtra).

—Rahul Bedi, "International team inspects chemical weapons facility," *South China Morning Post*, 8 August 1997.

July 1997

A four-person OPCW inspection team visit a laboratory in Gwalior, India to verify India's compliance with the Chemical Weapons Convention. The OPCW reports that India is in compliance.

—R. Bedi, "Indian Chemical Bases Come Under Scrutiny," *Jane's Defence Weekly*, vol. 28, no. 6, 13 August 1997, p. 5.

26 June 1997

India states that it developed its chemical weapons for defensive purposes.

—"India Revealed Its Chemical Weapon Stockpile," *The Arms Control Reporter*, September 1997.

26 June 1997

India discloses to the OPCW that it possesses a stockpile of chemical weapons as well as manufacturing facilities. India also discloses that the Defense Research and Development Organization is developing these weapons in "experimental facilities."

—*International Security Digest*, July 1996, p. 6.

26 June 1997

The Indian government submits its initial declaration to the Organization of the Prohibition of Chemical Weapons (OPCW) at The Hague, disclosing that it possesses chemical weapons stockpiles and production facilities. The Indian Defense Ministry states "based on available information, initial declarations have been filed by India on testing and development of chemical weapons and their related facilities, which were developed only to deal with the situation arising out of a possible use of chemical warfare against India." [Note: Prior to this admission, the Indian government had repeatedly declared that it did not possess chemical weapons and did not have a chemical weapons program.]

—Manoj Joshi, "Chemical Confessions," *India Today*, 7 July 1997, in Lexis-Nexis Academic Universe, www.lexis-nexis.com; Sanjeev Miglani, "India puts its chemical weapons on the table," *Asia Times*, 4 July 1997, www.asiatimes.com.

24 June 1997

The Indian Defense Ministry states that the Prime Minister's cabinet decides to release the existence of India chemical weapons program to the OPCW.

—*The CBW Conventions Bulletin*, No. 37 (September 1997), p. 44.

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June 1997

According to a CIA report, India is one of the major suppliers of chemical equipment to Iran.

—*The Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventions/Munitions July-December 1996*, CIA Report, June 1997.

29 May 1997

India submits its initial declaration on its chemical weapons to the OPCW.

—*The CBW Conventions Bulletin*, No. 39 (March 1998), p. 4.

28 May 1997

India announces the establishment of a national authority to help it fulfill its CWC obligations. The government also calls for all countries that have not yet ratified the treaty, to do so.

—"Body Set up to Meet Chemical Weapons Conventional Obligations," *BBC Summary of World Broadcasts*, 30 May 1997, Part 3 Asia-Pacific; South Asia; Pakistan; FE/D2932/A.

12 May 1997

India is elected the first chairman of the Executive council of the OPCW.

—Manoj Joshi, "Weapons Convention: Chemical Confessions," *India Today*, 7 July 1997, Defense; p. 76.

6 May 1997

India announces that it is setting up a CWC National Authority under the administrative control of the Cabinet Secretariat. The new agency is to act as a liaison with the OPCW to ensure that the availability of dual-use chemicals is not prohibited.

—*The CBW Conventions Bulletin*, No. 37 (September 1997), p. 16; "India Sets up Watchdog Panel on Chemical Weapons," *The Hindu*, 17 May 1997, p. 9.

17 April 1997

India begins contacting experts in international law in an attempt to find a way out if its commitment to the Chemical Weapons Convention. India is growing increasingly concerned because the United States, China, and Pakistan have yet to ratify the treaty, which is scheduled to go into effect on 29 April 1997.

—Sanjeev Miglani, "India Tries to Wiggle Out of Chemical Arms Treaty," *Asia Times*, 17 April 1997.

3 April 1997

India reiterates that it is free to review its stance on the Chemical Weapons Convention because key signatories have yet to ratify it.

—"India Sticks to Stand on Chemical Weapons Convention," *The Hindu*, 12 April 1997, p. 6.

17 March 1997

Indian Foreign Minister Inder Kumar Gujral states that India will review its ratification of the Chemical Weapons Convention if the United States, China, and Pakistan fail to ratify the treaty.

—*The CBW Conventions Bulletin*, No. 36 (June 1997), p. 20.

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1997

India requests that information regarding inspections on its territories be excluded from OPCW reports to the First Conference of the States Parties. Yet, at the same time, four initial Article V inspections are carried out three different times, raising speculation that India possesses chemical weapons.

—Jean Pascal Zanders and John Hart, *Chemical and Biological Weapon Developments and Arms Control*, 1997, p. 5.

December 1996

A CIA report states that from July-December 1996, India has sold chemical weapons-related equipment and materials to Iran.

—Central Intelligence Agency, *The Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventions/Munitions July-December 1996*, June 1997, www.fas.org.

3 September 1996

India deposits with the UN Secretary-General its instrument of ratification of the Chemical Weapons Convention, making it the 62nd country to do so.

—*The CBW Conventions Bulletin*, No. 34 (December 1996), p. 20.

September 1996

The Defense Agricultural Research Laboratory moves its headquarters to Pithoragarh from Haldwani.

—Defense Agricultural Research Laboratory, www.drdo.com.

July 1996

Four authors from the Defense Research and Development Organization publish in *Defense Science Journal* the paper "Electron Microscopical Study on Skin Lesions Induced by Sulphur Mustard."

—"Chemical Weapons Convention-Declarations and Inspections," *Trust & Verify Issue 76*, August 1997.

25 June 1996

Shiv Mukherjee, the Minister for Press, Information, and Culture for the Indian Embassy in the United States, dismisses recent press reports that India was in violation of the Chemical Weapons Convention for building a factory for the production of phosphorus pentasulfide in Qazvin, Iran. Mukherjee states that the chemical was not banned by the CWC and that the Indian government monitors all commercial deals to insure that chemicals are not diverted for other means.

—*The CBW Conventions Bulletin*, No. 33 (September 1996), p. 23.

23 June 1996

The Iranian government agrees to give an unidentified Bombay-based company the rights to build a sophisticated chemical plant in Qazvin, Iran. The plant is to be used to produce phosphorous pentasulfide, a chemical known as a precursor for chemical weapons. The deal is reportedly worth over \$15 million and is negotiated by the Iranian company, Melli Agrochemicals.

—Con Coughlin, "Iran in Secret Chemical Weapons Deal with India," *Sunday Telegraph*, 23 June 1996, *International*, p. 26; David Makovsky and Douglas David Addis, "US, Europe to Clash on Iran at G-7," *Jerusalem Post*, 24 June 1996, p. 1.

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15 April-3 May 1996

The Defense Research and Development Establishment in Gwalior, India hosts an international training course for CWC National Authorities personnel, in cooperation with the OPCW Provisional Technical Secretariat.

—*The CBW Conventions Bulletin*, No. 32 (June 1996), p. 32.

11 April 1996

The US Defense Secretary William Perry releases "Proliferation: Threat and Response." The report states that India is capable of producing chemical weapons, and although India has never admitted to having an offensive chemical weapons program, it produces many dual-use chemicals that can be used as precursors and be able to support a large chemical weapons program.

—*The CBW Conventions Bulletin*, No. 32 (June 1996), p. 31.

18-22 March 1996

At the thirteenth session of the OPCW PrepCom Review Conference, India submits a working paper calling for the end of all chemical trade barriers for countries who are parties to the Chemical Weapons Convention.

—Chronology 1996, *The Arms Control Reporter*, July 1996; *The CBW Conventions Bulletin*, No. 32 (June 1996), p. 9 & 19.

1996

The Agni missile project is cancelled.

—"Offensive Weapons, India," *Jane's*, www.janes.com.

[Back to Top](#)

1995-1992

31 January 1995

India denies reports that it is supplying Iran with equipment and materials to develop chemical weapons. A statement made by the Joint Secretary, External Publicity, of the Government of India states that the pesticide plants were put out to an international tender and companies from around the world competed for the tender. During this time no concerns were ever expressed by the international community. Also the statement continues by saying that India does not have chemical weapons and because of this, there is no way Indian companies have the technology, equipment, or expertise to aid Iran. Also India is an original signatory of the Chemical Weapons Convention and because of this has adopted a strict export licensing mechanism to control and monitor the exports of dual use chemicals. [Note: It must be noted that Iran was also a signatory of the CWC at the time these claims were being made.]

—Chronology 1995, *The Arms Control Reporter*, October 1995; *Chemical Weapons Convention Bulletin: News, Background, and Comment on Chemical and Biological Warfare Issues*, Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation, March 1995, Issue Number 27.

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30 January 1995

The US Central Intelligence Agency (CIA) reports that German and Indian firms have provided equipment and raw materials normally used in pesticide plants to Iran. This according to the report this has aided Iran in its development of chemical weapons.

—Chronology 1995, *The Arms Control Reporter*, October 1995; *Chemical Weapons Convention Bulletin: News, Background, and Comment on Chemical and Biological Warfare Issues*, Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation, March 1995, Issue Number 27.

30 January 1995

The German Intelligence Agency, the BND, states that Indian companies are aiding Iran in its development of tabun and sarin. Indian companies state that they have obtained export licenses and told trade authorities. They also say that they were only involved in building a pesticide plant.

—Chronology 1995, *The Arms Control Reporter*, October 1995; *Chemical Weapons Convention Bulletin: News, Background, and Comment on Chemical and Biological Warfare Issues*, Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation, March 1995, Issue Number 27.

3 January 1995

Indian government officials meet with chemical industry officials to consider the impact of the implementation of the Chemical Weapons Convention on India's chemical industry.

—*Chemical Weapons Convention Bulletin: News, Background, and Comment on Chemical and Biological Warfare Issues*, Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation, March 1995, Issue Number 27.

24 November 1994

India publishes the details of the Module One training course it is offering for training OPCW inspectors and inspection assistants. The course is scheduled to take place from 23 January to 5 March 1995 in Gwalior at the CBW Defense Research and Development Establishment.

—*Chemical Weapons Convention Bulletin: News, Background, and Comment on Chemical and Biological Warfare Issues*, Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation, March 1995, Issue Number 27.

17 November 1994

German intelligence papers are quoted as saying that an Indian consortium was building a pesticide plant that could be linked to the production of chemical weapons in Iran.

—*Chemical Weapons Convention Bulletin: News, Background, and Comment on Chemical and Biological Warfare Issues*, Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation, March 1995, Issue Number 27.

September 1994

According to Kaleem Siddique, described leader of Hizbul Mujahedeen, a terrorist group based out of Kashmir, India uses chemical weapons against Kashmiri militants, after it failed to evict them from an area near Srinagar.

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—*Chemical Weapons Convention Bulletin: News, Background, and Comment on Chemical and Biological Warfare Issues*, Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation, September 1999, Issue Number 45, p. 29.

16 May 1994

Indian labs participate in the first inter-laboratory comparison test for the analysis of CWC-relevant chemicals to be organized by the OPCW Provisional Technical Secretariat.

—*Chemical Weapons Convention Bulletin: News, Background, and Comment on Chemical and Biological Warfare Issues*, Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation, September 1994, Issue Number 25.

4 May 1994

The Indian government announces that a shipment of phosphorus pentasulfide will be allowed to leave Colombo, Sri Lanka and proceed to Egypt. A spokesman states, "This chemical is used in civilian chemical industries to make insecticide and lubricant oil additives. It is also not included as a dual-purpose chemical under the Chemical Weapons Convention. There are some chemicals which have restrictions on them for military as well as civilian uses. This is not one of them. We took up the matter with the Sri Lankan authorities and the matter has now been satisfactory resolved....We are strictly committed to nonproliferation of chemical weapons and both Sri Lanka and India are original signatories to the Chemical Weapons Convention. We hope that with the coming effect of the CWC, the states who are parties to this will be able to do away with arbitrary and ad hoc trade restrictions on chemicals used for legitimate civilian purposes." [Note: While India is a party to the CWC, Egypt is not.]

—*Chemical Weapons Convention Bulletin: News, Background, and Comment on Chemical and Biological Warfare Issues*, Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation, September 1994, Issue Number 25.

3 May 1994

Prime Minister Narasimha Rao hails the Chemical Weapons Convention as a major step towards disarmament, which is universal and nondiscriminatory.

—"Prime Minister Rao Sets Out Defense, Nuclear Policy in Rajya Sabha Debate," *BBC Summary of World Broadcast*, 4 May 1994.

21 April 1994

The Indian Chemical Manufacturers Association (ICMA) denies that an Indian company has sent chemicals used to make nerve gas to Egypt. The ICMA states that the chemical, phosphorous pentasulfide, is not a chemical weapon or dual-use product as defined in the Chemical Weapons Convention. [Phosphorous pentasulfide is a potential precursor of VX nerve agent, and is subject to export control by members of the Australia Group, a consortium in which India does not participate.]

—"India Denies Exporting Toxic Chemical to Egypt," Xinhua News Agency (PRC), 21 April 1994.

17 April 1994

Four container loads that were originally labeled for shipment from India to an Egyptian post are detained in

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Colombo, Sri Lanka on the suspicion that they are destined for Israel to make nerve gas.

—"Four Container Loads of Chemical Detained in Colombo," Xinhua News Agency (PRC), 17 April 1994.

February 1994

The Agni missile completes its third successful test-flight.

—"Offensive Weapons, India," *Jane's*, www.janes.com.

1994

The Prithvi SS-150 enters service.

—"Offensive Weapons, India," *Jane's*, www.janes.com.

24 December 1993

Prime Minister P.V. Narasimha Rao speaking at the Ministry of Chemicals and Fertilizers characterizes the Chemical Weapons Convention as a great step in the direction of disarmament, nondiscriminatory in its approach, and says that it was the most important of any disarmament process in verification. He states that India was not making chemical weapons and has nothing to hide. In addition, he says that India will train its commercial industry to protect its commercial secrets while participating in the inspection process.

—*Chemical Weapons Convention Bulletin: News, Background, and Comment on Chemical and Biological Warfare Issues*, Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation, March 1994, Issue Number 23.

August 1993

A study by the US Office of Technology Assessment lists India as a country likely to have a secret chemical weapons program.

—"Who Has Chemical Weapons, Who Doesn't?" Associated Press, 2 February 1995.

June 1993

India conducts a Prithvi SS-150 missile test flight from the first production batch.

—"Offensive Weapons, India," *Jane's*, www.janes.com.

May 1993

An Indian company completes work on poison-gas scrubbing equipment and sends it to Libya.

—"German Businessman Jailed For Aiding Libya Chemical Weapons," AP Worldstream, 1 October 1996.

22 February 1993

During a speech to a joint session of Parliament, President Shankar Dayal Sharma, describes the Chemical Weapons Convention as "a universal and non-discriminatory treaty which should be regarded as a model for future multilateral disarmament negotiations."

—*Chemical Weapons Convention Bulletin: News, Background, and Comment on Chemical and Biological Warfare Issues*, Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation, June 1993, Issue Number 20.

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17 February 1993

Minister of State for External Affairs, Eduardo Faleiro, announces that India is beginning to conform to international commitments on chemical weapons and toxic chemicals.

—*Chemical Weapons Convention Bulletin: News, Background, and Comment on Chemical and Biological Warfare Issues*, Quarterly Journal of the Harvard Sussex Program on CBW Armament and Arms Limitation, June 1993, Issue Number 20.

14 January 1993

At the signing of the Chemical Weapons Convention, Indian Minister of State for External Affairs, Eduardo Faleiro states that India believes that the agreement was a model for future arms control agreements.

—"Chemical Weapons Convention: India Hails, 'Non-discriminatory' Chemical Weapons Convention," *BBC Summary of World Reports*, 16 January 1993.

14 January 1993

India signs the Chemical Weapons Convention (CWC).

—"Parliament Passes Bill Banning Chemical Weapons," *Rediff*, 16 August 2000, www.rediff.com.

2 January 1993

An Indian government spokesman states that 19 chemicals that have both civilian and military use can now only be exported with a license from the federal government.

—Brahma Chellaney, "India Imposes Western-style Export Control on Many Chemicals," *United Press International*, 2 January 1993.

24 September 1992

The Indian government, responding to US protest, states that its export-import office is initiating legal action against the company United Phosphorous Ltd because its sale of 45 tons of trimethyl phosphate to Syria. The company also has its export license suspended for 6 months.

—"India Punishes Firm for Allegedly Selling Syria Weapons-Grade Chemicals," *United Press International*, 24 September 1992.

22 September 1992

An External Affairs Ministry spokesman states that the Indian Government is going to take action against United Phosphorous. The spokesman said that the company did not get permission from the government to sell trimethyl phosphite to Syria.

—"Action Taken Against Firm Exporting Chemical," *Hong Kong Agence France Presse*, 22 September 1992.

21 September 1992

The Indian Foreign Ministry states that India will investigate and possibly prosecute United Phosphorous for possible violating export laws.

—"India to Investigate Chemical Shipment," *Washington Post*, 22 September 1992, p. A7.

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21 September 1992

US officials state that in August 1992, they prevented a shipment by the Indian company United Phosphorous Ltd. of 45 tons trimethyl phosphite from reaching the Syrian Setma Ltd. chemical plant. US officials believe that Setma Ltd. is a front company for a nerve gas production firm owned by the Syrian government. India officials state that they have received a certificate from that Syrian Chamber of Commerce stating that the chemicals are to be used for civilian purposes.

—Ruth Sinai, "US Halts Chemicals Shipments from India to Syria," *Associated Press*, 21 September 1992.

19 August 1992

India and Pakistan issue the Joint Declaration on the Complete Prohibition of Chemical Weapons. The declaration states that each side is not to use, develop, produce, or acquire chemical weapons. Each side is also not to assist, induce, or induce anyone else to engage in these activities. Each side is to also work together in finalizing, adopting, and becoming state parties to the proposed Chemical Weapons Convention. Lastly each side reserves the right to develop their chemical industry and related applications and products for peaceful purposes.

—Joint Declaration on the Complete Prohibition of Chemical Weapons 19 August 1992 (New Delhi), Federation of American Scientists, www.fas.org.

15 August 1992

A United Phosphorous executive states it will continue sending Syria trimethyl phosphite despite warnings that Syria is using the chemical to make weapons.

—Michael Rotem, "Indian Chemical Company Wont Stop Shipment to Syria," *Jerusalem Post*, 16 August 1992, News.

August 1992

A 45-ton shipment of trimethyl phosphite to Syria from the Indian chemical company United Phosphorus Ltd., of Bombay, is blocked in Cyprus. Raju Scroff, the owner of the company, states that the chemical was to be used to make pesticides. He states that he had an engineer verify that the Syrian company purchasing the chemical was in fact a pesticide plant, and says that he had received a certificate from the Syrian Chamber of Commerce vouching that the chemicals were for civilian use.

—Jackson Diehl, "India to Investigate Chemical Shipment," *Washington Post*, 22 September 1992, p. A7.

17 July 1992

The Indian company United Phosphorous sends 45 tons of trimethyl phosphite to Syria. Trimethyl phosphite can be used to make pesticides, but is also a potential precursor for nerve gas.

—Michael Gordon, "US Accuses India on Chemical Arms," *New York Times*, 21 September 1992, p. 1A.

May 1992

The Agni completes its second successful test-flight.

—"Offensive Weapons, India," *Jane's*, www.janes.com.

[Back to Top](#)

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1991-1980

16 December 1991

Following a visit by Li Peng, Premier of the State Council of the People's Republic of China, India and China issue a joint communique that includes a statement calling for the complete prohibition and destruction of chemical weapons.

—"Joint Communique Issued at End of Li Peng's Visit to India," *BBC Summary of World Broadcasts*, 17 December 1991.

31 October 1991

India and Pakistan both agree to consider issuing a joint declaration on chemical weapons. They also agree to a meeting of a panel of experts at a future date to exchange views on negotiating an accord banning production, deployment, and use of chemical weapons.

—"India, Pakistan Agree on Expert Level Talks on Chemical Weapons," *Agence France Presse*, 31 October 1991 News.

August 1991

The Defense Agricultural Research Laboratory is moved from Leh to Haldwani.

—Defense Agricultural Research Laboratory, www.drdo.com.

16 May 1991

A spokesman for the Indian External Affairs Ministry states that the Indian government welcomed the statement made by US President George Bush forswearing the use of chemical weapons. The spokesman also states that India believes that the statement will strongly contribute to the negotiation of a chemical weapons convention, of which India strongly supports.

—"India Welcomes US Move on Chemical Weapons," *Xinhua General Overseas News Service (PRC)*, 16 May 1991.

7 March 1991

According to a statement by Rear Admiral Thomas A. Brooks, India and Pakistan have postured their forces for the possible use of chemical weapons should a conflict erupt. The statement also contends that India most likely has a chemical weapons stockpile because of its large chemical industry infrastructure.

—Statement of Rear Admiral Thomas A. Brooks, US Director of Naval Intelligence Before the Seapower, Strategic, and Critical Materials Subcommittee of the House Armed Services Committee on Intelligence Issues, 7 March 1991.

13 October 1990

A spokesman for the Indian External Affairs Ministry states that the Indian government has decided to institute a system of control on the export of dual use chemicals that could be used to manufacture chemical weapons. The government creates a list of such chemicals that must have government approval before they can be exported.

—"Government to Control Export of Chemicals Used in Chemical Weapons," *BBC Summary of World Broadcasts*, 16 October 1990.

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25 January 1990

Indian Foreign Minister Inder Kumar Gujral states that Indian and the USSR will continue to work together on putting limitations on chemical weapons as declared in the New Dehli Declaration on a Nuclear Free and Non-Violent World.

—"Indian Foreign Minister for Cooperation with USSR," TASS, 25 January 1990.

1990

Transpek wins bid for the Turnkey Project in Iran. The company is to install and commission a chemical plant in that country.

—"Milestones/Accolades?" *Transpek*, www.transpek.com.

17 July 1989

An official with the Indian firm Transpek Private Ltd., states that the company will resume its exports of thionyl chloride once it receives government permission.

—"Import Briefs," *Journal of Commerce*, 17 July 1989, Imports, p. 4A.

10 July 1989

US officials claim that Indian chemical companies during the previous two years have sold hundreds of tons of chemicals used to make chemical weapons to Iran, Iraq, and Egypt.

—Stephen Engelberg and Michael Gordon, "India Seen as a Key on Chemical Arms," *New York Times*, 10 July 1989, Section A; Page 1.

10 July 1989

US State Department spokesman Richard Boucher said that he expected that the Indian government would cooperate in putting strict controls on the exports of chemical weapons. The statement was made following a *New York Times* report that states that India has become a major exporter of chemical substances used to make chemical weapons.

—"Indian Cooperation Sought Against Chemical Proliferation," Associated Press, 10 July 1989, Washington Dateline.

5 July 1989

An executive with the company Transpek Private Ltd., states that the chemicals destined for Iran, have now been returned to its factory.

—"India Halts a Shipment of Chemicals for Iran," *New York Times*, p. 3A.

1 July 1989

The *Seacrest Pioneer*, a ship carrying thionyl chloride from India to Iran is stopped in Hamriya, Dubai before it can finish its shipment. The containers of the ship were unloaded, and the ship reloaded cargo and sailed back to India.

—"Ship Reportedly Carrying Poison Gas Chemical for Iran Docks in Dubai," *Los Angeles Times*, 2 July 1989, Part 1, Page 16; "No Move to Seize Alleged Poison Cargo," *St. Louis Post-Dispatch*, 2 July 1989, p. 11D.

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30 June 1989

Indian officials state that the state-owned trading company, Transpeck Private Ltd., sold Iran 60 tons of thionyl chloride in March. Officials also admit that the company is to send another 257 tons of the same chemical, but the deal was cancelled due to US pressure.

—Stephen Engelberg and Michael Gordon, "India Seen as a Key on Chemical Arms," *New York Times*, 10 July 1989, p. 1A; "Ship Bound for Iran May be Halted; W. German Chemical Reportedly to be Stopped in Dubai," *Los Angeles Times*, 1 July 1989, Part 1, Page 8.

28 June 1989

The West German export company, Rheineisen Chemical Products, admits that it arranged a shipment of 257 tons of thionyl chloride from India to Iran. [Note: Thionyl chloride is a potential precursor for nerve agent or possibly mustard.]

—Robert J. McCartney, "West German Police Raid Company Suspected of Chemical Arms Sales," *Washington Post*, 20 June 1989, p. A26.

22 May 1989

Indian Prime Minister Rajiv Gandhi, Presidents Raul Alfonsin of Argentina, Carlos Salinas de Gortari of Mexico, Prime Ministers Ingvar Carlsson of Sweden, Andreas Papandreu of Greece, and former President Julius Nyerere of Tanzania, agree to press for an initiative for disarmament through the United Nations that would include a convention on chemical weapons.

—"Six Leaders Urge Security Through United Nations," Associated Press, 22 May 1989, Washington Dateline.

May 1989

The Agni missile has its first successful test-launch.

—"Offensive Weapons, India," *Jane's*, www.janes.com.

9 January 1989

Indian Minister of State for External Affairs, Natwar Singh, states that India supports the forum on confirming the 1925 Geneva Protocol that bans the use of chemical weapons.

—Yuri Lopatin, Nikita Yermakov, and Alexander Krivykh, "Conference on Chemical Weapons Continued," TASS, 9 January 1989.

February 1988

First successful test flight of the Prithvi SS-150 missile, capable of delivering chemical warheads.

—"Offensive Weapons, India," *Jane's*, www.janes.com.

1988

In a Working Paper submitted by India to the Third Special Session of the United Nations General Assembly devoted to disarmament, India states that there is an increasing threat of chemical and biological weapons. India writes that the threat is growing as a result of technological developments in the chemical sphere that remove traditional barriers to CW development. Scientific advances in genetic engineering and biotechnology have increased the biological weapons threat.

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—Government of India, "New Technologies and the Qualitative Arms Race: Working Paper submitted by India at the Third Special Session of the United Nations General Assembly Devoted to Disarmament, 1988," 1988, www.fas.org.

1988

At the U.N. Disarmament Conference, India claims that it does not possess chemical weapons

—Anthony Cordesman, "Weapons of Mass Destruction in The Middle East," 27 December 2001, p. 7.

1987

India accuses Pakistan of using chemical weapons against its troops in Siachen. The weapon is apparently used in the constant border skirmishes between India and Pakistan for control of the Siachen Glacier region.

—"WMD Around The World," Federation of American Scientists, 3 August 1999, www.fas.org.

27 November 1986

Indian Prime Minister Rajiv Gandhi and Soviet President Mikhail S. Gorbachev reaffirmed the 1985 Delhi Declaration, which called for an international ban on nuclear weapons, by also calling for a ban on chemical weapons.

—"Delhi Declaration Reaffirmed," *Facts on File World News Digest*, 5 December 1986, International Affairs; Gorbachev Visits India.

April 1986

The Indian Ministry of Defense sets up a special cell designed to prepare the Indian armed forces for a chemical attack by a neighboring country (i.e., Pakistan and/or China). The cell is tasked with looking at mainly defensive measures against a chemical attack. The cell is also to study the effect of chemical gases in different climate conditions and also the effectiveness of decontamination kits, chemical detectors, and protective gear.

—"Group Set up to Study Chemical Warfare," *The Times of India*, 21 October 1986, p. 9.

3 December 1984

A gas leak from a tank of methyl isocyanate (MIC) at a plant in Bhopal, India, owned and operated by Union Carbide India Limited (UCIL), causes thousands of casualties.

—Ajoy Bose, "Poison Gas Killed 1,000 and Maims Survivors," *The Guardian*, 5 December 1984, in Lexis-Nexis Academic Universe, www.lexis-nexis.com.

1984

The Agricultural Research Unit is re-designated as the Defense Agricultural Research Laboratory (DARL).

—Defense Agricultural Research Laboratory, www.drdo.org.

Mid-1980s

India reaches final development and deployment of several chemical agents after Pakistan reportedly has acquired chemical agents

—Anthony Cordesman, "Weapons of Mass Destruction in The Middle East," 27 December 2001, p. 7; Federation of American Scientists, Weapons of Mass Destruction: WMD Around the World, www.fas.org.

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1983

Work begins on the Prithvi missile. The Prithvi missile is India's first indigenously produced ballistic missile. The SS-150 version is capable of carrying a chemical warhead.

—"Offensive Weapons, India," *Jane's*, www.janes.com; Federation of American Scientists, Weapons of Mass Destruction: WMD Around the World, "Prithvi," www.fas.org.

11 December 1980

Following a visit by Soviet President Leonid Brezhnev, the USSR and India issue a joint declaration in which they both call for measures to "prohibit and eliminate" chemical weapons.

—The Associated Press, 11 December 1980, International News.

1980

The Department of Defense Research and Development is established and is set up to manage DRDO and its different laboratories.

—John Pike, "Defense Research and Development Organization: Indian Special Weapons Agencies," Federation of American Scientists, 29 May 2002, www.fas.org.

[Back to Top](#)

1979-1920

9-15 March 1979

The Chairman of the Council of Ministers of the USSR A.N. Kosygin makes an official week-long visit to India. During the visit, both India and the USSR agree to work together to "prohibit and eliminate" chemical weapons.

—"Joint Communique," BBC Summary of World Broadcasts, 17 March 1979, Part 3, The Far East; C. Kosygin's visit to India.

1979

India begins work on the Agni missile. The missile is India's first intermediate-range ballistic missile and is capable of carrying chemical warheads.

—"Offensive Weapons, India," *Jane's*, www.janes.com; Federation of American Scientists, Weapons of Mass Destruction: WMD Around the World, "Agni," www.fas.org.

1976

The Defense Material & Storage R & D Establishment (DMSRDE) is established. The establishment is an amalgamation of three other establishments-DRL, TSRDE, and the Defense Institute of Stores Preservation and Packaging. DMSRDE is set up to facilitate interdisciplinary research and development and to provide indigenous items to all three branches of the armed services.

—Defense Material & Storage R&D Establishment, www.drdo.org.

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1973

The Jiwaji Industrial Research Laboratory is taken over by the Ministry of Defense and becomes the Defense Research & Development Establishment.

—Defense Research & Development Establishment (Materials), "Historical Background," www.drdo.org.

1965

Transpek a chemical company set up to make transparent acrylic sheets, is established in Vadodara. Transpek later sells potential chemical weapons precursors to Syria in 1989.

—"Who are we?" *Transpek*, www.transpek.com.

July 1962

The agricultural research center in Leh is transferred to the Defense Research & Development Organization (DRDO) and becomes the Agricultural Research Unit (ARU) in order to study crops grown at high altitudes.

—Defense Agricultural Research Laboratory, www.drdo.com.

9 February 1962

The Research & Development Establishment, Pune, is founded as an amalgamation of the Technical Development Establishment, Ahmednagar, and Inspectorate of Engineering Stores, Calcutta. It is set up as a nodal establishment to meet the technical requirements of Army engineers.

—Defense Research Laboratory, www.drdo.org.

1962

The Field Research Laboratory (FRL) becomes part of DRDO, under the control of the Defense Science Laboratory in Delhi. The lab is set up to make the hostile terrain of Jammu and Kashmir conducive to agriculture.

—Field Research Laboratory, www.drdo.com.

April 1961

An agricultural research center is established at Leh under the auspices of the Indian Council of Agricultural Research.

—Defense Agricultural Research Laboratory, www.drdo.org.

1960

Field Research Laboratory (FRL) is founded in Leh under the control of the Indian Council of Agricultural Research (ICAR).

—Defense Research Development Organization, www.drdo.org.

1958

The Defense Research and Development Organization (DRDO) is established as an amalgamation of the Technical Development Establishment (TDE) of the Indian Army, the Directorate of Technical Development, and the Defense Science Organization. DRDO is set up to provide the Armed Services with new technology.

—John Pike, "Defense Research And Development Organization: Indian Special Weapons Agencies," Federation of

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American Scientists, 29 May 2002, www.fas.org; Captain Paul McQuay, "Summary of The Indian Defense Science and Technology Organization," 16 March 1995, www.nmjc.org, 5/30/01; DRDO, www.drdo.com.

1956

The State Trading Corporation of India Ltd, is set up in New Delhi. The corporation, owned by the Indian government, is set up to help Indian companies with the import and export of their products.

—The State Trading Corporation of India, Ltd, www.stcindia.com.

1948

The Indian Defense Science Organization is established.

—Captain Paul McQuay, "Summary of The Indian Defense Science and Technology Organization," 16 March 1995, www.nmjc.org.

1947

The Jiwaji Industrial Research Laboratory is established by Lord Mountbatten, the Governor General of India in Gwalior.

—Defense Research & Development Establishment, www.drdo.org.

1947

Great Britain closes its Chemical Defense Research Establishment in India.

—Christopher Bellamy, "Britain Comes Clean on Nerve Gas," *The Independent*, 28 May 1997, p. 4.

November 1945

The United States dumps 2,672 M70 bombs containing mustard, 910 M78 bombs containing phosgene, 2,672 drums (each a ton container) of bulk mustard, and 833 drums (each a ton container) of bulk lewisite into the Bay of Bengal.

—William R. Brankowitz, "Meeting Notes-Summary of Some Chemical Munitions Sea Dumps by the United States," *US EPA Office of Water*, 30 January 1989.

May 1945

In three separate cases, the United States dumps chemical munitions into the Bay of Bengal. In the first incident, the United States dumps 37,957 M70 bombs containing mustard, 1,496 M78 bombs containing phosgene, 8,742 M79 bombs containing phosgene, and 2,512 M79 bombs containing cyanogenchloride. In the second incident, it dumps 608 drums (each 55 gallons) of bulk mustard and 4,500 M47 bombs containing mustard. In the third incident, it dumps 572 drums (each 55 gallons) of bulk mustard and 4,693 M47 bombs containing mustard.

—William R. Brankowitz, "Meeting Notes-Summary of Some Chemical Munitions Sea Dumps by the United States," *US EPA Office of Water*, 30 January 1989.

1945

The United Kingdom conducts trials using mustard and phosgene cells and mustard and phosgene agents in Coimbatore, Kumbha, and Porkhal. Tests using mustard are conducted at Chakra and aircraft spray tests were conducted at Cambellpur. Protective gear is tested in Bombay and Kanpoor. Unspecified tests were conducted in

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Kirkee, Bombay, Bangalore, and Delhi. Storage trials are held at numerous locations including Kirkee, Bombay, Madras, Ferozepore Arsenal, and Fort William Depot. Other sites include one near Mangalore, which had two "experimental" stations and another at Dum Dum, which tests respiratory effects.

—Maria Haug, "Historical Chemical Weapons Sites in The Asia Pacific Region," Bonn International Center for Conversion, www.bicc.dr.

1944

The British move the Chemical Research Defense Establishment from Rawalpindi, Pakistan to Cannanore, India.

—Maria Haug, "Historical Chemical Weapons Sites in The Asia Pacific Region," Bonn International Center for Conversion, www.bicc.dr.

December 1943

A test trial of four 250-pound phosgene bombs is carried out near Dehra Dun near the Raiwala railway station.

—Maria Haug, "Historical Chemical Weapons Sites in The Asia Pacific Region," Bonn International Center for Conversion, www.bicc.de.

19 May-12 June 1942

At the chemical weapon test site in Deolali (Uttar Pradesh), India, 600 artillery rounds, each containing 25 pounds of mustard shells, and lachrymatory (B4) shells, are test fired.

—Maria Haug, "Historical Chemical Weapons Sites in the Asia Pacific Region," Bonn International Center for Conversion, www.bicc.de.

1930s and 1940s

The United Kingdom carries out chemical weapon tests throughout different locations in India and Pakistan.

—Maria Haug, "Historical Chemical Weapons Sites in The Asia Pacific Region," Bonn International Center for Conversion, www.bicc.dr.

1938

Acharya P.C. Ray, an Indian chemical industrialist, brings together a group of his fellow chemical industrialists to help promote the interests of the nascent chemical industry.

— www.icmaindia.com.

Early 1930s

The United Kingdom establishes a chemical weapons research facility in Rawalpindi. [Note: Rawalpindi is now part of the territory of Pakistan.]

—Maria Haug, *Historical Chemical Weapons Sites in the Asia-Pacific Region*, www.bicc.de.

1920

The United Kingdom sends stocks of mustard gas to India to use against rebels in the northwest frontier.

—Maria Haug, "Historical Chemical Weapons Sites in The Asia Pacific Region," Bonn International Center for Conversion, www.bicc.dr.

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[Back to Top](#)

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