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*I pledge my honor that I have abided by the Stevens Honor System.*

The Khan Network

Abdul Qadeer Khan was a Pakistani scientist who was deeply involved in the illegal transfer of nuclear materials and technologies for well over thirty years. The full extent of his knowledge, connections, and influence is still unknown, though experts have been able to piece several bits of information together over the course of years.

Khan was born in 1936 in British India, and at 16 years of age he immigrated to Pakistan with his family. He majored in metallurgical engineering in Holland, received his Ph.D in the same subject in Belgium, and began work at Physical Dynamic Research Laboratory, a subcontractor of the Dutch partner in the Urenco uranium enrichment consortium. He quickly starts visiting a facility in the Netherlands and worked on strengthening metal centrifuge components. While he had his employer’s consent, Khan was never formally cleared to visit said facility.

Shortly into his career the Dutch became very suspicious of Khan -- he attended nuclear trade shows and asked worrying technical questions about things not related to any of his own projects. After getting his hands on specs for advanced German centrifuges and having unmonitored access to them for over two weeks, the Dutch were ready to arrest him. The US convinced them not to, in order to monitor his activities more closely. This proved to be a mistake, as Khan unexpectedly took copied centrifuge blueprints and other sensitive information with him when he fled to Pakistan.

Khan was integral to the enrichment program in Pakistan, headed by the Pakistan Atomic Energy Commission. He eventually was given autonomous control over the entire uranium enrichment program, and founded a laboratory in order to enrich uranium locally. He went on to help create Pakistan’s first line of nuclear weaponry, and was convicted in absentia to four years in Dutch prison for nuclear espionage. This was later overturned and Khan went on to allegedly assist Iran in their nuclear program -- Pakistan helped train Iranian scientists, and they were able to build their own centrifuges by 1990 thanks to Khan. He later offered them a functioning bomb design and support for an enrichment program of their own.

In the mid 80s Khan begins exporting components for centrifuges by importing more than what was needed for Pakistan. This operation was entirely missed by western intelligence agencies. Khan also went on to help North Korea and Libya before being forced into retirement in 2001, due to suspicions regarding his proliferation activities. In 2004 Khan publicly admitted to many illegal nuclear dealings, and cited an “error of judgement” for having executed them.

The Secret Treachery of A.Q. Khan provides insight into some of his early life and reasons for joining Pakistan’s nuclear program, as well as looking at why he decided to provide his knowledge, expertise, and sell components to other countries in the region and abroad. Abdul Qadeer Khan was born, and raised a muslim, in Bhopal India. Due to increased hostility and rising religious tension between Muslims, Sikhs, and Hindus; Khan and his three brothers left to start a new life in Pakistan. After receiving his PhD in metallurgical engineering in Europe, he started working for a dutch company that developed gas centrifuge technology. In 1974 Khan wrote to the prime minister of Pakistan [Zulfikar Ali Bhutto] offering is knowledge and expertise to help improve Pakistan’s struggling nuclear program. He cited the 1971 war in which India invaded East Pakistan, and India’s nuclear test in 1974 as being highly influential in his decision to return to Pakistan.

By 1976 Khan had persuaded Bhutto to grant him exclusive control over the uranium enrichment program. In the mid to late 1990s Khan had contracts with Libya, Iran, and North Korea to supply information and components for gas centrifuges, he also attempted to sell the technology to Iraq but was unsuccessful. To keep his dealings secret he his connections to make and transport comments through shell corporations. Many components were made in Malaysia, then shipped to Dubai, before finally be transported to Libya and Iran. In December 2003 Khan was arrested for these dealings, and in an interview in February 2004 he assumed sole responsibility and asked to be pardoned. Pervez Musharraf, the general who seized control of Pakistan in 1999 and appointed himself president in 2001, granted that pardon to Khan in the national news.

Khan would eventually speak out about the dealings claiming that he did it at the behest of the military, that the military was solely responsible, even claiming that it was all done by foreigners. Although $8 million dollars in bank accounts in Pakistan, Dubai, and Switzerland, as well as several expensive houses, all belonging to Khan prove suspicious. Khan idolized his father and yearned for the respect his father received as headmaster of Bhopal high school. He sought to glorify himself by making massive donations into education and the preservation of religious and historical sites which would all bare his name. He bragged about his accomplishments on his personal website which recites 63 gold medals bestowed on him between 1984 and 2003. He states, “There is a tremendous amount of love [for me in Pakistan], and it is obvious everywhere.… I believe the most important thing is what my country, my people, think of me. I don’t care what other people think of me. Once I’m gone, my name and my prestige and the love and aﬀection that I have in this country will remain forever.”

The extent of the Khan Network was clearly shown in the Center for Nuclear Safety’s diagram titled, “Countries Reported to Have Sold or Attempted to Sell Libya Gas Centrifuge Components”. Based on what is known now about Abdul Khan, it is clear he was directly involved in the distribution of Libya’s Gas Centrifuge Components to and through various countries such as Pakistan, Malaysia, Singapore, Turkey, South Africa, Switzerland, South Korea, North Korea, and Dubai. What is interesting about the network is how long it continued without detection. In 2004 Khan admitted to providing North Korea, Libya, and Iran with technological building blocks for making nuclear weapons. It is clear now that these were not the only countries.

An interesting case of the proliferation of nuclear technology involving Khan involves North Korea. Much of what is thought to have occurred between Khan and the North Koreans could be seen as speculation but experts still find evidence of the interactions. It is said that much of the centrifuges and other important nuclear material needed to create a bomb in North Korea came from the Khan Network. Khan denies ever receiving compensation or rewards for the “proliferation” he provided to other countries, including North Korea. Over the years rumors have been created that North Korea indeed has paid Khan or possibly Pakistan for the material they gained.

The informants who helped take the Khan Network down were Friedrich Tinner and his two sons, Urs and Marco. The Tinner family originally was a central part of illicit nuclear trade deals within Switzerland, however they turned a leaf and became contractors for the CIA with the intent of stopping Khan and preventing their own prosecution by the Swiss authorities. The CIA also did not want the Tinners to be prosecuted, for fear that the Swiss government would pursue espionage charges against U.S. intelligence agents. Since Switzerland is a neutral state, no citizen is allowed to work for any foreign country's intelligence agency, especially if the country is targeting an attack against another country.

It took heavy diplomatic efforts by the H.W. Bush administration to convince Switzerland's Federal Council to destroy key evidence in the Tinner case, such that the family could not be convicted for nuclear proliferation activities. It’s interesting to see that the CIA wasn’t interested in keeping the Tinner family out of prosecution for the wellbeing of their informants, rather the CIA was covering its own tracks by not allowing the Tinners to disclose the CIA’s wrongdoings on Swiss soil. This debacle caused a rift in U.S.-Switzerland relations, as the CIA refused to cooperate with the Swiss authorities. The U.S. did not give the same level of respect that they themselves expect when working with the NPT signatories. Switzerland had an obligation to investigate the activities of both the Khan network and the Tinners, since part of the responsibilities of being a signatory of the NPT is to prevent the spread of nuclear arms within the member country’s borders. The Khan network used Switzerland effectively for over **two decades** before it was finally brought down.