

## "Pa! This Requires Action!"

### Manhattan Project History The Early Years (1900 - 1939)

"It can never be done unless you turn the United States into one huge factory" - Niels Bohr; On the subject of separating sufficient quantities of U235 for the possible development of a nuclear weapon; Early 1939.

"I entered history as Szilard's chauffeur" - Edward Teller; On reminiscing about his task of driving Leo Szilard out to Long Island, NY to meet with Albert Einstein; July 1939.

Early in 1939, Leo Szilard learned from Isidore Rabi that Enrico Fermi had discussed the possibility of a chain reaction in his public presentation at a recent conference on theoretical physics. When pressed, Fermi suggested that only a 10% chance existed for a successful chain reaction from uranium.

To further complicate the landscape, disagreements arose over whether a chain reaction was possible with natural uranium (U238) or whether enriched uranium was necessary (U235). If U235 was required, this brought up a myriad of other problems and uncertainties about methods of separation. Also, whether fast or slow neutrons were a factor was also thrown into the mix.

Another looming controversy concerned the issue of secrecy. Szilard, Teller and others felt that any further dissemination of information should be curtailed lest Nazi Germany gain insights into American scientific breakthroughs. Fermi was dead-set against secrecy. Niels Bohr insisted that "secrecy must never be introduced into physics."

Whatever course was chosen, it was becoming obvious that little could or would be done without direct government support. The nay-sayers among the scientific community were being heard. With the enormous "stakes" in the balance, it was not surprising that a little subterfuge was called for.

The "Hungarian Conspiracy" decided to take action. Leo Szilard, Edward Teller and Eugene Wigner, perhaps more than anyone, understood the enormous threat that Nazi Germany posed for the world if they should happen to be the first to develop a nuclear weapon. Their first concern was ensuring that when the time came, the United States would have access to a supply of uranium. At first they thought of contacting the Belgian government directly about uranium supplies in the Belgian Congo, afraid that it might fall into German hands. Szilard remembered that Einstein had a personal relationship with the Queen of Belgium and might be willing to intercede. They made their way to Long Island, NY to meet with the "Master" himself.

Although Einstein eventually followed through, he opted for a more indirect approach via a letter to the Belgian ambassador. Accordingly, a draft letter was prepared. At the same time, Wigner convinced the others that a direct approach should be made to the United States Government. In July of 1939, Gustav Stolper contacted Szilard to inform him that he had communicated their concerns to Alexander Sachs, a noted economist and personal friend of Roosevelt.

Szilard later confirmed that, "Sachs' took the position, and completely convinced me, that these matters first and foremost concerned the White House; and that the best thing to do, from the practical point of view, was to inform Roosevelt. He said that if we gave him a statement he would make sure that it reached Roosevelt in person."

Drawing on the first Einstein draft, Szilard prepared a second draft letter to Roosevelt. On Sunday, July 30, 1939, Edward Teller drove Szilard out to Long Island to again meet with Einstein. After discussions surrounding Sachs' suitability as the best "middle man" for the job, they got down to discussing a "final" draft. Einstein opted for a longer version which incorporated his shorter statement with additional paragraphs contributed by Szilard in his consultations with Sachs.

Szilard transmitted the letter in its final form to Sachs on August 15th along with a memorandum of his own that elaborated on the letter's discussion of the possibilities and dangers of fission. By the first week of September, Szilard had heard nothing from Sachs. Finally, on the last week of September, Szilard and Wigner made a call on Sachs and found that the economist still held Einstein's letter. On October 2nd, Szilard informed Einstein that his letter still had not made its way to Roosevelt "probably due to him being so overburdened." Szilard, Wigner and Teller began to believe that they had made a wrong decision concerning Sachs and perhaps they should move to "Plan B", whatever that might be.

However, Sachs was finally able to get an "audience" with FDR, and on October 11, 1939, met with the president. As so often happens with the "best laid plans", Sachs felt disconcerted about his planned verbal "reading aloud" of Einstein's letter and opted instead for a 800-word summation that he had drafted himself. This summation, the first authoritative report to a head of state of the possibility of using nuclear energy to make a weapon of war, emphasized power production first, radioactive materials for medical use second and "bombs of unenvisioned potency and scope" third. It also recommended making arrangements with Belgium for uranium supplies. Finally, it proposed to "designate an individual and a committee to serve as a liaison" between the scientific community and the Administration. The following

dialogue spelled out the beginning of the American effort:

"Alex," said Roosevelt, "what you are after is to see that the Nazis don't blow us up."

"Precisely," Sachs said.

Roosevelt called in his aide, General Edwin ("Pa") M. Watson: "Pa! This requires action!"