

Notes

1. The Einstein letter is reprinted in Vincent C. Jones, *Manhattan: The Army and the Atomic Bomb* (Washington, D.C.: U.S. Government Printing Office, 1985), 609-10.
2. Roosevelt to Einstein, October 19, 1939.
3. The United States had little reliable intelligence on the German bomb effort until late in the war. Thus it was not known until the ALSOS counterintelligence mission that the German program had not proceeded beyond the laboratory stage and had foundered by mid-1942. For details of the ALSOS mission see Richard Rhodes, *The Making of the Atomic Bomb* (New York: Simon & Schuster, 1986), pp. 605-10.
4. For details on the German research effort see McGeorge Bundy, *Danger and Survival: Choices About the Bomb in the First Fifty Years* (New York: Random House, 1988), pp. 14-23.
5. Lawrence Badash, "Introduction," in *Reminiscences of Los Alamos, 1943-1945*, edited by Lawrence Badash, Joseph O. Hirschfelder, and Herbert P. Broida (Dordrecht, Holland: D. Reidel Publishing Company, 1980), xi.
6. Rhodes, *Making of the Atomic Bomb*, p. 228.
7. William R. Shea, "Introduction: From Rutherford to Hahn," in *Otto Hahn and the Rise of Nuclear Physics*, edited by William R. Shea (Dordrecht, Holland: D. Reidel Publishing Company, 1983), p. 15.
8. *Ibid.*
9. Jones, *Manhattan*, p. 10.
10. Richard G. Hewlett and Oscar E. Anderson, Jr., *The New World, 1939-1946*. Volume I, *A History of the United States Atomic Energy Commission* (University Park, Pennsylvania: Pennsylvania State University Press, 1962), pp. 30-31.
11. *Ibid.*, p. 168.
12. Laura Fermi, *Atoms in the Family: My Life With Enrico Fermi* (Chicago: University of Chicago Press, 1954), p. 164.
13. Rhodes, *Making of the Atomic Bomb*, pp. 336-38.
14. Hewlett and Anderson, *New World*, p. 37.
15. *Ibid.*, p. 39.
16. MAUD, while it appears to be an acronym, is not. It is simply a codename.
17. Rhodes, *Making of the Atomic Bomb*, pp. 321-25 and 369.
18. Bundy, *Danger and Survival*, pp. 48-49.
19. Hewlett and Anderson, *New World*, p. 46.
20. *Ibid.*, p. 49.
21. *Ibid.*, p. 48.
22. *Ibid.*, p. 406.
23. *Ibid.*, pp. 74-75.
24. *Ibid.*, pp. 82-83.
25. Henry D. Smyth, *A General Account of the Development of Methods of Using Atomic Energy for Military Purposes Under the Auspices of the United States Government, 1940-1945* (Washington, D.C.: U. S. Government Printing Office, 1945), p. 70.
26. Rhodes, *Making of the Atomic Bomb*, p. 442.
27. *Ibid.*
28. Hewlett and Anderson, *New World*, p. 113.
29. Kenneth D. Nichols, *The Road to Trinity* (New York: William Morrow and Company, Inc., 1987), pp. 121 and 146.
30. Hewlett and Anderson, *New World*, p. 149.
31. Nichols recounts his adventure in borrowing the silver in *Road to Trinity*, p. 42.
32. Hewlett and Anderson, *New World*, p. 155.
33. *Ibid.*
34. *Ibid.*, p. 165.
35. For more on *k* see Rhodes, *Making of the Atomic Bomb*, p. 397.
36. Adsorption is a process whereby gases, liquids, or dissolved substances are gathered on a surface in a condensed layer.
37. Jones, *Manhattan*, p. 218.
38. Hewlett and Anderson, *New World*, p. 220.
39. Nichols, *Road to Trinity*, p. 108.
40. Rhodes, *Making of the Atomic Bomb*, p. 570.
41. *In the Matter of J. Robert Oppenheimer: Transcript of Hearing Before Personnel Security Board, Washington, D.C., April 12, 1954, Through May 6, 1954* (Washington, D.C.: Government Printing Office, 1954), pp. 12-13.
42. For details on Fuchs see Robert C. Williams, *Klaus Fuchs, Atom Spy* (Cambridge: Harvard University Press, 1987).