CHAPTER 9 – U.S. Export Policy Toward the PRC

- 1 P.L. 96-72, 93 Stat. 503, 50 U.S.C. app. sec. 2401-2420.
- 2 22 U.S.C. sec. 2751-2799.
- 3 P.L. 95-223, 91 Stat. 1628, 50 U.S.C. sec. 1701-1706.
- 4 P.L. 103-10 (March 27, 1993); P.L. 103-277 (July 5, 1994).
- 5 Export Administration Act of 1979, as amended, sec. 3; 50 U.S.C. app. sec. 2402(2).
- 6 Export Administration Act of 1979, as amended, sec. 5-7; 50 U.S.C. app. sec. 2404-2406.
- 7 Export Administration Act of 1979, as amended, sec. 5(b); 50 U.S.C. app. sec. 2404(b).
- 8 Export Administration Regulations, part 772, definition of "controlled country."
- 9 Export Administration Act of 1979, as amended, sec. 6; 50 U.S.C. app. sec. 2405.
- 10 Export Administration Regulations, sec. 738.2.
- Export Administration Act of 1979, as amended, sec. 6(a)(3); 50 U.S.C. app. sec. 2405(a)(3).
- 12 Export Administration Act of 1979, as amended, sec. 6(f); 50 U.S.C. app. sec. 2405(f).
- 13 Export Administration Act of 1979, as amended, sec. 7(a)(1); 50 U.S.C. app. sec. 2406.
- 14 Export Administration Act of 1979, as amended, sec. 7; 50 U.S.C. app. sec. 2406.
- 15 Export Administration Act of 1979, as amended, sec. 3; 50 U.S.C. app. sec. 2402.
- 16 Interview of Steven C. Goldman, October 29, 1998.
- 17 "Toward a National Export Strategy Report to the United States Congress," Trade Promotion Coordinating Committee, September 30, 1993.
- 18 "Export Controls and Non-proliferation Regimes in the Post-Cold War World," testimony of Under Secretary for International Security Affairs Lynn E. Davis before the Senate Subcommittee on International Affairs and Monetary Policy, February 24, 1994.
- 19 Export Administration Annual Report 1994 and 1995 Report on Foreign Policy Export Controls.
- 20 Interview of James A. Lewis, October 30, 1998.
- 21 Ibid.
- 22 Interview of R. Roger Majak, November 12, 1998.
- 23 Ibid.
- 24 Interview of James A. Lewis, October 30, 1998.
- 25 Export Administration Regulations, part 774, Supplement No. 1.
- 26 International Traffic in Arms Regulations, sec. 121.1.



- 27 Interview of James A. Lewis, October 30, 1998.
- 28 Ibid.
- 29 Ibid.
- The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, Initial Elements, July 11-12, 1996, sec. II.6.
- 31 Interview of James A. Lewis, October 30, 1998.
- 32 Interview of R. Roger Majak, November 12, 1998.
- 33 "Australia Group" fact sheet, October 27, 1997 (http://www.acda.gov/).
- 34 "Australia Group," Arms Control and Disarmament Agency, fact sheet, October 28, 1997.
- 35 Interview of Steven C. Goldman, October 29, 1998.
- 36 Ibid.
- 37 "China Lifting of Missile Sanctions," statement by Margaret Tutwiler, Department of State, February 21, 1992, Department of Commerce document.
- Interview of Steven C. Goldman, October 29, 1998; "China: Possible Missile Technology Transfers from U.S. Satellite Export Policy Background and Chronology," CRS Report to Congress, July 21, 1998.
- 39 "COCOM and the COCOM Successor Regime," Department of Commerce document.
- 40 Interview of Steven C. Goldman, October 29, 1998.
- 41 Executive Order 12735, Chemical and Biological Weapons Proliferation, November 16, 1990.
- Federal Register, 58 FR 68029; Export Administration Annual Report 1995 and 1996 Report on Foreign Policy Export Controls.
- 43 Export Administration Regulations, part 744, Supplement No. 4.
- 44 "Private/Public Awareness Program FY99 Budget Proposal," Department of Commerce document.
- 45 Interview of Steven C. Goldman, October 29, 1998.
- 46 Export Administration Regulations, sec. 730.2.
- 47 Export Administration Regulations, sec. 730.1; the Export Administration Regulations appear at 15 CFR parts 730-774.
- 48 Export Administration Regulations, sec. 730.3.
- 49 Ibid.
- 50 Bureau of Export Administration Annual Report to Congress, 1996.
- 51 Export Administration Regulations, sec. 774.1, Supplement No. 1.
- 52 Export Administration Regulations, sec. 774.1, Supplement No. 2.
- 53 "A Report of the Rationalization of the U.S. Munitions List with the Commerce Control List as Required by



- the Trade Promotion Coordinating Committee Report: Toward a National Export Policy," August 1994, Department of Commerce document.
- 54 Export Administration Regulations, sec. 774.1, Supplement No. 1.
- 55 Export Administration Regulations, part 738, Supplement No. 1.
- 56 Export Administration Regulations, sec. 738.1(b).
- 57 Export Administration Regulations, sec. 738.2(d)(2)(i)(A).
- 58 Export Administration Regulations, part 740.
- 59 Export Administration Regulations, sec. 740.1.
- 60 Export Administration Regulations, sec. 740.5, License Exception Civil end-users (CIV); identified as "CIV Yes" on the Commerce Control List.
- 61 Export Administration Regulations, sec. 740.5 and part 740, Supplement No. 1, Country Group D:1.
- 62 Export Administration Regulations, sec. 740.7.
- 63 Export Administration Regulations, part 744.
- 64 Arms Export Control Act; 22 U.S.C. sec. 2751-2799.
- 65 22 U.S.C. sec. 2778.
- 66 International Traffic in Arms Regulations, sec. 120.2 and 120.3.
- 67 Ibid.
- 68 Ibid.
- 69 Ibid.
- 70 Omnibus Trade and Competitiveness Act of 1988 (P.L. 100-418, August 23, 1988), sec. 5021.
- 71 Defense Production Act, sec. 721.
- 72 Omnibus Trade and Competitiveness Act of 1998 (P.L. 100-418, August 23, 1998), sec. 5021.
- 73 Ibid.
- 74 Ibid.
- 75 Economic Espionage Act of 1996 (P.L. 104-294, October 11, 1996), sec. 101.
- 76 O'Malley, Edward, "Economic Espionage Act," *The Intelligencer*, Fall 1998.
- 77 Economic Espionage Act of 1996 (P.L. 104-294, October 11, 1996), sec. 101.
- 78 Ibid.
- 79 O'Malley, Edward, "Economic Espionage Act," *The Intelligencer*, Fall 1998.
- 80 Ibid.
- 81 "Overview of the Export Administration Program," Department of Commerce, March 1985.





- 82 Export Administration Amendments Act of 1985 (P.L. 99-64, July 12, 1985).
- "Special Interagency Review: The Federal Government's Export Licensing Processes for Munitions and Dual-Use Commodities," September 1993; See also "Nuclear Nonproliferation: Export Licensing Procedures for Dual-Use Items Need to Be Strengthened," (GAO/NSIAD-94-119) April 26, 1994; "Export Controls: Some Controls Over Missile-Related Technology Exports To China Are Weak" (GAO/NSIAD-95-82), April 17, 1995.
- 84 Executive Order 12981 (Administration of Export Controls, December 5, 1995).
- 85 Ibid.
- In summary, Executive Order 12981 (Administration of Export Controls, December 5, 1995) specifies the following deadlines: initial processing by Commerce, 9 days; referral to other departments and agencies, end of the ninth day; return to Commerce of recommendations to approve or disapprove by other departments and agencies, 30 days; review of disputes and decision by the Chair of the Operating Committee, 14 days; appeal to the ACEP of the decision by a department or agency, 5 days; review of appeal and majority vote decision of the ACEP, 11 days; appeal of the ACEP decision by a department or agency, 5 days; review of appeal and majority vote decision of the Export Administration Review Board, 11 days; and appeal of the majority vote decision of the Export Administration Review Board to the President by a department or agency, 5 days.
- 87 "Commercial Communications Satellites and Hot Section Technology for the Development, Production or Overhaul of Commercial Aircraft Engines," *Federal Register*, October 21, 1996, Vol. 61, No. 204.
- 88 Executive Order 13020 (Amendment to Executive Order 12981, October 12, 1996).
- 89 Executive Order 13026 (Administration of Export Controls on Encryption Products, November 15, 1996).
- 90 Interview of Carol A. Kalinoski, November 3, 1998.
- 91 Ibid.
- 92 Ibid.
- 93 Bureau of Export Administration 1997 Annual Report.
- 94 Export Administration Regulations, sec. 750.4(b)(2).
- 95 Export Administration Act of 1979, as amended, sec. 12; 50 U.S.C. app. sec. 2411.
- 96 Export Administration Regulations, sec. 750.4(b)(2).
- 97 "Nuclear Nonproliferation: Export Licensing Procedures for Dual-Use Items Need to Be Strengthened"; see, e.g. GAO/NSIAD-94-119, April 26, 1994.
- "Special Interagency Review: The Federal Government's Export Licensing Processes for Munitions and Dual-Use Commodities," September 1993; "Nuclear Nonproliferation: Export Licensing Procedures for Dual-Use Items Need to Be Strengthened," (GAO/NSIAD-94-119) April 26, 1994; "Export Controls: Some Controls Over Missile-Related Technology Exports To China Are Weak" (GAO/NSIAD-95-82) April 17, 1995; "Export Controls: Information on the Decision to Revise High Performance Computer Controls," GAO/NSIAD-98-196, September 16, 1998.



- 99 Export Administration Regulations, part 772.
- 100 Effective October 1, 1998, the Defense Technology Security Administration (DTSA) was renamed the "Technology Security Directorate" and became part of the new Defense Threat Reduction Agency (DTRA).
- 101 "Export Controls: Some Controls Over Missile-Related Technology Exports To China Are Weak," (GAO/NSIAD-95-82) April 17, 1995.
- 102 Interview of James A. Lewis, October 30, 1998.
- 103 "Export Controls: Some Controls Over Missile-Related Technology Exports To China Are Weak," (GAO/NSIAD-95-82) April 17, 1995.
- 104 Export Administration Regulations, sec. 730.9(b).
- 105 Export Administration Regulations, sec. 764.5(b)(4).
- 106 Export Administration Act of 1979, as amended, sec. 11(b); 50 U.S.C. app. sec. 2410(a).
- 107 Ibid.
- 108 Export Administration Act of 1979, as amended, sec. 11(c)(1), 50 U.S.C. app. sec. 2412(c)(1).
- 109 Iran Air v. Kugelman, 996 F.2d 1253 (D.C.Cir. 1993).
- 110 Export Administration Regulations, sec. 764.3(a)(2).
- 111 Export Administration Act of 1979, as amended, sec. 11(h), 50 U.S.C. app. sec. 2412(h); Export Administration Amendments Act of 1985, sec. 112(c)(2); Omnibus Trade and Competitiveness Act of 1988, sec. 2426.
- 112 Export Administration Regulations, sec. 766.24.
- Export Administration Regulations, sec. 750.8(a) and sec. 740.2(b).
- 114 Export Administration Regulations, sec. 764.3(a)(3).
- 115 Export Administration Act of 1979, as amended, sec. 12(a), 50 U.S.C. app. sec. 2413(a).
- 116 International Emergency Economic Powers Act, sec. 206(a), 50 U.S.C. sec. 1705.
- 117 Ibid.
- 118 Interview of William A. Reinsch, November 19, 1998.
- 119 Export Administration Regulations, part 774, Supplement No. 1.
- 120 Export Administration Regulations, sec. 748.3.
- 121 "Procedures on Commodity Jurisdiction and Commodity Classification," National Security Council memorandum, April 15, 1996, White House document.
- 122 "Response to November 2, 1998 Cox Request Regarding Commodity Classifications," December 23, 1998, Department of Commerce document.
- 123 Interview of Iain S. Baird, November 17, 1998.



- 124 Ibid.
- 125 Interview of William Lowell, November 19, 1998.
- 126 Ibid.
- 127 Ibid.
- 128 Ibid.
- 129 Ibid.
- 130 International Traffic in Arms Regulations, sec. 120.
- 131 Interview of William Lowell, November 19, 1998.
- 132 Interview of William Lowell, November 19, 1998; Executive Order 12981 (Administration of Export Controls, December 5, 1995).
- 133 Interview of William Lowell, November 19, 1998.
- 134 International Traffic in Arms Regulations, sec. 120.3.
- 135 Export Administration Regulations, part 768.
- 136 International Traffic in Arms Regulations, sec. 120.4.
- 137 Interview of William Lowell, November 19, 1998.
- 138 Ibid.
- 139 Memorandum, "Procedures on Commodity Jurisdiction and Commodity Classification," April 15, 1996, White House document.
- 140 Interview of William Lowell, November 19, 1998.
- 141 Ibid.
- 142 Ibid.
- 143 Ibid.
- 144 International Traffic in Arms Regulations, sec. 120.8 and 123.15.
- 145 Interview of William Lowell, November 19, 1998; International Traffic in Arms Regulations, sec. 123.15. Regarding exports of major defense equipment to NATO countries, 15 calendar days are required to lapse after notification to Congress before the license is approved; regarding such exports to any other destination, including the PRC, 30 calendar days are required to lapse.
- 146 Ibid.
- 147 Ibid.
- 148 Ibid.
- 149 22 U.S.C. sec. 2778(e); International Traffic in Arms Regulations, sec. 127.3.
- 150 International Traffic in Arms Regulations, sec. 127.7, 127.8 and 127.6.



- 151 International Traffic in Arms Regulations, sec. 127.12(b)(3).
- 152 Interview of William Lowell, November 19, 1998.
- 153 Ibid.
- 154 Export Administration Annual Report FY 1986; "Background Paper on U.S. Export Licensing Policy for the PRC," Department of Commerce document.
- 155 Background Paper on U.S. Export Licensing Policy for the PRC, Department of Commerce document.
- 156 Export Administration Annual Report Fiscal Year 1990.
- 157 Memorandum of Agreement on Satellite Technology Safeguards between the Governments of the United States of America and the People's Republic of China, signed December 17, 1988, Department of Commerce document.
- 158 Memorandum of Agreement Between the Government of the United States of America and the Government of the People's Republic of China regarding International Trade in Commercial Launch Services, signed December 17, 1988.
- 159 Memorandum of Agreement on Liability for Satellite Launches Between the Government of the United States of America and the Government of the People's Republic of China, signed December 17, 1988.
- 160 Memorandum of Agreement on Satellite Technology Safeguards Between the Governments of the United States of America and the People's Republic of China, signed February 11, 1993, Department of Commerce document.
- 161 Memorandum of Agreement Between the Government of the United States of America and the Government of the People's Republic of China regarding International Trade in Commercial Launch Services, signed January 27, 1995, Department of Commerce document.
- Agreement Between the Government of the United States of America and the Government of the People's Republic of China to Amend the Memorandum of Agreement Between the Government of the United States of America and the Government of the People's Republic of China regarding International Trade in Commercial Trade Services, signed October 27, 1997.
- 163 Freedenberg, Paul, Senate, Commerce, Science and Transportation Committee Hearing, September 17, 1998.
- Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1990 (November 21, 1989), sec. 610.
- 165 Foreign Relations Authorization Act, Fiscal Years 1990 and 1991 (February 16, 1990).
- "Chronology Concerning Presidential Waivers of Sanctions, Exports of Satellites to China, and a Criminal Investigation on Loral Space and Communications Co. for Allegedly Passing Missile Technology to China," CRS Memorandum to House International Relations Committee, April 28, 1998; "China: Possible Missile Technology Transfers from U.S. Satellite Export Policy Background and Chronology," CRS Report, July 21, 1998.
- 167 Letter to the Honorable Newt Gingrich, Speaker of the House of Representatives from President William J.



- Clinton, February 18, 1998, White House document.
- 168 Gerth, Jeff, "U.S. Business Role in Policy on China is Under Question," New York Times, April 13, 1998.
- 169 Gerth, Jeff and John M. Broder, "Papers Show White House Staff Favored a China Satellite Permit," New York Times, May 23, 1998; "Request for Presidential National Interest Waiver for Chinasat 8 Communications Satellite Project," Memorandum for the President from Samuel L. Berger, Larry Stein, and Daniel Tarullo, February 12, 1998, White House document.
- 170 "Waiver of Tiananmen Square Sanctions," Memorandum for the President from Phil Caplan, February 18, 1988.
- 171 Interview of Robert S. Litt, December 8, 1988.
- 172 "Waiver of Tiananmen Square Sanctions," memorandum for the President from Phil Caplan, February 18, 1988.
- 173 Department of Commerce document; interview of Robert S. Litt, December 8, 1988.
- 174 "Request for Presidential National Interest Waiver for Chinasat 8 Communications Satellite Project," draft Memorandum for the President.
- 175 "Request for a Presidential National Interest Waiver for Exports to China for the Chinasat Satellite Program," Memorandum from William J. Burns, Executive Secretary, Department of State, to Glyn T. Davies, Executive Secretary, National Security Council, January 8, 1998.
- 176 "Request for Presidential National Interest Waiver for Chinasat 8 Communications Satellite Project," Memorandum for the President, February 12, 1998.
- 177 National Defense Authorization Act for Fiscal Year 1991 (P.L. 101-510, November 5, 1990), sec. 1702 and 1703
- 178 "U.S. Sanctions Authority," Department of Commerce document.
- 179 "China: Possible Missile Technology Transfers from U.S. Satellite Export Policy Background and Chronology," CRS Report for Congress, July 21, 1998.
- 180 Federal Register, July 17, 1991.
- 181 "Status of U.S. Tiananmen Sanctions," Department of Commerce document.
- 182 "China Lifting of Missile Sanctions," Department of State, Press Statement, February 21, 1992, Department of Commerce document.
- 183 "China: Possible Missile Technology Transfers from U.S. Satellite Export Policy Background and Chronology," CRS Report for Congress, July 21, 1998.
- 184 Federal Register, July 17, 1991
- 185 "MTCR Category Sanctions on China and Pakistan," Department of Commerce document.
- "Joint Statement of the United States of America and the People's Republic of China on Missile Proliferation," Department of Commerce document; "MTCR Issues with China and Hong Kong," Department of Commerce document.



- 187 A chronology of possible MTCR violations are listed in CRS Memorandum to Representative Curt Weldon, "Chronology of Chinese Weapon related Transfers," August 31, 1998.
- 188 "A Report on the Rationalization of the U.S. Munitions List with the Commerce Control List As Required by the Trade Promotion Coordinating Committee Report: Toward a National Export Strategy," August 1994, Department of Commerce document.
- 189 Ibid.
- 190 Memorandum of Disapproval for the Omnibus Export Amendments Act of 1990 (H.R. 4653), November 16, 1990, 26 Weekly Comp. Pres. Doc. 1839.
- 191 [State ITAR changes]; "Revisions to the Commerce Control List; Transfer of Communication Satellites from the U.S. Munitions List," Federal Register, Vol. 57, No. 206, October 23, 1992.
- "Removal of Commercial Communications Satellites and Hot Section Technology From State's USML for Transfer to Commerce's CCL," Federal Register, Vol. 61, No. 215, November 5, 1996; "Revisions to the Commerce Control List; Transfer of Communication Satellites from the U.S. Munitions List, "Federal Register, Vol. 57, No. 206, October 23, 1992.
- 193 Export Enhancement Act of 1992 (P.L. 102-429, October 21, 1992), sec. 201.
- 194 "Toward a National Export Strategy Report to the United States Congress," Trade Promotion Coordinating Committee, September 30, 1993.
- 195 Ibid.
- 196 Ibid.
- 197 Advocacy Center Home Page (http://www.ita.doc.gov/advocacy); "Background Data for Companies Seeking U.S. Advocacy Support" form (OMB No. 0625-0220), Department of Commerce document; "Agreement Concerning Bribery and Corporate Policy Prohibiting Bribery" form, Department of Commerce document.
- 198 "Commercial Communications Satellites," Department of Commerce document.
- 199 Transmittal letter with White Paper from C. Michael Armstrong to Anthony Lake, Assistant to the President for National Security Affairs, March 13, 1995, Department of Commerce document.
- 200 "Imposition of Foreign Policy Export Controls on Commercial Communications Satellites and Hot Section Technology for the Development and Production of Civil Gas Turbine Engines," report to Congress, March 1996, Department of Commerce document.
- 201 Letter to Samuel R. Berger, Assistant to the President for National Security Affairs, from C. Michael Armstrong, Chairman and Chief Executive Officer of Hughes Electronics, September 22, 1995, White House document.
- 202 Letter to President from C. Michael Armstrong, Chairman and Chief Executive Officer of Hughes Electronics Corporation, Bernard L. Schwartz, Chairman and Chief Executive Officer of Loral Corporation, and Daniel M. Tellep, Chairman and Chief Executive Officer of Lockheed Martin Corporation, October 6, 1995, White House document.



- 203 "Civil Communications Satellites Options for Control and Licensing," sec. V.2, Department of Commerce document; Department of Commerce Press Release, March 14, 1996, Department of Commerce document; "Satellite Exports: Nobody Was Overruled," Warren Christopher, Los Angeles Times, June 8, 1998.
- 204 "Commercial Communications Satellites and Hot Section Technology for the Development, Production or Overhaul of Commercial Aircraft Engines," Federal Register, Vol. 61, No. 204, October 21, 1996.
- 205 "USML Transfers to the CCL," undated, Department of Commerce document.
- 206 Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 (October 17, 1998), sec. 1513.
- 207 Ibid.
- 208 Ibid.
- 209 Ibid.
- 210 Opall-Rome, Barbara, "White House Plans Dilution of Export Law," *Space News*, Vol. 9, No. 17, December 7-13, 1998.
- 211 Export Administration Annual Report Fiscal Year 1991.
- 212 "Export Controls on Supercomputers," Federal Register, Vol. 57, No. 96, May 18, 1992.
- 213 Export Administration Annual Report 1992.
- 214 Letter to Edward McCracken, Chief Executive Officer, Silicon Graphics from President William J. Clinton, September 15, 1993, White House document.
- 215 "Toward a National Export Strategy Report to the United States Congress," Trade Promotion Coordinating Committee, September 30, 1993, chap. 5.
- 216 "Computers: General License Eligibility; Supercomputer Definition," *Federal Register*, February 24, 1994, Vol. 59, No. 37.
- 217 Export Administration Regulations, part 778, Supplement No. 4.
- 218 "Computers: General License Eligibility; Supercomputer Definition," Department of Commerce, *Federal Register*, Vol. 59, No. 37, February 24, 1994.
- 219 Export Administration Annual Report 1995 and 1996 Report on Foreign Policy Export Controls.
- 220 "Export Control Reform," Statement by the White House Press Secretary, March 30, 1994.
- 221 "Establishment of New General License for Shipments to Country Groups QWY and the People's Republic of China," *Federal Register* notice, April 4, 1994, Vol. 29, No. 64.
- 222 "Export Control Reform," Statement by the White House Press Secretary, March 30, 1994.
- 223 Building the Basics: An Examination of High-Performance Computing Export Control Policy in the 1990's, Seymour Goodman, Peter Wolcott, and Grey Burkhart (Center for International Security and Arms Control, Stanford University, November 1995); The changes also were said to be based on a Department of Defense study (interview of Sue E. Eckert, November 6, 1998). The Select Committee has not been able to identify a copy of the Department of Defense study.



- 224 U.S. Department of Commerce Procurement Request EXBX2100500806.
- 225 Interview of Mitchel B. Wallerstein, November 25, 1998.
- 226 Interview of William A. Reinsch, November 19, 1998.
- 227 Ibid.
- 228 "Revisions to the Export Administration Regulations: Reform of Computer Export Controls; Establishment of General License G-CTP," *Federal Register*, January 25, 1996, Vol. 61, No. 17.
- 229 "Revisions to the Export Administration Regulations: Reform of Computer Export Controls; Establishment of General License G-CTP," Department of Commerce, *Federal Register*, Vol. 61, No. 17, January 25, 1996.
- 230 National Defense Authorization Act for Fiscal Year 1998 (P.L. 105-85, November 18, 1997), sec. 1211.
- 231 Ibid.
- 232 "EA Accomplishments," November 1996, Department of Commerce document.
- 233 "January 6, 1994 Meeting of TPCC Working Groups Chairs," memorandum to Iain S. Baird from Mark J. Austin, January 10, 1994, Department of Commerce document; Department of Commerce document.
- 234 "Revisions to the Commodity Control List Based on COCOM Review," Federal Register, Vol. 55, No. 126, June 29, 1990.
- 235 Export Administration Regulations, sec. 399.1, Supplement No. 1, Group 0, ECCN 1091A, January 1, 1986.
- 236 "Revisions to the Commodity Control List Based on COCOM Review," Federal Register, Vol. 55, No. 126, June 29, 1990.
- 237 Export Administration Regulations, part 774, Supplement No. 1, ECCN 2B001.
- Export Administration Regulations, sec. 399.1, Supplement No. 1, Group 0, ECCN 1091A, January 1, 1986, Export Administration Regulations, part 744, Supplement No. 1, ECCN 2B001.
- 239 The Wassenaar Arrangement, Statements of Understanding and Validity Notes, March 12, 1998.
- 240 "Hong Kong's Reversion to China: Effective Monitoring Critical to Assess U.S. Nonproliferation Risks," (GAO/NSIAD-97-149) May 22, 1997.
- 241 United States-Hong Kong Policy Act of 1992 (P.L. 102-383, October 5, 1992).
- 242 "Hong Kong's Reversion to China: Effective Monitoring Critical to Assess U.S. Nonproliferation Risks," (GAO/NSIAD-97-149) May 22, 1997.
- 243 Ibid.
- 244 Letter, including Answers to Questions for the Record, to the Chairman and Ranking Member of the Select Committee on U.S. National Security and Military/Commercial Concerns with the People's Republic of China from the U.S. General Accounting Office, December 3, 1998.
- 245 Interview of William Lowell, November 19, 1998.



- 246 *See, e.g.*, "Hong Kong's Reversion to China: Effective Monitoring Critical to Assess U.S. Nonproliferation Risks," GAO, May, 1997.
- 247 U.S. Customs briefing to Select Committee Staff, October 28, 1998.
- 248 Memorandum from Gary Christopherson to Bruce R. Lindsey, December 6, 1993 (Exhibit 14-5 to the U.S. Senate Committee on Governmental Affairs Report).
- 249 Testimony of Thomas R. Hampson before the U.S. Senate Committee on Governmental Affairs, July 15, 1997.
- 250 Testimony of Thomas R. Hampson before the U.S. Senate Committee on Governmental Affairs (SCGA), July 15, 1997. See also, e.g., Nicholas Eftimiades, "Chinese Military Operations," 1995; British Broadcasting Network Summary of World Broadcasts, March 9, 1995.
- 251 "Mobile Satellite," Satellite Week, May 18, 1998.
- 252 Ibid.
- 253 China Satellite Launches (undated).
- 254 Deposition of Robert P. Gallagher by the SCGA, May 30, 1997.
- 255 Deposition of John Dickerson by the SCGA, May 30, 1997.
- 256 Deposition of Robert P. Gallagher by the SCGA, May 30, 1997.
- 257 Deposition of John Dickerson by the SCGA, May 30, 1997; Deposition of Robert P. Gallagher by the SCGA, May 30, 1997.
- 258 Deposition of Robert P. Gallagher by the SCGA, May 30, 1997.
- 259 Interview of Lewis Williams by the SCGA, June 11, 1997; deposition of Alan Neuschatz by the SCGA, May 22, 1997.
- 260 Deposition of Janice Stewart by the SCGA, May 16, 1997.
- 261 Interview of Lewis Williams by the SCGA, June 11, 1997.
- 262 Interview of Lewis Williams by the SCGA, June 12, 1997.
- 263 Deposition of Janice Stewart by the SCGA, May 16, 1997.
- 264 Deposition of John Dickerson by the SCGA, May 30, 1997.
- 265 SCGA Report.
- 266 John Huang Database prepared by the SCGA (Exhibit 14-29 to the SCGA Report).
- 267 Testimony of Paula Greene before the SCGA, July 17, 1997.
- 268 Deposition of Celia Mata by the SCGA, August 1, 1997.
- 269 Testimony of Paula Greene before the SCGA, July 17, 1997.
- 270 Deposition of Janice Stewart by the SCGA, May 16, 1997.



- 271 SCGA Report.
- 272 Deposition of Jeffrey Garten by the SCGA, May 16, 1997.
- 273 Letter from Ty Cobb, Esq., December 3, 1998.

CHAPTER 10 – Manufacturing Processes

- 1 "Report to Congress Pursuant to Section 1305 of the FY97 National Defense Authorization Act," Defense Intelligence Agency, April 1997.
- 2 "Current and Future Challenges Facing Chinese Defense Industries," John Frankenstein and Bates Gill, China Quarterly, June 1996; and Gearing up for High-Tech Warfare, Richard Bitzinger and Bates Gill, Center for Strategic and Budgetary Assessments, 1996.
- 3 "Current and Future Challenges Facing Chinese Defense Industries," John Frankenstein and Bates Gill, *China Quarterly*, June 1996.
- 4 *Gearing up for High-Tech Warfare*, Richard Bitzinger and Bates Gill, Center for Strategic and Budgetary Assessments, 1996.
- 5 "Report on the Outline of the Ninth Five-year Plan for National Economic and Social Development and Long-Range Objectives to the Year 2010," Li Peng, Speech delivered to the Fourth Session of the Eighth National People's Congress on March 5, 1996.
- 6 "China: Domestic Change and Foreign Policy," Michael Swaine, The RAND Corporation, Santa Monica, California, 1995.
- 7 "Report to Congress Pursuant to Section 1305 of the FY97 National Defense Authorization Act," Defense Intelligence Agency, April 1997.
- 8 "Some Examples of Chinese Technology Targeting," from the Defense Intelligence Agency program brief ing on "Project Worldtech," no date; and *China's Aerospace Industry*, Jane's Information Group, 1997.
- 9 Department of Defense, *The Militarily Critical Technologies List. Part I: Weapons Systems Technologies* (Washington, D.C.: U.S. Department of Defense, June 1996).
- 10 Defense Department report, February 1996.
- Export Administration Regulations, Section 399.1, Supplement No. 1, Group 0, ECCN 1091A, January 1, 1986.
- 12 Export Administration Regulations, Part 774, Supplement No. 1, ECCN 2B001.
- 13 Export Administration Regulations, Part 738.4.
- 14 Export Administration Regulations, Part 774, Supplement No. 1, Category 2, Group B.
- 15 Export Administration Regulations, Part 774, Supplement No. 1, Category 2.



- For example, the ECCN for numerically controlled machine tools is 2B001. The first "0" denotes that the reason for the control of machine tools with ECCN 2B001 is for national security reasons as opposed to a "1" (missile technology), a "2" (nuclear nonproliferation), a "3" (chemical & biological weapons), or a "9" (anti-terrorism, crime control and other factors). The second "0" indicates that the reason for control is for multilateral vice a unilateral ("9") concern. Export Administration Regulations Part 738.2.
- 17 General Accounting Office, Export Controls: Sensitive Machine Tool Exports to China GAO/NSIAD-97-4, November 1996.
- Department of Defense, *The Militarily Critical Technologies List* (Part I: Weapons Systems Technologies (Washington, D.C., Department of Defense, June 1996).
- 19 It was noted that this information is mostly anecdotal and far from comprehensive.
- The Association for Manufacturing Technology, "American Machine Tool Producers Unfairly Burdened by U.S. Export Controls," 1998.
- 21 Defense Department report, 1996.
- 22 The machine tool diversion reportedly remains under investigation by the Department of Justice.
- 23 E-mail from Iain Baird to Sue Eckert, May 27, 1994.
- 24 Memorandum for Deputy Assistant Secretary for Counterproliferation Policy from Acting Director/DTSA, June 8, 1994.
- 25 Defense Department document, 1994.
- Memorandum for the Director, Strategic Trade Policy, Defense, DTSA from Chief, Technology Transfer Branch, Nonproliferation and Arms Control Division, DIA, July 27, 1994.
- 27 Memorandum for Director, Strategic Trade Policy, Defense, DTSA from Chief, Technology Transfer Branch, Nonproliferation and Arms Control Division, DIA, Subject: Chinese Acquisition of U.S. Machine Tools, August 9, 1994.
- 28 CATIC Inventory Lists.
- 29 Attachment B to Export License Application #C771659.
- 30 McDonnell Douglas briefing charts, June 7, 1994.
- 31 Flight International Magazine, edition of 20-26 July, 1994.
- 32 Memorandum for the Record authored by Dr. Peter Leitner, Senior Strategic Trade Advisor, DTSA, Subject: Telecon w/Joyce Poetzl and Bob Hitt, July 26, 1994. Memorandum for Executive Secretary, ACEP from Colonel Raymond Willson, Acting Director, Licensing Directorate, DTSA, August 5, 1994.
- 33 Interview of Elroy Christiansen, October 19, 1998.
- 34 GAO Report, Export Controls, Sensitive Machine Tool Exports to China, November 1996.
- 35 ACEP Minutes from June 24, 1994.
- 36 Ibid.



- 37 ACEP Minutes from July 28, 1994.
- 38 Memorandum for Commerce Deputy Assistant Secretary for Export Administration Sue Eckert from Director DTSA Dave Tarbell, August 26, 1994.
- 39 Copies of McDonnell Douglas machine tool export licenses, September 14, 1994.
- 40 State Department cable 235206 to U.S. Embassy/Beijing, August 29, 1994.
- 41 U.S. Embassy Beijing cable 43102, September 13, 1994.
- 42 Flight International Magazine, edition of 20-26 July, 1994.
- 43 McDonnell Douglas Briefing Notes, June 7, 1994.
- McDonnell Douglas letter to Office of Exporter Services/Technical Information Support Division, April 4, 1995. McDonnell Douglas Letter to Office of Export Enforcement, Springfield, VA, April 4, 1995.
- 45 Memorandum to Acting Director/OEE Menefee from DTSA/TSO, October 4, 1995.
- 46 CBS transcript, 60 Minutes program of June 7, 1998.
- 47 *U.S. News & World Report*, Vol. 120, No. 5, February 5, 1996. Letter to Undersecretary Reinsch from Senator D'Amato, February 23, 1996. Draft Commerce letter to Senator D'Amato, March 25, 1996. Representative Gilman letter to Reinsch, March 5, 1996.
- 48 General Accounting Office, Export Controls: Sensitive Machine Tool Exports to China GAO/NSIAD-97-4, November 1996.
- 49 Export Administration Regulations, Part 766.24(a).
- 50 Select Committee staff were afforded an opportunity to examine the TDO request, but Commerce officials declined to provide a copy of the document to the Select Committee based on a claim that the document contained law enforcement sensitive information regarding an active criminal investigation.
- Letter to Douglas Aircraft Company President Robert Hood from CATIC Vice President Tang Xiaoping, September 30, 1993.
- 52 Appraisal, Williams & Lipton Company, March 1, 1994.
- 53 Telephone Interview of Douglas Monitto, October 20, 1998.
- Telephone Interview of Douglas Monitto, October 20,1998. Memorandum of Understanding between CATIC, Monitor Aerospace and AVIC, January 24, 1994.
- Letter to Lawrence W. Clarkson, Corporate Vice President, Planning and International Development, Boeing Company from Tang Xiaoping, Executive Vice President, CATIC, January 27, 1994.
- 56 Letter to Tang Xiaoping, from J.D. Masterson, Boeing Commercial Airplane Group, April 6, 1994.
- 57 Telephone Interview of Douglas Monitto, October 20, 1998.
- Letter to CATIC Deputy Managing Director Sun Deqing from Douglas Monitto from Monitto, July 29, 1994.



- 59 Letter to CATIC Deputy Managing Director Sun Deqing from Douglas Monitto, September 23, 1994.
- Telephone Interview of Douglas Monitto, October 20, 1998.
- 61 Ibid.
- Letter to McDonnell Douglas China Program Manager Bob Hitt from CATIC Supply Vice President Zhang Jianli, July 5, 1995.
- Letter to Office of Export Enforcement from McDonnell Douglas reporting location of machine tools, April 4, 1994.
- 64 Letter to John Bruns, Senior Manager, McDonnell Douglas Corporation Beijing Office, March 27, 1994.
- Memorandum to Joyce Poetzl from John Bruns and R. J. Hitt, Subject: Inspection of Machine Tools at Nanchang Aircraft Manufacturing Company, August 26, 1995.
- In response to a Select Committee subpoena, CATIC USA, Inc., a wholly owned subsidiary of CATIC, provided documents responsive to Committee's requests. Although a large number of the documents were in Chinese, most were provided with English translations. However, the transmittal letter that accompanied these documents indicated that CATIC (USA) could not guarantee the accuracy of the translations, although they had no reason to doubt their accuracy. Thus, in those instances in which a Chinese document is cited, the Select Committee is relying upon an English translation that accompanied that document. Letter to Rick Cinquegrana, Esq., Chief Investigative Counsel, Select Committee from Barbara Van Gelder, Esq., Wiley, Rein & Fielding, October 14, 1998.
- Fax to Chris Riddle, McDonnell Douglas from Jenny Liu, TAL industries, August 19, 1994 and many others that reflect Ms. Liu of was in charge of the packout.
- 68 TAL Industries response to Interrogatories, November 6, 1998.
- 69 Ibid.
- 70 TAL Industries response to Interrogatories, November 6, 1998. CATIC (USA) response to Interrogatories, October 21, 1998.
- 71 Inventory List of materials and equipment sold to CATIC.
- 72 Export Administration Regulations, Part 730 and other sections.
- 73 CATIC fax, April 21, 1994. Weekly Report, May 31, 1994. Undated Chinese document. Fax from Nanchang to Hu Bo Ru, July 25, 1994.
- Letter to Bob Hitt, Project Manager, China Program from Luo Huajie, Vice President of Nanchang Aircraft Manufacturing Company, September 23, 1995.
- 75 Ibid.
- 76 Ibid.
- Letter to McDonnell Douglas China Program Manager Bob Hitt from CATIC Supply Vice President Zhang Jianli, July 5, 1995.
- 78 DIA report, 1995. See also The Militarily Critical Technologies List. Part I: Weapons Systems Technologies,



- Department of Defense, June 1996, sec. 10; and "Report of Foreign Travel," Ronald V. Miskell, U.S. Department of Energy, February 1998.
- 79 *China Today: Defense Science and Technology*, Xie Guang, ed., Beijing National Defense Industry Press, 1993; and *Gearing up for High-Tech Warfare*, Richard Bitzinger and Bates Gill, Center for Strategic and Budgetary Assessments, 1996.
- 80 See also *The Militarily Critical Technologies List. Part I: Weapons Systems Technologies*, Department of Defense, June 1996, sec. 1.
- 81 *China's Aerospace Industry*, Jane's Information Group, 1997.
- "Cruise Control: Relaxed U.S. Export Controls Could Help China Build Stealthier and Longer-Range Cruise Missiles, Pentagon Officials Claim," Nigel Holloway, *Far Eastern Economic Review*, August 14, 1997.
- 83 "PLAAF & Aviation Production Overview," Kenneth W. Allen, Henry L. Stimson Center, Washington, D.C., 1998.
- 84 "PRC Gas Turbine Acquisition Efforts," Peter Leitner, Department of Defense, Defense Technology Security Administration, September 1, 1992.
- 85 *China's Aerospace Industry*, Jane's Information Group, 1997.
- "A jet engine is composed of three sections: the cold section, or the fan and compressor, which is where the air enters the engine; the hot section, comprised of the combustor and portions of the turbine, which are the components exposed to combustion gases; and the warm section, or exhaust nozzle, which is where the exhaust gases leave the engine." (Emphasis added). Export Controls: Change in Export Licensing Jurisdiction for Two Sensitive Dual-Use Items GAO/NSIAD-97-24, January 1997. See also China's Aerospace Industry, Jane's Information Group, 1997.
- 87 Background Paper, Defense Intelligence Agency, 1993.
- 88 Background Paper, Defense Intelligence Agency, 1993.
- Memorandum for the Record, December 17, 1998. William Schneider described this incident during a briefing on the dual-use applications of high performance computers. William Schneider, briefing on "High Performance (HPC) Exports to China," October 1, 1998. See also Defense Intelligence Agency, 1993.
- 90 Defense Intelligence Agency, 1993.
- 91 Background Paper, Defense Intelligence Agency, 1993.
- 92 Export Controls: Change in Export Licensing Jurisdiction for Two Sensitive Dual-Use Items GAO/NSIAD-97-24, January 1997, p. 5, (B22); and The Militarily Critical Technologies List. Part I: Weapons Systems Technologies, Department of Defense, June 1996, sec. 1.
- 93 Memorandum for the Record, October 30, 1998.
- 94 "PLAAF & Aviation Production Overview," Kenneth W. Allen, Henry L. Stimson Center, Washington, D.C., 1998.



- 95 China's Aerospace Industry, Jane's Information Group, 1997, pp. 67, 70, (B172); and "PRC Gas Turbine Acquisition Efforts" Memorandum by Peter Leitner, Defense Technology Security Administration, September 1, 1992.
- 96 China's Aerospace Industry, Jane's Information Group, 1997.
- 97 Ibid.
- 98 "PRC Gas Turbine Acquisition Efforts" Memorandum by Peter Leitner, Defense Technology Security Administration, September 1, 1992; and "Garrett Engine Case," Memorandum from Peter Leitner, DTSA, to Barbara Dixon, Defense Intelligence Agency, July 21, 1992.
- 99 China's Aerospace Industry, Jane's Information Group, 1997.
- 100 "WP-11 Engine Information," James Clauson, Jane's Information Group, June 26, 1996.
- 101 Ibid.
- 102 Memorandum for the Assistant Secretary of Defense for International Security Affairs, January 7, 1993.
- 103 "Cruise Control: Relaxed U.S. Export Controls Could Help China Build Stealthier and Longer-Range Cruise Missiles, Pentagon Officials Claim," Nigel Holloway, *Far Eastern Economic Review*, August 14, 1997; and "Williams FJ44," *Jane's All the World's Aircraft 1990-1991*, Jane's Information Group, 1990.
- 104 "Morphing the Silkworm," Dennis Gormley and Gregory DeSantis, Pacific-Sierra Research Corporation, Arlington, Virginia, Presentation to the Rumsfeld Commission, June 3, 1998; and *China's Aerospace Industry*, Jane's Information Group, 1997.
- "Cruise Control: Relaxed U.S. Export Controls Could Help China Build Stealthier and Longer-Range Cruise Missiles, Pentagon Officials Claim," Nigel Holloway, Far Eastern Economic Review, August 14, 1997.
- "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- Memorandum for the Record, Review of State Department Cables Regarding Allied Signal/Garrett Jet engine Negotiations with the PRC, December 17, 1998. The relevant State Department cable— DTG 161312Z July 92, #0148838-0148839—was sent to Commerce, State and Defense. See also "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- A history of the Garrett case is presented in "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992. See also "Issue Paper on Garrett Engine Sale to PRC," Attachment to "Export of Garrett Engines to the PRC," Memorandum from Peter M. Sullivan, Acting



- Deputy Under Secretary of Defense for Technology Security Policy, to Deputy Secretary of Defense, December 29, 1992.
- 109 "NAMC/PAC K-8 Karakorum," Richard L. Aboulafia, *World Military & Civil Aircraft Briefing*, Teal Group Corp., Arlington, Virginia, March 1998.
- 110 The K-8 is reportedly intended to serve primarily as a jet trainer. However, to meet future combat mission requirements and increase the potential for exports, the PRC designed the K-8 to carry a variety of arma ments, including a gun pod, two air-to-air missiles, a 12-round rocket pod, or a bomb. "Myanmar is First Export Customer for K-8 Trainer," Bruce Hawke, *Jane's Defense Weekly*, June 24, 1998.
- 111 "NAMC/PAC K-8 Karakorum," Richard L. Aboulafia, *World Military & Civil Aircraft Briefing*, Teal Group Corp., Arlington, Virginia, March 1998.
- 112 Memorandum from Peter Leitner to Peter Sullivan, Defense Technology Secuirty Administration, December 30, 1992.
- "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- 114 "Type Certification Data Sheet No. E6WE." Federal Aviation Administration, March 23, 1998.
- 115 The Federal Aviation Administration can certify a jet engine as "civil" if it meets certain safety and other requirements for civil aviation. Military engines that meet such requirements can be certified as civil through this process. A civil certification places the engines on the Commerce Control List, giving Commerce authority to license exports, pursuant to Export Administration Act Section 17(c) on Civil Aircraft Equipment. However, Section 17(c) states that Commerce has jurisdiction over civil aircraft equipment that "is to be exported to a country other than a controlled country." The PRC was a "controlled country" during the time of the Garrett case. Iain Baird believed that in-as-much as the statute mandated inclusion of civil aircraft engines to some destinations on the Commerce Control List (CCL), it was decided to put the item as a whole on the list. Commerce was unable to provide a formal legal analysis of 17 (c) with respect to exports of civil aircraft equipment to controlled countries. Civil certification issues and EAA Section 17(c) are discussed in, Interview of Iain S. Baird, November 17, 1998; and Interview of Bruce C. Webb, December 2, 1998. For the response to the Select Committee's request for records regarding commodity jurisdiction, see letter from John F. Sopko, Chief Counsel for Special Matters, Department of Commerce, to Chairman Christopher Cox and Ranking Member Norm Dicks, December 14, 1998.
- "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- 117 Ibid.
- 118 Ibid.
- 119 Ibid.
- 120 Ibid.

196



- 121 Ibid.
- 122 Ibid.
- 123 Ibid.
- 124 "Type Certification Data Sheet No. E6WE," Federal Aviation Administration, March 23, 1988.
- "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- 126 Ibid.
- 127 The revised Export Administration Regulations are presented in *Export Administration Regulations*,
 Department of Commerce, Bureau of Export Administration, 1991, sections 9A01 and 9E03. FADECs are
 described in Interview of Bruce C. Webb, December 2, 1998; and *The Militarily Critical Technologies List.*Part I: Weapons Systems Technologies, Department of Defense, June 1996, sec.1.
- 128 Interview of Bruce C. Webb, December 2, 1998.
- 129 "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- 130 Ibid.
- 131 Ibid.
- 132 Ibid.
- 133 Commerce Form Letter to Allied Signal from Commerce Licensing Officer E.G. Christiansen, Subject: Advice on Amendment Request Returned Without Action, November 25, 1991; "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVLD130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- "Issue Paper on Garrett Engine Sale to PRC," Attachment to "Export of Garrett Engines to the PRC," Memorandum from Peter M. Sullivan, Acting Deputy Under Secretary of Defense for Technology Security Policy, to Deputy Secretary of Defense, December 29, 1992.
- "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- 136 Interview of Bruce C. Webb, December 2, 1998.
- 137 For the request for records, see letter from Chairman Christopher Cox and Ranking Member Norm Dicks to William M. Daley, Secretary of Commerce, November 20, 1998. For Commerce's response, see letter from



- John F. Sopko, Chief Counsel for Special Matters, Department of Commerce, to Chairman Christopher Cox and Ranking Member Norm Dicks, December 14, 1998.
- 138 For the request for records, see letter from Chairman Christopher Cox and Ranking Member Norm Dicks to William M. Daley, Secretary of Commerce, November 20, 1998.
- 139 Interview of Peter Leitner, November 24, 1998.
- "Issue Paper on Garrett Engine Sale to PRC," Attachment to "Export of Garrett Engines to the PRC," Memorandum from Peter M. Sullivan, Acting Deputy Under Secretary of Defense for Technology Security Policy, to Deputy Secretary of Defense, December 29, 1992.
- 141 "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- "Issue Paper on Garrett Engine Sale to PRC," Attachment to "Export of Garrett Engines to the PRC" Memorandum from Peter M. Sullivan, Acting Deputy Under Secretary of Defense for Technology Security Policy, to Deputy Secretary of Defense, December 29, 1992; and "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- "Report to the Congress: Imposition of Foreign Policy Export Controls Under the Enhanced Proliferation Control Initiative," Department of Commerce, Bureau of Export Administration, February 1991.
- 144 "Imposition and Expansion of Foreign Policy Controls," Department of Commerce, Bureau of Export Administration, August 15, 1991.
- 145 Interview of Iain S. Baird, November 17, 1998.
- 146 See letter from John F. Sopko, Chief Counsel for Special Matters, Department of Commerce, to Chairman Christopher Cox and Ranking Member Norm Dicks, December 14, 1998.
- 147 Memorandum from Defense Intelligence Agency, 1992.
- 148 "WP-11 Engine Information," James Clauson, Jane's Information Group, Alexandria, Virginia, June 26, 1996.
- 149 Memorandum to Ken Weiss, Arms Control; and Disarmament Agency, 1993; and Defense Intelligence Agency.
- 150 F. Michael Maloof, Director, Technology Security Operations, DTSA, to U.S. Department of Commerce, August 11, 1992.
- 151 Interview of Peter Leitner, November 24, 1998. See also letter from F. Michael Maloof, Director, Technology Security Operations, DTSA, to U.S. Department of Commerce, August 11, 1992.
- 152 "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to



- the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- 153 See "Issue Paper on Garrett Engine Sale to PRC," Attachment to "Export of Garrett Engines to the PRC," Memorandum from Peter Sullivan, Acting Deputy Under Secretary of Defense for Technology Security Policy, to Deputy Secretary of Defense, December 29, 1992. See also "Garrett TFE-731-2A," Memorandum from M. Agnello, Senior Engineer, Cont4rols & Integrated Systems, Naval Air Warfare Center, to Charles H. Craig, Senior Engineer, Technical Directorate, DTSA/OSD, November 30, 1993; and "Engineering Analysis and Technical Policy Recommendations of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- 155 Ibid.
- 156 Ibid.
- 157 "China Shops: Fact from Fiction," Fact sheet attached to "The China Shop Fact Sheet," Memorandum to Mark Kron from Iain S. Baird, Deputy Assistant Secretary for Export Administration, Department of Commerce, February 26, 1995.
- "Gas Turbine Engines," *Aviation Week & Space Technology*, January 12, 1998; and "AlliedSignal TFE731," *Jane's All the World's Aircraft 1995-96*, Jane's Information Group, 1995.
- 159 "Engineering Analysis and Technical Policy Recommendation of General Exception Status in CoCom of DOC IVL D130990," Memorandum from Clarence M. Griffin, Director, DTSA Technology Directorate, to the Acting Deputy Undersecretary of Defense (Trade Security Policy) and DTSA Director, December 21, 1992.
- 160 Letter from Martha Harris, Deputy Assistant Secretary for Export Controls, Bureau of Political Military Affairs, Department of State, to Mitchel B. Wallerstein, Deputy Assistant Secretary of Defense, Counterproliferation Policy, April 1, 1994.
- 161 Interview of Peter Leitner, November 24, 1998.
- 162 Interview of Iain S. Baird, November 17, 1998.
- 163 Interview of Bruce C. Webb, December 2, 1998.
- 164 For the request for records, see letter from Chairman Christopher Cox and Ranking Member Norm Dicks to William M. Daley, Secretary of Commerce, November 20, 1998. For Commerce's response, see letter from John F. Sopko, Chief Counsel for Special Matters, Department of Commerce, to Chairman Christopher Cox and Ranking Member Norm Dicks, December 14, 1998.
- 165 "Export of Garrett Engines to the PRC," Memorandum from Peter M. Sullivan, Acting Deputy Under Secretary of Defense for Technology Security Policy, to Deputy Secretary of Defense, December 29, 1992.



- 166 Letter from Mitchel B. Wallerstein, Deputy Assistant Secretary of Defense, Counterproliferation Policy, to Martha Harris, Deputy Assistant Secretary for Export Controls, Bureau of Political Military Affairs, Department of State, March 21, 1994.
- 167 Interview of Mitchel B. Wallerstein, November 25, 1998.
- 168 Letter from Martha Harris, Deputy Assistant Secretary for Export Controls, Bureau of Political Military Affairs, Department of State, to Mitchel B. Wallerstein, Deputy Assistant Secretary of Defense, Counterproliferation Policy, April 1, 1994.
- 169 "OCM 93-271/D184525—Allied Signal Aerospace Co.—Eighteen Garrett Engines," Meeting record for the Operating Committee on Export Policy, August 19, 1993.
- 170 "Allied Signal Ends Plans to Coproduce Engines in China," Eduardo Lachica, *The Wall Street Journal*, October 27, 1995.
- 171 Ibid.
- 172 "China Aviation Project in Doubt," South China Morning Post, May 15, 1996.
- 173 US Technology Transfers to the People's Republic of China, Kathleen Walsh, DFI International, Washington, D.C., December 1997.
- 174 China's Aerospace Industry, Jane's Information Group, 1997.
- 175 United Technologies Corporation's Responses to Written Interrogatories, November 16, 1998.
- 176 Ibid.
- 177 United Technologies Corporation's Responses to Written Interrogatories, November 16, 1998.
- 178 "Pakistan says it is Studying Errant U.S. Missile," Kamran Khan, *The Washington Post*, August 28, 1998.
- 179 National Academy of Engineering, The Competitive Status of the U. S. Machine Tool Industry, National Academy Press, Washington, D. C., 1983.
- 180 S. Kalpakjian, *Manufacturing Engineering and Technology, Third Edition*, Addison Wesley Publishing Company, 1995.
- 181 Ibid.
- 182 P. M. Shanahan, *Large Scale Systems Integration*, Frontiers of Engineering, National Academy Press, Washington, D. C., 1996.
- 183 The Economist, Factory of the Future, May 20, 1987.
- 184 M.E. Merchant, Intelligent Manufacturing-Yesterday, Today, Tomorrow, Unpublished Paper, 1998.
- 185 Machinery's Handbook, 25th Edition, Industrial Press Inc.
- 186 Department of Defense, Militarily Critical Technologies List, Section 10.
- 187 S. Kalpakjian, Loc. Cit.
- 188 Chinese Plant Survey-Committee Files.





- 189 R. H. Todd, D.K. Allen, and L.Alting, *Manufacturing Processes Reference Guide*, Industrial Press Inc., N. Y., 1994.
- 190 S. Kalpakjian, Loc. Cit
- 191 Ibid.
- 192 Ibid.
- 193 R. H. Todd, D. K. Allen, and L. Alting, Loc. Cit.
- 194 Ibid.
- 195 Ibid.
- 196 Ibid.
- 197 S. Kalpakjian, Loc. Cit.
- 198 Proceedings of the International Conference on Precision Engineering and the 6th Sino-Japan Joint Seminar on Ultraprecision Technology on September 23-25, 1996 in Shenyang, China, Northeastern University Press.
- 199 L. F. Vesteen and R. N. Hadcock, *Composite Chronicles: A Study of Lessons Learned in Development, Production, and Service of Composite Structures*, NASA Contractor Report 4620, November, 1994.
- 200 B. C. Hoskins and A. A. Baker, *Composite Materials for Aircraft Structures*, American Institute of Aeronautics and Astronautics Inc., 1986, Vol. I.
- 201 M.M. Schwartz, Composite Materials, Prentice Hall, Upper Saddle River, N. J., 1997, Vol.II.
- 202 B.R. Rich and L. Janos, *Skunk Works*, Little Brown Company, Boston, 1994.
- 203 B. C. Hoskins and A. A. Baker, Loc. Cit.
- 204 M. M. Schwartz, Loc. Cit.
- 205 S. A. Resetar, J. C. Rogers, and R. W. Hess, Advanced Airframe Structural Materials, Rand Report 4016- A
- 206 P. Donguy and J. Broca, *High Temperature Composite Materials for Rocket Propulsion* NATO AGARD CP-449, March 1989.
- 207 D. W. Petrasek and J. R. Stephens, Fiber Reinforced Superalloys for Rocket Engines, NATO AGARD CP- 449, March 1989.
- 208 Peter Leitner Paper.
- 209 "Understanding Stealth," John Shaeffer.
- 210 Ibid.
- 211 Ibid.
- 212 Ibid.
- 213 Ibid.

- 214 Ibid.
- 215 Ibid.
- 216 Ib id.
- 217 Ibid.
- 218 Ibid.
- 219 Ibid.
- 220 Ibid.
- 221 Ibid.
- 222 Letter from the Secretary of Defense (Cheney) to the Secretary of Commerce (Mosbacher), April 21, 1989.
- 223 Department of Defense Militarily Critical Technology List.
- 224 Department of Defense Stealth Study, Ref: 0149467.
- 225 Department of Defense Stealth Study, Ref: 0149454.
- 226 FORDTIS Export License Printout, Ref: 0148821.
- 227 FORDTIS Export License Printout, Ref: 0148826.
- 228 FORDTIS Export License Printout, Ref: 0148821.
- 229 Department of Defense Stealth Study, Ref: 0149455.
- 230 Hexcel Briefing to DFTA, November 15, 1994.
- 231 Ibid.
- 232 FORDTIS Export License Printout, Ref: 0148812.
- 233 FORDTIS Export License Printout, Ref: 0148815.
- 234 Hexcel Briefing to DFTA, November 15, 1994.
- 235 Ibid..
- 236 Ibid.
- 237 Ibid.
- 238 Department of Defense Stealth Study, Ref: 0149453.
- 239 Ibid.
- 240 Sikorsky S-92 Documents.
- 241 Ibid.
- 242 Ibid.

