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Aviation and Aerospace Law

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Aviation and Aerospace Law

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I. Aviation Law Developments

The United States and U.S. air carriers celebrated two important events in 1998: (1) Memorial Day was the busiest day in aviation history;¹ and (2) nobody died in an accident involving a scheduled U.S. commercial flight anywhere in the world.² The U.S. record was overshadowed by accidents involving carriers registered in other countries, most notably the loss of Swissair Flight 111 on September 2, 1998, near Peggy's Cove, Nova Scotia.³ That tragedy cost 229 people their lives and is now the subject of a federal lawsuit filed in the U.S. District Court for the Southern District of New York.⁴ Lawyers representing Jake LaMotta filed that suit against Swissair, Delta Airlines, McDonnell Douglas, and Boeing Corp. seeking \$50 million in compensatory damages and another \$75 million in punitive damages for the death of his son, Joseph, who died in that crash.⁵ Swissair was one of 109 carriers that signed an agreement in 1998 raising damage award limitations imposed by the Warsaw Convention. Under the new agreement, the LaMotta family is entitled to receive approximately \$136,000 from Swissair

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1. See *Air Travelers Expected to Set Record Friday*, COLO. SPRINGS GAZETTE TELEGRAPH, May 21, 1998, at A15.

2. See *Airlines Mark Year of Safe Flights*, COLO. SPRINGS GAZETTE TELEGRAPH, Jan. 7, 1999, at A4.

3. See David W. Chen, *Plane from J.F.K. Crashes Off Canada*, N.Y. TIMES, Sept. 3, 1998, at A1; *Swissair, MD-11 Jet Have Excellent Safety Records*, COLO. SPRINGS GAZETTE TELEGRAPH, Sept. 4, 1998, at A3.

4. See *Lawsuit Alleged Wiring at Fault in Swissair Crash*, COLO. SPRINGS GAZETTE TELEGRAPH, Sept. 10, 1998, at A10.

5. See *Boxing Legend Jack LaMotta Files Suit in Swissair Crash*, CHI. TRIB., Sept. 9, 1998. Delta was sued because it has an arrangement with Swissair that allows it to sell seats under its own name. Boeing was sued because it acquired McDonnell Douglas, the company that manufactured the MD-11. See *id.*

without the requirement to show fault, but can sue for damages in excess of that amount using traditional tort theories. In his lawsuit, Jake LaMotta alleges that Swissair and the other defendants ignored Federal Aviation Administration warnings about wiring defects that could cause smoke or fires in the cockpit.⁶ The flight data recorder was of limited use in determining the cause of this accident because it quit six minutes before the plane impacted the water.⁷ This prompted some authorities to call for the use of power sources other than those that operate most aircraft electrical systems to operate flight and data recorders.⁸ Before the accident, Boeing had decided to end production of the MD-11 jet.⁹

Passenger safety continues to be a high priority for the airlines and the FAA but there are still important problems to solve. After United Airlines was sued in 1997 by the widow of a passenger who died of a heart attack,¹⁰ United, American, and some other airlines added defibrillators and other equipment to the medical kits on board their aircraft. This equipment has been used six times on American flights alone since it was installed in 1997 and is credited with saving the lives of three of those six passengers.¹¹

While access to lifesaving medical care is arguably improving, passenger misconduct is also increasing. Because the airlines use different criteria for reporting passenger misconduct,¹² available figures are suspect. However, the FAA reports that it "pursued" 142 cases of passenger interference occurring in U.S. airspace in 1998, down from 196 cases in 1997.¹³ The FAA, the unions, and the airlines support tougher enforcement,¹⁴ and some airlines have even limited the size and number of carry-on items because this seems to be a major cause of friction between passengers and crew.¹⁵ Britain, Australia, Canada, and the United States have enacted laws that permit prosecution of any passenger who commits misconduct on a flag aircraft or on a non-flagged aircraft that lands first on its territory.¹⁶ Other countries prosecute only when the misconduct occurs on board aircraft that carry their flag, and Britain is leading the effort to persuade these countries to adopt the same approach as the U.K., Australia, Canada, and the United States.¹⁷ In one interesting case, a passenger was sentenced to eight months in jail for

6. *See id.*

7. *See DNA Testing Aids in Completing Identification of Swissair Victims*, COLO. SPRINGS GAZETTE TELEGRAPH, Dec. 20, 1998, at A25.

8. *See Flight Officials May Advise Separate Power For Black Boxes*, COLO. SPRINGS GAZETTE TELEGRAPH, Sept. 19, 1998, at A15.

9. *See Boeing Will Stop Production of Jet*, COLO. SPRINGS GAZETTE TELEGRAPH, June 4, 1998, at BUS1.

10. *See Aaron Schildhaus et al., Aviation and Aerospace Law*, 32 INT'L LAW. 437, 442 n.40 (1998).

11. *See Passengers Owe Lives to In-flight Treatment*, COLO. SPRINGS GAZETTE TELEGRAPH, Nov. 22, 1998, at A12. *See also British Airways Will Add Defibrillators*, COLO. SPRINGS GAZETTE TELEGRAPH, Jan. 8, 1999, at A16.

12. *See Laurence Zuckerman, Airlines Outraged by Air Rage*, HERALD TRIB. INT'L, Oct. 7, 1998, at 3. Zuckerman notes that United Airlines carried 84 million passengers in 1997 but reported only 40 incidents of violent misconduct during the first eight months of 1998. In contrast, American Airlines, the second largest U.S. carrier, reported 921 incidents of misconduct in 1997. *See id.*

13. *Britain Leading Move to Deal with "Air Rage"*, COLO. SPRINGS GAZETTE TELEGRAPH, Feb. 6, 1999, at A18 [hereinafter *Air Rage*]. Peter Reiss, Safety Committee Chairman for the International Federation of Air Line Pilots' Associations, is quoted in this article as saying that the "number of incidents on airliners has almost quadrupled in the past three years." *Id.*

14. *See FAA, Unions, Airlines Urge Prosecution of Nuisances*, COLO. SPRINGS GAZETTE TELEGRAPH, Jun. 12, 1998, at A4.

15. *See Richard Williamson, United Bag Plan Carries On*, DENV. ROCKY MOUNTAIN NEWS, Nov. 13, 1998, at 1B.

16. *See Air Rage*, *supra* note 13.

17. *See id.*

carrying a flare gun on board a U.S. Airways flight in 1997 in spite of the fact that he subsequently shot himself with a similar gun and introduced the videotape of that act to show the judge that the gun was harmless.¹⁸ In another case, Abdul Hakim Murad was convicted in federal court of killing a Japanese passenger when he bombed a Philippine Airlines jet in 1994 and of plotting to bomb another eleven U.S. airlines in 1995. He received a life sentence without possibility of parole in addition to a sixty-year sentence.¹⁹

During 1998, the FAA issued a number of significant inspection orders and adopted new procedures to promote safety. At the end of the investigation to determine the reason TWA Flight 800 exploded and crashed in July of 1997, the National Transportation Safety Board (NTSB) asked the FAA to "require separation or rerouting of fuel-monitoring wires away from bundles of wires that carry electrical charges" and to "require the installation of surge-protection systems to prevent electrical jolts from reaching fuel tanks."²⁰ At about the same time, Pratt & Whitney voluntarily removed eight jets' engines from service and recalled thousands of spare parts after it discovered that one of the machines used to strip grease and other material from turbine blades had actually caused microscopic cracks in those blades.²¹ In early May, the FAA issued an emergency order that grounded older Boeing 737 aircraft (more than 50,000 hours flight time) until wires in piping that ran through the wing and center fuel tanks were inspected.²² The order was issued after inspection of a Continental Airlines 737 revealed a short in the wiring system that had burned holes in the fuel tank.²³ Two months later, the FAA issued a telegraphic airworthiness directive that required inspection of newer 737 aircraft after two engine shutdowns were required in flight due to broken parts.²⁴ This was followed in November by an announcement that Boeing and the FAA had found cracks in some hydraulic valves that Boeing had purchased and was installing on its 737 aircraft to prevent malfunctions of the rear rudder.²⁵ A draft report that has been written by NTSB inspectors and still must be approved by the NTSB concludes that rudder failure is the most likely cause of two 737 crashes: the first when an aircraft was turning for final approach into Colorado Springs; the second outside Pittsburgh in 1994.²⁶ These incidents and the subsequent loss of Swissair Flight 111 prompted the FAA to issue directives that increase the inspection regime for older aircraft.²⁷

18. See *Passenger with Flare Gun Sentenced to Prison*, COLO. SPRINGS GAZETTE TELEGRAPH, May 17, 1998, at A8.

19. See *Pilot Sentenced for Airline Bombings*, COLO. SPRINGS GAZETTE TELEGRAPH, May 16, 1998, at A10.

20. *NTSB Urges Inspections of 747's Fuel Systems*, COLO. SPRINGS GAZETTE TELEGRAPH, Apr. 8, 1998, at A1.

21. See *Jet Engines Pulled After Tiny Cracks Found in Fan Blades*, COLO. SPRINGS GAZETTE TELEGRAPH, Apr. 8, 1998, at A16.

22. See *Fuel Tank Wires Prompt Round of Jet Inspections*, COLO. SPRINGS GAZETTE TELEGRAPH, May 8, 1998, at A9 [hereinafter *Fuel Tank Wires*]; *FAA Orders Older 737s Grounded*, COLO. SPRINGS GAZETTE TELEGRAPH, May 11, 1998, at A1; *Worn Wiring Found on Half of 737s Inspected So Far*, COLO. SPRINGS GAZETTE TELEGRAPH, May 12, 1998, at A1.

23. See *Fuel Tank Wires*, *supra* note 22; Matthew L. Wald, *Airlines Ordered to Check a Further Set of Wires in 737s*, N.Y. TIMES, May 15, 1998, at A18.

24. See *Engine Shutdowns Spur Immediate Inspections*, COLO. SPRINGS GAZETTE TELEGRAPH, July 3, 1998, at A11.

25. See *Cracks Found in Some 737 Rudder Replacement Parts*, COLO. SPRINGS GAZETTE TELEGRAPH, Nov. 15, 1998, at A9.

26. See *Draft Report Blames Rudder for 737 Crash*, COLO. SPRINGS GAZETTE TELEGRAPH, Mar. 12, 1999, at A3.

27. See *FAA Will Boost Inspection of Older Planes*, COLO. SPRINGS GAZETTE TELEGRAPH, Sept. 15, 1998, at A4.

Transportation of hazardous cargo, both commercially and by private passengers, continues to be an issue.²⁸ The FAA estimates that between 25,000 and 50,000 hazardous shipments are moved by aircraft every day. In 1997, the FAA investigated 1,506 suspected violations.²⁹ During the first three months of 1998, the FAA levied \$1.2 million in fines, more than half of the record levy of \$2.2 million it imposed for all of 1997.³⁰ In May, the agency levied a record fine of \$2.25 million on Sabretech Corp., the company responsible for shipping the oxygen generators that caused the loss of ValuJet Flight 592 on May 11, 1996.³¹ The fine paid by Sabretech was eclipsed the following day when Arrow Air pleaded guilty to selling parts that were not FAA-approved and falsifying records, resulting in a fine of \$5 million.³²

Invariably, the FAA is criticized for some of its practices and procedures and that happened in 1998. In March, air traffic controllers questioned a decision made jointly by the FAA and the National Weather Service to remove weather forecasters from up to 248 regional airports.³³ Pilots using these airports will receive weather data from the Automated Surface Observing System (ASOS); however, Wade Stanfield, National Air Traffic Controllers National Safety Committee Chairman, said that the system "makes drastic mistakes and errors."³⁴ The FAA and the National Weather Service will continue to use forecasters and the ASOS at larger airports. Although 1998 was the safest year ever for U.S. carriers, reliability of the air traffic control system remains a hot topic. In February, the General Accounting Office (GAO) issued a report that analyzed the FAA's initiative to upgrade computer systems and otherwise improve safety, concluding that "the FAA has experienced considerable difficulty in delivering systems with promised cost and scheduled parameters."³⁵ As of June 1998, in-flight controller mistakes had risen by nineteen percent and ground errors by forty-nine percent, prompting an FAA order that required controllers to receive refresher training.³⁶ While the FAA attempts to bring new equipment on board, it faces another significant problem: the impending retirement of experienced air traffic controllers who were hired in 1981 after President Reagan fired striking controllers. In June, the International Federation of Air Line Pilots' Associations listed 150 airports that have serious safety problems.³⁷ Although most airports listed are outside the United States, some U.S. airports were on the list. FAA procedures for certifying aircraft were also challenged in a lawsuit filed by Ralph Nader's Aviation Consumer Action Project.³⁸ The lawsuit

28. See *Air Cargo Violations Still Endanger Passengers*, COLO. SPRINGS GAZETTE TELEGRAPH, Apr. 27, 1998, at A8 [hereinafter *Air Cargo Violations*]; and *Some Goods Won't Fly, Airlines Say*, COLO. SPRINGS GAZETTE TELEGRAPH, Jan. 18, 1999, at A9.

29. See *Air Cargo Violations*, supra note 28.

30. See *FAA Violations*, supra note 28.

31. See *FAA Fines Oxygen Generator Company \$2.25 Million*, COLO. SPRINGS GAZETTE TELEGRAPH, May 1, 1998, at A11.

32. See *Airline Fined \$5 Million over Parts*, COLO. SPRINGS GAZETTE TELEGRAPH, May 2, 1998, at A6.

33. See *Plan Eliminating Weather Forecasters Hits Turbulence from Air Controllers*, COLO. SPRINGS GAZETTE TELEGRAPH, Mar. 15, 1998, at A7.

34. *Id.*

35. *Air Traffic Overwhelms Controllers, GAO Says*, COLO. SPRINGS GAZETTE TELEGRAPH, June 6, 1998, at A4 [hereinafter *Air Traffic*]. See also Matthew L. Wald, *Union Says Air Control System Will Be Unsafe*, N.Y. TIMES, May 22, 1998, at A8; Jill Smolowe, *Out-of-Control Tower*, TIME, Feb. 19, 1996, at 52; and Matthew L. Wald, *Ambitious Update of Air Navigation Becomes a Fiasco*, N.Y. TIMES, Jan. 29, 1996, at A1.

36. See *Air Traffic*, supra note 35.

37. See *Pilots' Group Blacklists Airports with Safety Problems*, COLO. SPRINGS GAZETTE TELEGRAPH, June 8, 1998, at A14.

38. See *Nader Group Suing the FAA Over Safety of New Jumbo Jet*, COLO. SPRINGS GAZETTE TELEGRAPH, July 4, 1998, at BUS2.

alleged that the FAA only conducted computer simulations to determine if the Boeing 777-300 can be evacuated safely, when actual tests are necessary. The 777-300 is thirty-three feet longer than the 777-200 and carries an additional 110 passengers.³⁹ The FAA was also criticized in August for failing to stop FAA employees from misusing its Liaison and Familiarization Training (FAM) program.⁴⁰ In a memo he signed, Department of Transportation Inspector General Kenneth Mead concluded that some FAA employees were using the FAM program as a pretense "to get free travel to resort, vacation and personal leave destinations of their choice."⁴¹ Under the FAM program, air traffic controllers and other FAA employees ride in the cockpits of commercial airlines to become familiar with operating procedures. On a positive note, the FAA moved forward to implement its Flight Operational Quality Assurance (FOQA) program.⁴² This program reflects a compromise the FAA reached with major air carriers to improve safety while protecting air crew members. Under FOQA, carriers will provide the FAA with flight record data for analysis to detect dangerous practices or problems with aircraft performance. The FAA will not rank carriers on the basis of their safety records,⁴³ and pilots who provide data will not be subject to FAA discipline unless their conduct was intentional, criminal, or caused an accident.⁴⁴ Finally, the FAA sustained a challenge to its "Age 60 Rule," the regulation that forbids anyone over age sixty from flying as pilot in command or as first officer on any commercial aircraft with more than nine seats.⁴⁵ Although the FAA standard is five years earlier than the European Union's standard, and European pilots are allowed to fly into U.S. airports under International Civil Aviation Organization rules until they reach age sixty-five, the Professional Pilots Federation could not convince the U.S. Court of Appeals for the Federal Circuit or the U.S. Supreme Court that the FAA rule constituted illegal discrimination. The Supreme Court ruled that the FAA regulation is justified because it protects passenger safety.⁴⁶

The FAA was not the only federal agency that became involved in issues related to aviation law. In August, the Department of Transportation (DOT) issued a rule requiring airlines to reserve at least three rows where no peanuts would be served if at least one passenger allergic to peanuts made such a request.⁴⁷ DOT justified its rule using a 1986 statute that guarantees disabled persons access to commercial flights.⁴⁸ In October, Congress included a provision in a spending bill that negated the DOT rule.⁴⁹ In May, newspapers reported that the NTSB was taking almost twice as long to investigate accidents as it took only five years ago.⁵⁰ The NTSB

39. See *id.*

40. See *FAA Criticized for Allowing Free Employee Flights*, COLO. SPRINGS GAZETTE TELEGRAPH, Aug. 5, 1998, at A3.

41. *Id.*

42. See *New FAA Policy Will Use Flight Data to Spot Trends*, COLO. SPRINGS GAZETTE TELEGRAPH, Dec. 5, 1998, at A14 [hereinafter *New FAA Policy*].

43. See *FAA Unable and Unwilling to Rank Airlines on Safety*, COLO. SPRINGS GAZETTE TELEGRAPH, Nov. 22, 1998, at A4.

44. See *New FAA Policy*, *supra* note 42.

45. See Michael Sweeny, *In a Split Decision, Court Upholds FAA's Controversial Age 60 Rule*, available at <<http://www1.drive.net/evird...sep19-1997/Agc-60-Rule.html>> (visited Feb. 9, 1999).

46. See *High Court Rejects Pilots' Age Challenge*, COLO. SPRINGS GAZETTE TELEGRAPH, May 19, 1998, at A4. For a discussion of how this rule affects pilots, see Laurence Zuckerman, *Pilots Press to End Forced Retirements at 60*, N.Y. TIMES, May 17, 1998, at A16.

47. See *Peanut Farmers Knock Air Rules*, COLO. SPRINGS GAZETTE TELEGRAPH, Sept. 7, 1998, at B9.

48. See *id.*

49. See *Bill Would Crunch Peanut-free Zones for U.S. Air Travelers*, COLO. SPRINGS GAZETTE TELEGRAPH, Oct. 21, 1998, at A7.

50. See *Delays in Determining Causes of Air Crashes Raises Safety Fears*, COLO. SPRINGS GAZETTE TELEGRAPH, May 3, 1998, at A4.

cited its detailed investigation of TWA Flight 800 and U.S. Air Flight 427—the Boeing 737 that crashed in 1994 while on final approach to Pittsburgh International Airport—as the reason for this increase.

Passenger issues were also in the news in 1998. Bankruptcies, mergers, and airline alliances reduced competition and passengers started complaining about the high cost of tickets.⁵¹ As a result, the Clinton administration agreed to review recent alliances to determine if the airlines are illegally stifling competition.⁵² Northwest Airlines and American Airlines pilots did not help airline-passenger relations when they went on strike in August 1998⁵³ and in February 1999, respectively, causing cancellation of thousands of flights. Northwest pilots asked for a fourteen percent raise over three years but settled for twelve percent over four years, \$57 million for lost wages, profit sharing, stock options, and phased elimination of the two-tier system that paid them less during the first five years of service.⁵⁴ The strike by American occurred after the airline absorbed Reno Air and AMR Corp. refused to take a position on how much Reno Air pilots would be paid.⁵⁵ Before the merger, Reno pilots made about half the \$150,000 average annual salary an American pilot makes. At the time of this writing, America West was trying to avert a strike by its flight attendants and was viewed as a takeover target.⁵⁶

The weather also played havoc with airline-passenger relations in 1998. Major storms in Detroit and other cities in the north and northeast caused cancellation of hundreds of flights and, in some cases, passengers were stranded in airports or left sitting inside aircraft on the tarmac while airport officials struggled to clear gates. These experiences led passengers to lobby for new rules that will impose stiffer penalties on airlines that overbook, unjustifiably cancel flights, or lose luggage. At a news conference he held on March 11, 1999, Vice President Al Gore outlined proposed regulations and legislation that would require airlines to disclose their policies on flight cancellations and delays, file monthly reports detailing passenger complaints, disclose code sharing arrangements, and increase compensation paid to passengers who are bumped from flights or lose luggage.⁵⁷ The airlines have agreed in principle to address these issues but argue that new regulations or legislation will require them to hire additional staff, thus raising the cost of tickets.⁵⁸ On March 12, 1999, the Business Travel Coalition (BTC) sent an open letter to the chief executive officers of the nation's major airlines urging them to address passenger complaints.⁵⁹ BTC representatives who testified at House Transportation Committee hearings held on March 10 cited lack of competition among major airlines as the

51. See, e.g., Laurence Zuckerman, *Business Air Fares Climb, Prompting Calls for Remedy*, N.Y. TIMES, Jan. 11, 1998, at 1; and David Field, *Low-fare Airlines Lost Altitude vs. Bigger Rivals*, USA TODAY, Feb. 10, 1998, at M/L1.

52. See *Administration Wary of Airlines Alliances*, COLO. SPRINGS GAZETTE TELEGRAPH, May 1, 1998, at BUS1.

53. See Laurence Zuckerman, *Transportation Secretary Calls for Meeting in Pilots' Strike*, N.Y. TIMES, Sept. 1, 1998, at A20.

54. See Laurence Zuckerman, *Northwest's Pilots Approve Pact, Ending 2-Week Strike*, N.Y. TIMES, Sept. 13, 1998, at A22.

55. Marcus Kabel, *Pilots Dispute Cuts 20 Pct of AA Flights* (visited Feb. 9, 1999) <<http://money.go.com/MarketNews.html>>.

56. See Roanne Daniels, *Talks Between America West, Attendants Hit Impasse* (visited Feb. 9, 1999) <<http://money.go.com/MarketNews.html>>.

57. See Randall Mikkelsen, *White House Proposes New Air Traveler "Rights," available at* <<http://news.lycos.com/stories/politics>>.

58. See *id.*

59. See *BTC Urges Airlines to Choose Self-Reforms Over Government Intervention; Window of Opportunity Closing Rapidly*, available at <<http://Infoseek.go.com/Content?am>>.

root cause of customer complaints.⁶⁰ Passengers are not the only people complaining. Travel agents complained about a move by United, American, and Delta last November to lower the fee schedule that the airlines pay travel agents for booking international flights. Under the new fee scale, a travel agent's commission will be capped at \$100 or eight percent of the ticket cost, whichever is less.⁶¹ Delta Airlines said it paid over \$1 billion in commissions to travel agents in 1997 and estimated that the new fee schedule would save the company \$40 to 45 million annually.⁶² These complaints are arising at a time when the airlines are increasing ticket prices⁶³ and United Airlines is projecting record profits.

Important developments affecting aviation also occurred overseas in 1998. In March, the consortium of European companies that manufacture the Airbus (France's *Aerospatiale*; Germany's Daimler-Benz Aerospace, Britain's Aerospace PLC, and Spain's *Construcciones Aeronauticas*) said they would explore a merger to create a single European aerospace and defense company.⁶⁴ No timetable was announced, but company representatives said that they want to create a company that can compete more effectively with U.S. aerospace companies in the following areas: design and production of commercial airlines, military transports, satellites, helicopters, missiles, and fighter aircraft.⁶⁵ Government officials applauded the announcement but recognized the challenges that will arise in building a company that addresses the defense needs of all four countries and the economic concerns of the European Union.⁶⁶

Open skies agreements remain an important subject but the United States did not make much progress in opening the skies over the United Kingdom for additional flights by U.S. carriers. British officials refused to renegotiate the Bermuda II agreement concluded in 1977 that allows only two U.S. carriers (United and American) to use Heathrow Airport until the U.S. government approves a proposed alliance between British Airways and American Airlines.⁶⁷ As of June, the U.S. government had negotiated open skies agreements with thirty-one nations.⁶⁸

December 21, 1998, marked the tenth anniversary of the Lockerbie tragedy and, throughout the year, U.S. and British officials worked hard to gain custody of Abdel Basset Ali al-Megrahi and Lamem Khalifa Fhimah, the Libyan nationals accused of planting the bomb that destroyed Pan Am Flight 103. In March, Libya asked the United Nations to lift sanctions that were imposed in 1992 after Libya refused to surrender al-Megrahi and Fhimah for trial outside the country.⁶⁹ The sanctions include a ban on international flights into and out of Libya. Libyan leader Colonel Moammar Gadhafi had originally agreed to surrender al-Megrahi and Fhimah for trial in a country other than Scotland or the United States, but this offer was initially unacceptable to the United States and the United Kingdom.⁷⁰ In July, the U.N. Security Council

60. See *id.*

61. See *Airlines Take Piece of Agents' Profits*, COLO. SPRINGS GAZETTE TELEGRAPH, Nov. 19, 1998, at BUS1.

62. See *id.*

63. See *Fueled by Demand, Major Airlines Hike Prices Once Again*, COLO. SPRINGS GAZETTE TELEGRAPH, Mar. 16, 1999, at BUS1.

64. See *Top European Aircraft Firms Announce Plan to Join Forces*, COLO. SPRINGS GAZETTE TELEGRAPH, Mar. 28, 1998, at BUS1.

65. See *id.*

66. See *id.*

67. See *"Closed" Skies over London Inflation Airline Ticket Prices*, COLO. SPRINGS GAZETTE TELEGRAPH, June 3, 1998, at BUS1.

68. See *id.*

69. See *Libya, Allies Petition for Cessation of U.N. Sanctions*, COLO. SPRINGS GAZETTE TELEGRAPH, Mar. 20, 1998, at A20.

70. See *id.*

voted to extend the sanctions it imposed in 1992.⁷¹ After that vote, Colonel Gadhafi agreed to surrender al-Megrahi and Fhimah to Dutch authorities who offered to convene a trial conducted by judges from Scotland in The Netherlands.⁷² Although this decision was ratified by Libya's General People's Congress,⁷³ and both U.N. Secretary General Kofi Annan and South African President Nelson Mandela visited Libya in late 1998 and early 1999 to discuss details for transferring al-Megrahi and Fhimah to Dutch authorities,⁷⁴ Gadhafi has not kept his promise. On February 26, 1999, the United States and the United Kingdom established a March 26, 1999 deadline for transfer.⁷⁵

II. Space Law Developments

The year 1998 was marked by important triumphs and some failures for U.S. and international aerospace interests. In the United States, the Commercial Space Launch Act of 1998⁷⁶ was enacted in October. In its most important provision, this law requires the National Aeronautics and Space Administration (NASA) Administrator to "provide for an orderly transition from the Federal operation, or Federal management of contracted operation of space transportation systems to the Federal purchase of commercial space transportation services for all nonemergency space transportation requirements for transportation to and from Earth orbit, including human, cargo, and mixed payloads."⁷⁷ In essence, this means that some Space Shuttle operations will be privatized.

[T]he act moved society a step closer to placing passengers in space, by changing the policies for licensing reentry vehicles. Private companies can now return space vehicles to Earth, a privilege previously restricted to the government. This change opens the path to increased private sector development of activities such as zero-gravity manufacturing and space tourism, activities that would use reentry vehicles to move passengers.⁷⁸

The act also promotes commercial use of the International Space Station,⁷⁹ use of the U.S. Global Positioning System by "encouraging" the president to make it available "on a continuous worldwide basis free of director user fees" while entering international agreements that make GPS the international standard and eliminate foreign barriers to its use,⁸⁰ requires NASA "to the extent possible" to purchase space science data and earth science data (including space based and airborne Earth remote sensing data) from commercial sources and to treat that data as a commercial item under U.S. acquisition laws,⁸¹ restricts the use of excess intercontinental ballistic missiles,⁸² and requires certain studies, reports, and regulations, including rules for obtaining

71. See *U.N. Extends Libya Sanctions*, COLO. SPRINGS GAZETTE TELEGRAPH, July 3, 1998, at A17.

72. See *U.S., Britain Seek Pan Am 103 Trial in the Netherlands*, COLO. SPRINGS GAZETTE TELEGRAPH, Aug. 25, 1998, at A8; and *Libya Offers Lockerbie Suspects—In Return for Sanctions Relief*, COLO. SPRINGS GAZETTE TELEGRAPH, Aug. 27, 1998, at A5.

73. See *Libya Moves to Allow Trial in Bombing*, COLO. SPRINGS GAZETTE TELEGRAPH, Dec. 16, 1998, at A21.

74. See *No Agreement Made on Lockerbie Trial*, COLO. SPRINGS GAZETTE TELEGRAPH, Dec. 6, 1998, at A17; *Mandela Reveals Plan to Acquire Pan Am Suspects*, COLO. SPRINGS GAZETTE TELEGRAPH, Jan. 8, 1999, at A13.

75. See *U.S., Britain Give Libya 30 Days to Turn over Lockerbie Suspects*, COLO. SPRINGS GAZETTE TELEGRAPH, Feb. 27, 1999, at A17.

76. See Commercial Space Launch Act of 1998, Pub. L. No. 105-303 § 102(a)(5), 112 Stat. 2847 (1998).

77. *Id.* § 204.

78. Tim Howard, *Society and Aerospace Technology*, AEROSPACE AM., Dec. 1998, at 41.

79. See Commercial Space Launch Act § 101.

80. *Id.* § 104.

81. *Id.* §§ 105, 107.

82. See *id.* § 205.

a license to use federal facilities to operate a reentry vehicle.⁸³ To achieve its purpose, the act amends existing law, most notably, the National Aeronautics and Space Administration Authorization Act,⁸⁴ the Surface Transportation Revenue Act of 1998,⁸⁵ and the Launch Services Purchase Act of 1990.⁸⁶

Space science also led the list of interesting stories. Working independently, scientists at the University of Washington and at the Lawrence Berkeley National Laboratory answered a question astronomers have long debated: by measuring light from distant stars, they concluded that the universe is expanding and will continue to expand forever at a constantly accelerating rate.⁸⁷ The editors of *Science* magazine identified this work as the most important scientific discovery in 1998.⁸⁸

Two other stories captivated people interested in space exploration: Senator John Glenn's return to space⁸⁹ and the successful launch of the first International Space Station (ISS) components. NASA was criticized by some when it announced that Senator Glenn had been invited to become a Space Shuttle crew member. The mission in November was virtually flawless, however, and most of that criticism died. In late November, NASA achieved a second success when the Russians launched the first ISS module (the U.S.-funded *Zarya*)⁹⁰ and then placed the U.S.-built Unity module in orbit during a Space Shuttle Endeavor mission.⁹¹ Unity and *Zarya* were connected during a series of space walks by U.S. astronauts and a Russian cosmonaut, and the station was left awaiting the addition of a third module in the summer of 1999 and its first crew in early 2000.⁹² The ISS remains NASA's single most expensive initiative. In September, NASA asked Congress to appropriate \$1.2 billion over the next four to five years to support the program.⁹³ Of that amount, \$660 million would be paid to Russia to purchase space vehicles and support.⁹⁴ The ISS will replace Russia's aging Mir Space Station⁹⁵ and it is the first space station the United States has placed in orbit since Skylab, launched in 1973, fell in 1979.

Commercial and military space activities also took center stage in 1998, as a result of notable successes and failures. In May, Motorola Corp. placed the last of sixty-six Iridium satellites in

83. See *id.* § 102, amending 49 U.S.C. § 70120.

84. National Aeronautics and Space Administration Authorization Act § 504, 15 U.S.C. 5803 (West 1999).

85. 49 U.S.C. 701 (West 1999).

86. See Launch Services Purchase Act of 1990, 42 U.S.C. § 2465b, *et seq.*

87. See *Universe's Constant Expansion Called Top Discovery of 1998*, COLO. SPRINGS GAZETTE TELEGRAPH, Dec. 18, 1998, at A10.

88. See *id.*

89. See Jeffrey Kluger, *Victory Lap*, TIME, Nov. 9, 1998, at 72.

90. See *First Part of New Space Station Set to Soar for a Troubled Russia*, COLO. SPRINGS GAZETTE TELEGRAPH, Nov. 20, 1998, at A17.

91. See *Space Station: the Next Frontier*, COLO. SPRINGS GAZETTE TELEGRAPH, Nov. 29, 1998, at A1.

92. See Warren E. Leary, *Wub Space Station Parts Joined, Astronauts Make a Quick Start on Wiring Them Together*, N.Y. TIMES, Dec. 8, 1998, at A14; *Astronauts Deftly Construct Space Station*, COLO. SPRINGS GAZETTE TELEGRAPH, Dec. 8, 1998, at A10; *Space Station Beginning to Take Shape*, COLO. SPRINGS GAZETTE TELEGRAPH, Dec. 11, 1998, at A7; and *Astronauts Reluctantly Close up Shop on Space Station*, COLO. SPRINGS GAZETTE TELEGRAPH, Dec. 12, 1998, at A7.

93. See *NASA Seeks \$1.2 Billion for Space Station*, COLO. SPRINGS GAZETTE TELEGRAPH, Sept. 22, 1998, at A7.

94. See *id.* For a discussion of the problems Russia is having meeting its financial commitments to the ISS program, see *Russians Struggle to Find the Money for Space Station*, COLO. SPRINGS GAZETTE TELEGRAPH, Nov. 21, 1998, at A15.

95. See *Mir Begins Fall to Earth on Its Own*, COLO. SPRINGS GAZETTE TELEGRAPH, June 16, 1998, at A10.

low earth orbit, using Vandenberg Air Force Base as the launch site.⁹⁶ In June, Hughes Global Services became the first company to send a spacecraft to the Moon on a commercial mission when it used the Moon's gravity to boost a communications satellite towards Earth and successfully reposition it into a geostationary orbit.⁹⁷ Finally, and in spite of some dire predictions, the Leonid meteor shower in November did not seriously damage or destroy any of the approximately 600 satellites that orbit the Earth.⁹⁸

These successes were overshadowed, in part, by several notable failures. In May, PanAmSat lost control of a Galaxy IV satellite. As a result, "up to 90 percent of the country's estimated 40-45 million pagers were rendered useless, some radio and television stations lost their feeds and went dead, and many wireless credit card machines, like those used to pay at the pump, wouldn't work."⁹⁹ PanAmSat shifted signals to other satellites but services were not fully restored for about a week. In August, the United States experienced two launch failures. The first occurred on August 12 when an unmanned Air Force Titan rocket exploded forty seconds after liftoff from Cape Canaveral.¹⁰⁰ The second occurred on August 26 when a Boeing Delta III rocket exploded just after one minute into its inaugural flight.¹⁰¹ In September, a Space Systems/Loral lost twelve Global Star satellites when their launch vehicle, a Ukrainian-made Zenit-2, failed approximately five minutes after launch from the Baikonor Cosmodrome in Kazakhstan.¹⁰² Loral also gained adverse publicity in 1998 when Congress initiated an investigation to determine if it had given the Peoples Republic of China sensitive information in 1996 that allowed the Chinese to vastly improve the accuracy of their ballistic missiles.¹⁰³ U.S. Representatives included a provision in the House version of the Department of Defense Appropriations Bill that would have banned satellite sales to China but agreed to delete that provision when the bill was reviewed in conference with Senate negotiators.¹⁰⁴

As 1999 began, the Clinton administration and the Congress began discussions on another significant issue: whether the United States should develop and deploy a national missile defense system.¹⁰⁵

96. See *Iridium on Target with Communications Satellites*, COLO. SPRINGS GAZETTE TELEGRAPH, May 18, 1998, at A8.

97. See *Moon Helps Put Satellite on Right Track*, COLO. SPRINGS GAZETTE TELEGRAPH, June 19, 1998, at A10.

98. See Malcolm W. Browne, *Hardly a Reprise of '66, Meteor Storm Still Dazzles in Places*, N.Y. TIMES, Nov. 18, 1998, at A28.

99. Seth Schiesel, *Pager Service Is Disrupted By a Flitch With Satellite*, N.Y. TIMES, May 20, 1998, at D6. See also Laurence Zuckerman, *Satellite Failure Is Rare and Therefore Unsettling*, N.Y. TIMES, May 20, 1998, at D6; and *A Failure to Communicate*, COLO. SPRINGS GAZETTE TELEGRAPH, May 21, 1998, at A1.

100. See *Another Rocket Explodes During Liftoff*, COLO. SPRINGS GAZETTE TELEGRAPH, Aug. 27, 1998, at A7 [hereinafter *Another Rocket Explodes*]. The accident investigation board which was convened to determine the cause of this launch failure concluded that "wire insulation damage existed in the (vehicle power supply) wiring harness (which) shorted as vehicle vibration increased." *Faulty Wiring Caused Rocket to Explode*, COLO. SPRINGS GAZETTE TELEGRAPH, Jan. 16, 1999, at A13.

101. *Another Rocket Explodes*, *supra* note 100.

102. See *Satellites Explode in Russian Launch* (visited Sept. 10, 1998) <<http://www.abc.news.com/sections/science/DailyNews/satellites980910.html>>. This failure was followed by success. On March 15, 1999, Russia successfully launched four Global Star satellites in the first of several more launches. See *Russia Launches Four U.S. Communications Satellites*, COLO. SPRINGS GAZETTE TELEGRAPH, Mar. 16, 1999, at A6.

103. See Jeff Gerth & David E. Sanger, *How Chinese Won Rights to Launch Satellites for U.S.*, N.Y. TIMES, May 17, 1998, at A1; *Loral Gave Chinese Huge Boost*, COLO. SPRINGS GAZETTE TELEGRAPH, June 18, 1998, at A3; and *White House Defends Sale of Satellites*, COLO. SPRINGS GAZETTE TELEGRAPH, June 19, 1998, at A8.

104. See Eric Schmitt, *House Votes to Prohibit Satellite Exports to China*, N.Y. TIMES, May 17, 1998, at A1; and *Compromise Reached on Defense Budget*, COLO. SPRINGS GAZETTE TELEGRAPH, Sept. 19, 1998, at A8.

105. See Dana Priest, *Cohen Says U.S. Will Build Missile Defense*, WASH. POST, Jan. 21, 1999, at A1; Jane Perlez, *Albright Seeks to Reassure Moscow on 'Star Wars' Plan*, N.Y. TIMES, Jan. 25, 1999, at A6.