

**APPENDIX F
CASE STUDY ABSTRACTS**

Examination of seminal accidents was an essential element of RAND's research methodology. Six accidents were selected for detailed study, including a review of factual and Final Reports (when available), probable cause formulations, and the challenges presented to the investigative teams.

Four of the case study accidents had been completed prior to the start of RAND's research, as is noted in the following sections. For the TWA Flight 800 study, the RAND team visited the reconstruction site and reviewed extensive materials used during the ongoing investigation. The USAir Flight 427 investigation concluded during the course of RAND's research, allowing the team to view firsthand the final NTSB Board hearing and the activities of investigators during the preparation of the draft Final Report. The following abstracts of the accidents were taken from official NTSB reports.

COMAIR FLIGHT 3272--COMPLETED

At about 3:54 p.m. Eastern Standard Time on January 9, 1997, an Empresa Brasileira de Aeronautica, S/A EMB-120RT, N265CA, operated by COMAIR Airlines, Inc., as Flight 3272, crashed during a rapid descent after an uncommanded roll excursion near Monroe, Michigan. Flight 3272 was being operated under the provisions of Title 14 CFR Part 135 as a scheduled, domestic passenger flight from the Cincinnati/Northern Kentucky International Airport, Covington, Kentucky, to the Detroit Metropolitan/Wayne County Airport, Detroit. The flight departed Covington at about 3:08 p.m., with two flight crew members, one flight attendant, and 26 passengers on board. There were no survivors. The airplane was destroyed by ground impact forces and a postaccident fire. Instrument meteorological conditions prevailed at the time of the accident, and Flight 3272 was operating on an instrument flight rules flight plan.

DELTA FLIGHT 554--COMPLETED

At about 4:38 p.m. Eastern Daylight Time on October 19, 1996, a McDonnell Douglas MD-88, N914DL, operated by Delta Air Lines, Inc., as Flight 554, struck the approach light structure at the end of the runway deck during the approach to land on Runway 13 at the LaGuardia Airport, in Flushing, New York. Flight 554 was being operated under the provisions of 14 CFR Part 121, as a scheduled, domestic passenger flight from Atlanta to Flushing. The flight departed the William B. Hartsfield International Airport at Atlanta at about 2:41 p.m., with two flight crew members, three flight attendants, and 58 passengers on board. Three passengers reported minor injuries; no injuries were reported by the remaining 60 occupants. The airplane sustained substantial damage to the lower fuselage, wings (including slats and flaps), main landing gear, and both engines. Instrument meteorological conditions prevailed for the approach to Runway 13; Flight 554 was operating on an instrument flight rules (IFR) flight plan.

SIMMONS FLIGHT 4184 (ROSELAWN)--COMPLETED

On October 31, 1994, at 3:59 p.m. Central Standard Time, an Avions de Transport Regional, Model 72-212 (ATR 72), registration number N401AM, leased to and operated by Simmons Airlines, Incorporated, and doing business as American Eagle Flight 4184, crashed during a rapid descent after an uncommanded roll excursion. The airplane was in a holding pattern and was descending to a newly assigned altitude of 8,000 feet when the initial roll excursion occurred. The airplane was destroyed by impact forces; and the captain, first officer, two flight attendants, and 64 passengers died. Flight 4184 was a regularly scheduled passenger flight being conducted under 14 CFR Part 121, and an IFR flight plan had been filed.

TWA FLIGHT 800--INVESTIGATION IN PROGRESS

On July 17, 1996, at 8:31 p.m. Eastern Daylight Time, a Boeing 747-131, N93119, crashed into the Atlantic Ocean, about eight miles south of East Moriches, New York, after taking off from John F. Kennedy International Airport. All 230 people on board were killed. The airplane was being operated as a 14 CFR Part 121 flight to Charles De Gaulle

International Airport at Paris as Trans World Airlines (TWA) Flight 800. The last transponder altitude reported by air traffic control radar was 13,700 feet and the captain's altimeter was found fixed at slightly more than 13,820 feet. Wreckage from the airplane was recovered from more than nine square miles of ocean area. Reconstruction of portions of the wreckage found evidence of an explosion in the center wing fuel tank, and parts from the fuel tank were among the first found along the debris trail.

USAIR FLIGHT 427--COMPLETED

On September 8, 1994, at 7:04 p.m. Eastern Daylight Time, USAir Flight 427, a Boeing 737-3B7 (737-300), N513AU, crashed while maneuvering to land at Pittsburgh International Airport, Pittsburgh. The airplane was being operated on an IFR flight plan under the provisions of 14 CFR Part 121, on a regularly scheduled flight from Chicago to Pittsburgh. The airplane was destroyed by impact forces and fire near Aliquippa, Pennsylvania. All 132 persons on board were killed.

VALUJET FLIGHT 592--COMPLETED

On May 11, 1996, at 2:13 p.m. Eastern Daylight Time, a Douglas DC-9-32 crashed into the Everglades about 10 minutes after takeoff from Miami International Airport, Miami. The airplane, N904VJ, was being operated by ValuJet Airlines, Inc., as Flight 592. Both pilots, the three flight attendants, and all 105 passengers were killed. Visual meteorological conditions existed in the Miami area at the time of the takeoff. Flight 592, operating under the provisions of 14 CFR Part 121, was on an IFR flight plan destined for the William B. Hartsfield International Airport, Atlanta.