

**Table 1: Analysis of 27 Major Aviation Accidents Investigated by
NTSB, 1999 to 2006**

*Complete Table 1 data from "People or Systems? To Blame Is Human. The Fix Is to Engineer," by
Richard J. Holden. Published in Professional Safety, December 2009, pp. 34-41.*

#	Date, location of accident	Probable cause(s) and contributing factors as determined by NTSB investigation
1	10/11/2006, New York	"pilots' inadequate planning, judgment and airmanship"
2	08/27/2006, Lexington, KY	"the flight crewmembers's [sic] failure to use available cues and aids to identify the airplane's location . . . and their failure to cross-check and verify that the airplane was on the correct runway" <i>Contributing factors: flight crew conversation, inadequate regulatory procedures</i>
3	12/19/2005, Miami, FL	"failure and separation of the right wing during normal flight, which resulted from 1) the failure of the Chalk's Ocean Airways maintenance program to identify and properly repair fatigue cracks in the right wing and 2) the failure of the Federal Aviation Administration to detect and correct deficiencies in the company's maintenance program"
4	12/8/2005, Chicago	"pilots' failure to use available reverse thrust in a timely manner. . . . This failure occurred because the pilots' first experience and lack of familiarity with the airplane's autobrake system distracted them" <i>Contributing factors: inappropriate pilot guidance and training, onboard computer performance, new procedure poorly implemented, lack of safety margin, pilots' failure to divert landing to other airport</i>
5	06/07/2005, Washington, DC	"inexperience of the driver (fleet service agent)"
6	02/16/2005, Pueblo, CO	"flight crew's failure to effectively monitor and maintain airspeed and comply with procedures" <i>Contributing factors: inadequate certification requirements for flight in icy conditions</i>
7	11/22/2004, Houston, TX	"flight crew's failure to adequately monitor and cross check the flight instruments" <i>Contributing factors: flight crew failure to carry out procedures in a timely manner, and flight crew noncompliance with procedures</i>
8	10/19/2004, Kirksville, MO	"pilots' failure to follow established procedures and properly conduct a nonprecision instrument approach at night . . . and their failure to adhere to the established division of duties" <i>Contributing factors: pilot failure to make standard callouts, inappropriate regulations, pilots' unprofessional behavior, fatigue</i>
9	10/14/2004, Jefferson City, MO	"pilots' unprofessional behavior, deviation from standard operating procedures, and poor airmanship . . . pilots' failure to prepare for an emergency landing in a timely manner . . . pilots' improper management of the double engine failure checklist" <i>Contributing factors: engine conditions that prevented engine from restarting, inadequate airplane flight manuals</i>
10	08/13/2004, Florence, KY	"fuel starvation resulting from the captain's decision not to follow approved fuel crossfeed procedures" <i>Contributing factors: captain's inadequate flight plan, pilot distraction, pilot delay in using checklist, flight crew failure to monitor fuel and diagnose fuel-related problems</i>
11	03/23/2004, Gulf of Mexico	"flight crew's failure to identify and arrest the helicopter's descent for undetermined reasons"
12	01/08/2003, Charlotte, NC	"airplane's loss of pitch control during take-off . . . [that] resulted from the incorrect rigging of the elevator system compounded by the airplane's aft center of gravity" <i>Contributing factors: lack of oversight of maintenance work, inappropriate maintenance procedures and documentation, airline program for weight and balance, manufacturer failure to detect problem, inappropriate regulatory support, and oversight of weight and balance</i>

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13	10/25/2002, Eveleth, MN	"flight crew's failure to maintain adequate airspeed"
14	11/12/2001, Belle Harbor, NY	"in-flight separation of the vertical stabilizer as a result of the loads beyond ultimate design that were created by the first officer's unnecessary and excessive rudder pedal inputs" <i>Contributing factors: design of rudder system, inadequate training</i>
15	10/10/2001, Dillingham, AK	"in-flight loss of control resulting from upper surface ice contamination that the pilot-in-command failed to detect during his preflight inspection" <i>Contributing factors: lack of inspection requirements</i>
16	08/05/2001, Washington, DC	"ramp agent's impaired performance due to his hyperthyroidism, which was exacerbated by the heat and was inadequately controlled by medication, and possibly also due to the use of an antianxiety medication"
17	03/29/2001, Aspen, CO	"flight crew's operation of the airplane below the minimum descent altitude without an appropriate visual reference for the runway" <i>Contributing factors: poor policy communication by regulators, visual and weather conditions, pressure on pilot to land</i>
18	01/27/2001, Strasburg, CO	"pilots' spatial disorientation resulting from his failure to maintain positive manual control of the airplane" <i>Contributing factors: loss of electrical power due to weather</i>
19 & 20 ^a	08/09/2000, Burlington Township, NJ	"failure of the pilots of the two airplanes to see and avoid each other and maintain proper airspace separation"
21	05/21/2000, Bear Creek Town, PA	"flight crew's failure to ensure an adequate fuel supply for the flight" <i>Contributing factors: flight crew failure to monitor fuel, flight crew failure to maintain control after engine failure</i>
22	02/16/2000, Rancho Cordova, CA	"loss of pitch control resulting from the disconnection of the right elevator control tab. The disconnection was caused by the failure to properly secure and inspect the attachment bolt"
23	01/31/2000, Port Hueneme, CA	"loss of airplane pitch control resulting from the in-flight failure of the horizontal stabilizer trim system jackscrew assembly's acme nut threads . . . caused by excessive wear resulting from [airline's] insufficient lubrication of the jackscrew assembly" <i>Contributing factors: airline's delay to lubricate mechanical components, regulators' permission of delay, lack of fail-safe mechanism to prevent catastrophe</i>
24	10/31/1999, Atlantic Ocean	"departure from normal cruise flight . . . as a result of the relief first officer's flight control inputs"
25	10/25/1999, Aberdeen, SD	"Incapacitation of the flight crewmembers as a result of their failure to receive supplemental oxygen following a loss of cabin pressurization, for undetermined reasons"
26	09/25/1999, Volcano, HI	"pilot's decision to continue visual flight into instrument meteorological conditions (IMC) in an area of cloud-covered mountainous terrain" <i>Contributing factors: pilot's failed navigation, violation of standard operating procedures</i>

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27	06/01/1999, Little Rock, AR	<p>“flight crew’s failure to discontinue the approach [in inclement weather] . . . and the crew’s failure to ensure that the spoilers had extended after touchdown”</p> <p><i>Contributing factors: flight crew fatigue and stress, continued approach to landing despite high winds, inappropriate use of reverse thrust</i></p>

Note. Excludes investigations of four Sept. 11, 2001, terrorist events.

^aSeparate reports were made for each of the two planes that collided with one another.