



Aviation Investigation Factual Report

Location:	Colorado Spring, Colorado	Incident Number:	DEN071A037
Date & Time:	December 15, 2006, 17:08 Local	Registration:	N24202
Aircraft:	Boeing 737-824	Aircraft Damage:	Minor
Defining Event:		Injuries:	1 Minor, 159 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Factual Information

HISTORY OF FLIGHT

On December 15, 2006, at 1708 mountain standard time, a Boeing 737-824, N24202, operated by Continental Airlines, Inc., as Flight 1065, and piloted by an airline transport-certificated pilot, made an emergency landing at Colorado Springs Municipal Airport (COS), Colorado Springs, Colorado, after the cabin crew reported an in-flight fire. The airplane sustained minor damage. Visual meteorological conditions (VMC) prevailed at the time of the incident. The scheduled domestic passenger flight was being conducted under the provisions of Title 14 Code of Federal Regulations (CFR) Part 121, and an instrument flight rules (IFR) flight plan had been filed. The captain, first officer, four flight attendants, and 153 passengers were not injured. One passenger received a minor burn injury. Six persons were transported to a local hospital. They were treated for smoke inhalation and released. The flight originated at Houston (IAH), Texas, and was en route to Portland (PDX), Oregon.

According to the passenger who was seated in 23B (middle), the passenger seated in 23A (window) was wearing an air purifier device around his neck. He was observed to be holding a cellular telephone up to the window, sometimes talking into it, but claimed he was only taking photographs. As he held his telephone to the window, there was a noise that sounded "like a fuse." He yelled and flung the air purifier device that was around his neck because it had started to burn him. The device exploded into a ball of flames about the size of volleyball and dropped between us in the seats." In the Colorado Springs Municipal Airport Incident Report, this passenger added "he saw a flash and heard a loud bang (like a loud hand clap)." He complained that his ear was still ringing from the loud bang.

The report noted that the passenger was in seat 23C (aisle) heard "a slight noise and noticed smoke coming from the devise that was on a lanyard" around his neck. The passenger pulled the device from around his neck and dropped it between the seat cushions He and the passenger in seat 23B attempted to "douse the area with ice and water provided by other passengers. A flight attendant sprayed the seats with a fire extinguisher. He stated there was "lots of smoke in the area."

The passenger who was seated in 23A told airport officials he had purchased the personal "ionizer" approximately two months ago. He admitted he had taken photographs using his Sprint Trio 700 camera phone. He said he had put the camera phone away and was sitting in his seat when he heard "a hissing-type noise" and heard a "popping sound: with a flash "about 12 inches in diameter" directly in front of him. Smoke poured from the device and he pulled it from around his neck and dropped it between the seats. Examination revealed a quarter-size hole in his shirt and a red area on his chest approximately 2 to 3 inches in diameter.

The aisle flight attendant, who was in the rear galley, said she heard "a loud bang" and saw "a flash of light." The lead flight attendant, who was pushing a food cart up the aisle approximately three rows in front of row 23, heard a noise and saw a flash of light, "lighting up everything in front of her." Seeing smoke coming from seats 23A and B, she rushed aft and told the aisle flight attendant there was a fire and to grab a fire extinguisher. According to the Colorado Springs Fire Department report, a 3-pound Halon 1211 and a 10-pound water fire extinguisher were used to extinguish the fire.

The airplane diverted to Colorado Springs where an uneventful landing was made. Post-incident examination revealed two holes, approximately 2 inches in diameter, on the right side of cushion 23A and the left side of cushion 23B. The foam below both holes "were burnt and blackened." The personal air purifier was impounded and given to Airport Operations. The battery that powered the device was never located.

MEDICAL AND PATHOLOGICAL INFORMATION

The passenger had a small red spot, about the size of a quarter, on his chest, directly beneath where the air purifier was. He refused medical treatment. According to the Colorado Springs Fire Department report, four flight attendants and one passenger were taken to a local hospital, complaining of scratchy throats, headaches, and a "bad taste in their mouths." They were also treated for smoke inhalation.

TESTS AND RESEARCH

The device was described as an "Ecoquest Fresh Air Buddy Personal Air Purifier." According to a sales brochure, it "generates an intense electrostatic ion wind that charges floating particles in the 'breathing zone.' The particles are substantially repelled away from the wearer, creating an almost particle-free 'exclusion zone' for toxic allergens, smoke, dust, viruses, and bacteria. Perfumes and odors can also be minimized by the ion particle-charging-effect."

The device was sent to NTSB's headquarters for examination. According to the Fire and Explosion Specialist's report, "The unit originally came with a 3.6V CR123A size non-rechargeable lithium primary battery (emphasis added). A kit containing a charger and a rechargeable lithium-ion battery was also available for this unit."

"The battery compartment was melted and deformed at the top portion near the clasp. The cover had two areas of metal splatter. Similar material was found along the edges of the battery compartment as well. An EDS analysis of this splatter found the presence of manganese in the splatter material. Manganese dioxide is a component in primary lithium batteries.

The specialist's report noted that in testimony given at NTSB public hearings on the hazards

associated with primary and secondary lithium batteries, a short circuit was "the most common cause of battery fires. The short circuit can be caused either by design flaws, manufacturing defects or improper packaging and handling. Charging non-rechargeable batteries can result in an internal short that can lead to thermal runaway and battery failure. Batteries are generally not designed to be able to contain catastrophic failures, and when they go into thermal runaway they often explode and expel their contents to the environment potentially causing ignition in areas well beyond the initiating battery cell."

ADDITIONAL INFORMATION

Immediately after the incident, Colorado Springs Fire Department personnel attempted to interview the passenger who had been seated in 23A at his motel. He refused to answer the door.

On January 9 and 10, 2007, an FAA inspector personally and telephonically interviewed the passenger. The passenger refused to answer pertinent questions, citing his impending personal injury and product liability lawsuit against the manufacturer, but he did admit he had a "rechargeable" battery and battery charger. The inspector noted, "I got the distinct impression, though [the passenger] [stopped mid-sentence,] that at the time of the incident, the Fresh Air Buddy was being powered by a rechargeable battery."

Other than the Federal Aviation Administration, there were no parties to the investigation.

The airplane was released back to Continental Airlines on December 15, 2006.

Pilot Information

Certificate:	Airline transport; Flight instructor	Age:	57,Male
Airplane Rating(s):	Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	December 1, 2006
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	March 1, 2006
Flight Time:	25000 hours (Total, all aircraft), 7238 hours (Total, this make and model), 10300 hours (Pilot In Command, all aircraft), 246 hours (Last 90 days, all aircraft), 68 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Co-pilot Information

Certificate:	Airline transport; Commercial; Private	Age:	48,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	August 1, 2006
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	October 1, 2006
Flight Time:	9958 hours (Total, all aircraft), 807 hours (Total, this make and model), 8345 hours (Pilot In Command, all aircraft), 224 hours (Last 90 days, all aircraft), 60 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Boeing	Registration:	N24202
Model/Series:	737-824	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Transport	Serial Number:	30429
Landing Gear Type:	Retractable - Tricycle	Seats:	155
Date/Type of Last Inspection:	December 1, 2006 Continuous airworthiness	Certified Max Gross Wt.:	174200 lbs
Time Since Last Inspection:		Engines:	2 Turbo fan
Airframe Total Time:	21564 Hrs at time of accident	Engine Manufacturer:	CFM International
ELT:	Installed, not activated	Engine Model/Series:	CFM56-7
Registered Owner:	Wells Fargo Bank Northwest NA Trustee	Rated Power:	26300 Lbs thrust
Operator:	Continental Airlines, Inc.	Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:	Commercial Service	Operator Designator Code:	CALA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Night
Observation Facility, Elevation:	COS,6184 ft msl	Distance from Accident Site:	
Observation Time:	16:54 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Scattered / 12000 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	60°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.71 inches Hg	Temperature/Dew Point:	11°C / -8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Houston, TX (IAH)	Type of Flight Plan Filed:	IFR
Destination:	Portland, OR (PDX)	Type of Clearance:	IFR
Departure Time:	15:48 Local	Type of Airspace:	

Airport Information

Airport:	Colorado Springs Municipal COS	Runway Surface Type:	
Airport Elevation:	6184 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	Unknown
Runway Length/Width:		VFR Approach/Landing:	Unknown

Wreckage and Impact Information

Crew Injuries:	6 None	Aircraft Damage:	Minor
Passenger Injuries:	1 Minor, 153 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor, 159 None	Latitude, Longitude:	38.809165,-104.700836

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	Robert P Soluren; FAA Flight Standards District Office; Denver, CO
Report Date:	May 14, 2007
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=65041

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).