

DOCKET NO. SA-510

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**NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.**

SURVIVAL FACTORS GROUP FACTUAL REPORT OF INVESTIGATION

**NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON DC 20594**

SURVIVAL FACTORS GROUP FACTUAL REPORT OF INVESTIGATION

A. ACCIDENT

Operator: USAir

Aircraft: Boeing 737-300, N513AU

Location: Hopewell Township, Beaver County, PA

Date: September 8, 1994 Time: 1904 EDT 1/

NTSB Accident Number: DCA-94-MA-076

B. SURVIVAL FACTORS GROUP

Henry F. Hughes, Chairman
NTSB, Survival Factors Division

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FAA, Civil Aeromedical Institute

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C. SUMMARY

On September 8, 1994, at 1904 hours USAir flight 427, a B-737-300, N513AU, crashed while maneuvering to land at the Pittsburgh International Airport at Pittsburgh, PA. The airplane was being operated on an instrument flight rules (IFR) flight plan under the provisions of Title 14, Code of Federal regulation (CFR), Part 121, on a regularly scheduled flight from Chicago-O'Hare International Airport, Chicago, Illinois, to Pittsburgh. The airplane was destroyed by impact forces and fire near Aliquippa, Pa. All 132 persons on board the airplane were fatally injured.

1/All times referenced are eastern daylight times (EDT).

DETAILS OF THE INVESTIGATION

1. Aircraft Configuration

The aircraft was a narrow-body transport-category type configured with 4 first class double seats in the forward portion of the cabin, and 40 main cabin triple seats, for a total of 128 passenger seats separated longitudinally by a center aisle. Exits consisted of 4 type I doors, one pair immediately behind the cockpit and another pair aft of the last row of cabin seats. There also was a pair of type III exits in the overwing area.

Passenger Seats

	First Class	Main Cabin
Manufacturer	Jepson-Burns	Jepson-Burns
Part Number	86802108	86558402
Model Number	2020D 2-57	Airest 2000 UHD-3-58
Certification	TSO C-39a	TSO C-39a

All cabin restraints were American Safety, patent number 2,896,284.

2. Crew Information

2.1 Cockpit Crew

See Operations Group Factual Report of Investigation.

Cockpit Crewseats

	Captain's Seat	First Officer's Seat	Observer's Seat
Manufacturer	IPECO	IPECO	Burns (Trans. Aero)
Part Number	3A090-0019-01-1	3A090-0020-01-1	92000-3
Certification	TSO C39a	TSO C-39a	TSO C-39a

The cockpit was configured in the usual manner with two crew seats and an observer seat located behind the captains seat on the left.

Captain and first officer restraint systems consisted of 5-point harnesses with inertia reels for the shoulder straps, and Pacific Scientific rotary buckles, Model numbers F/A 0108900-02 and F/A 1101167-3.

2.2 Cabin Crew

Flight Attendant Stanley Canty, age 29, was hired by Piedmont Airlines May 31, 1989. He completed Basic Indoctrination Training and Initial Ground Training on May 19, 1989, and 8 hours Initial Operating Experience May 15, 1989. On June 20, 1989, Stanley 3.

completed the USAir Merger Module Training required at the time of the merger between USAir and Piedmont Airlines. He completed Recurrent Training on June 14, 1994, and was fully qualified on the B737-300 aircraft. At the time of the accident he was assigned as the "A" position.

Flight Attendant April Lynn Slater, age 28, was hired by Piedmont Airlines March 1, 1989. She completed Basic Indoctrination Training and Initial Ground Training on February 17, 1989, and 7 hours Initial Operating Experience February 27, 1989. On June 28, 1989, April completed the USAir Merger Module Training required at the time of the merger between USAir and Piedmont Airlines. She completed Recurrent Training February 2, 1994, and was fully qualified on the B737-300 aircraft. At the time of the accident she was assigned to the "B" position.

Flight Attendant Sarah Slocum-Hamley, age 28, was hired by USAir October 26, 1988. She completed Basic Indoctrination Training on October 17, 1988, Initial Ground Training October 12, 1988, and 13 hours of Initial Operating Experience October 24, 1988. She completed Recurrent Training October 14, 1993, and was fully qualified on the B737-300 aircraft. At the time of the accident she was assigned to the "C" position.

Flight Attendant Crewseats

Two bulkhead-mounted double flight attendant jumpseats were installed on the aircraft. The forward jumpseat was aft-facing, mounted on the left side of the aircraft on the bulkhead aft of the forward lavatory. The aft forward-facing jumpseat was mounted on the bulkhead immediately forward of the left aft lavatory.

Flight Attendant Crewseats

	Forward F/A Jumpseat	Aft F/A Jumpseat
Manufacturer	Burns (Trans Aero)	Burns (Trans Aero)
Part Number	90835-6	90835-7
Certification	TSO C-39a	TSO C-39a

Flight attendant jumpseat restraints were American Safety 4-point type, buckle part number 5000 B-2.

3. Passengers

There were 102 adult male passengers, 20 adult female passengers, 3 male children, 1 female child 2/, no infants, and or handicapped passengers onboard Flight 427.

2/ Children are classified as being over 24 months and under 18 years of age.

4. Aircraft Damage and Description of the Crash Site

4.1 Description of Site

See Structures Group Factual Report of Investigation for a description of the accident site.

4.2 Damage to Aircraft

The aircraft was completely destroyed by impact forces and post impact fire.

The following information concerning emergency equipment on board the accident airplane was provided by USAir from maintenance records.

The aircraft had single-lane inflatable escape slides installed at each floor-level exit. When armed, they automatically deploy upon opening the door. Also, they are designed to inflate automatically after deployment.

Emergency Slides

Door	1L Slide	1R Slide	2L Slide	2R Slide
Manufacturer	Air Cruisers	Air Cruisers	Air Cruisers	Air Cruisers
Part Number	D31591-478	D31591-475	D31354-433	D313354-437
Serial Number	1769	452	1033	1821
Certification	TSO C-69	TSO C-69	TSO C-69	TSO C-69

5. Medical and Pathological

The accident was non-survivable. All of the victims perished as a result of massive blunt force trauma.

5.1 Injury Table

	Cockpit Crew	Cabin Crew	Passengers	Other
Fatal	2	3	127	0
Serious	0	0	0	0
Minor	0	0	0	0
None	0	0	0	0
Total	2	3	127	132

6. Emergency Response

The SFG is consulted with Beaver and Allegheny Countys and the Pennsylvania Emergency Management Agency (PEMA) to document the response of public safety and support agencies.

Subsequent to the on-scene investigation all principal

agencies met at the Butler Campus of Pennsylvania State University in November to examine the overall response and on-site management of the accident. The PEMA is compiling submissions from all involved agencies and will publish a public report in early 1995.

6.1 Search and Rescue

The initial indication that an airplane was missing or overdue occurred when the Federal Aviation Administration (FAA) Air Traffic Control (ATC) tower cab facility at the Pittsburgh International Airport noted that a target airplane dropped from radar at 1904. At that time ATC contacted an airplane, which had been carrying sports parachutists, in the area and a local medivac helicopter company, "Angel 3", which was contacted and requested to check the last known position of flight 427. In the interviewing period, more than 75 citizens notified Beaver County "911" operators, and other Beaver and Allegheny County communications centers. Upon arrival at the accident scene law enforcement and fire department personnel initiated a search for survivors however, within a short period of time it was evident there were no survivors.

6.2 Fire Response

Supplemental documentation has been requested from both Beaver and Allegheny County fire departments and will be reported on as soon as the information is available.

6.3 Police Response

Supplemental documentation has been requested from area law enforcement agencies and will be reported on as soon as the information is available.

6.4 Medical Response

Supplemental documentation has been requested from area medical facilities and will be reported upon as soon as it becomes available.


6.5 Disaster Preparedness

The Hopewell Twp. emergency management director and PEMA area director are working in coordination with all county and volunteer agencies. The Counties of Butler and Allegheny have a mutual agreement which was activated early during the emergency response and remained in effect until the accident site was restored. In addition the PEMA responded to provide technical support and financial assistance to the Hopewell Township Emergency Management staff.

7. Survival Aspects

Due to destructive forces, beyond the level of human

tolerances and design strength of the aircraft, this was not a survivable accident.


Henry F. Hughes, Chairman
Survival Factors Group

12/12/94

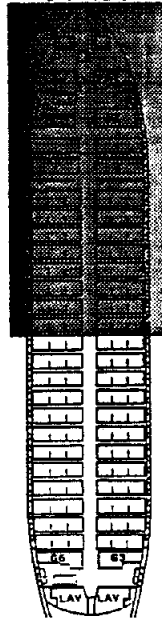
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ATTACHMENT A

Cabin Diagram and Seating Chart*

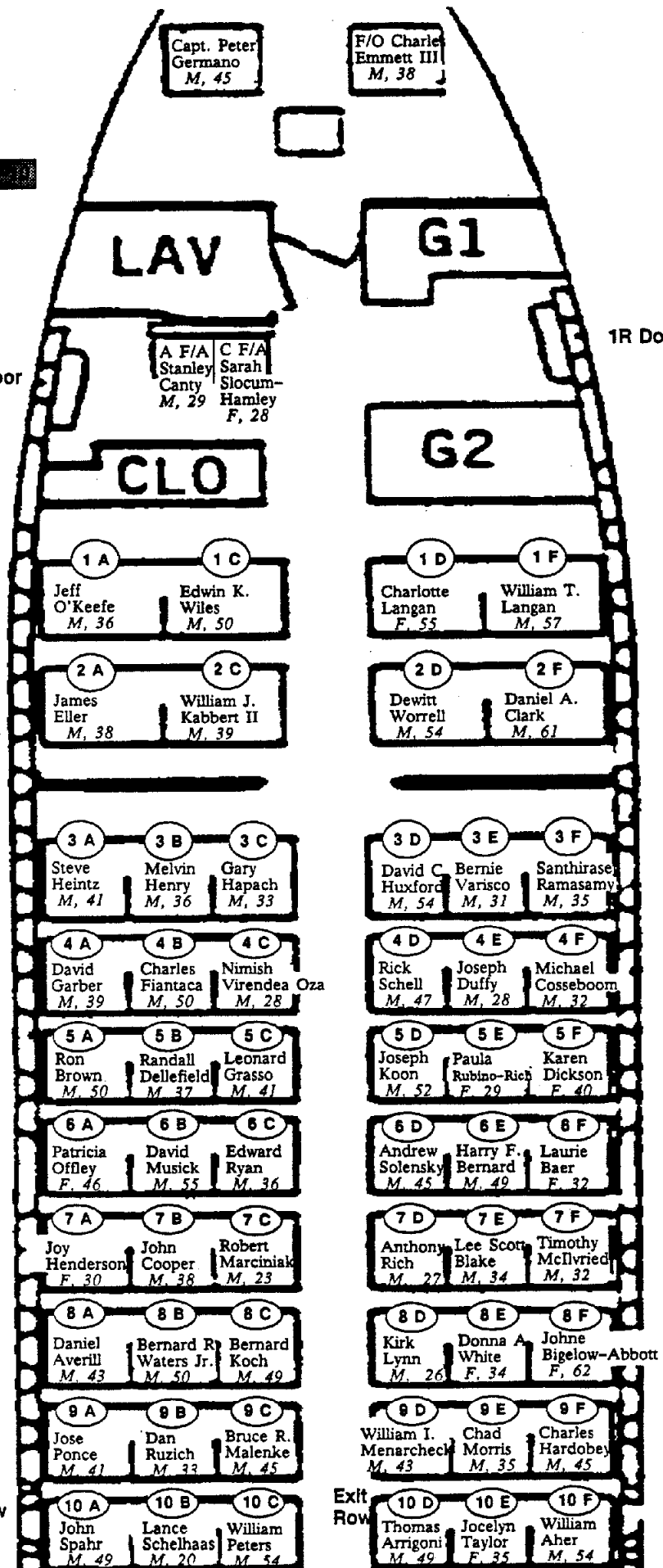
* This seating chart was developed based on assigned seating and may not account for passengers who may have been reseated.

B737-300
8 / 120



1L Door

1R Door



Emergency Exit Row

ROWS 11-22

Michele Ziska
F. 36
Steven Shortley
M. 37

David Wheeler
M, 57

Todd Johnson
M. 37

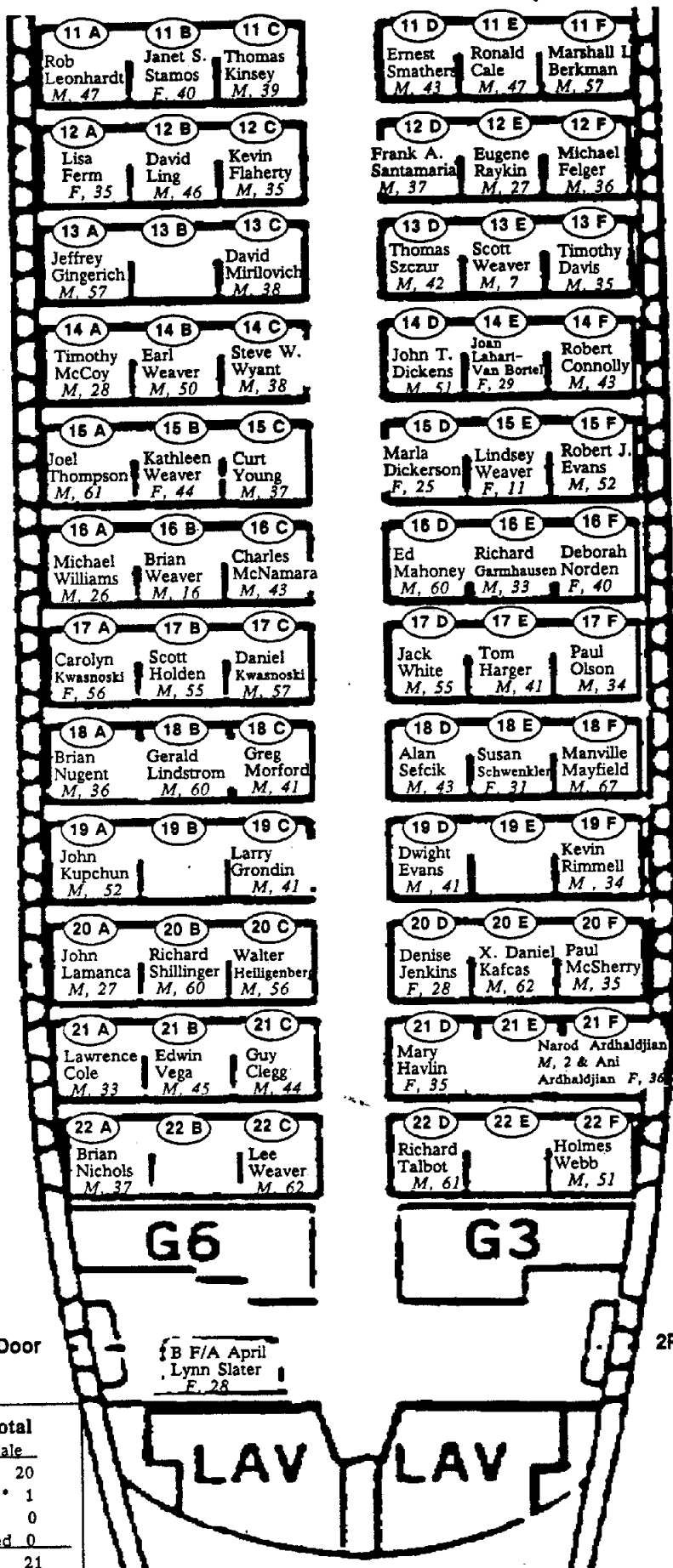
2L Door

B F/A April
Lynn Slater
F. 28

2R Door

Passengers		126 Total	
<u>Male</u>		<u>Female</u>	
Adult	102	Adult	20
Child *	3	Child *	1
Infant	0	Infant	0
Disabled	0	Disabled	0

* (2-18), [includes 30 mos. old unticketed]



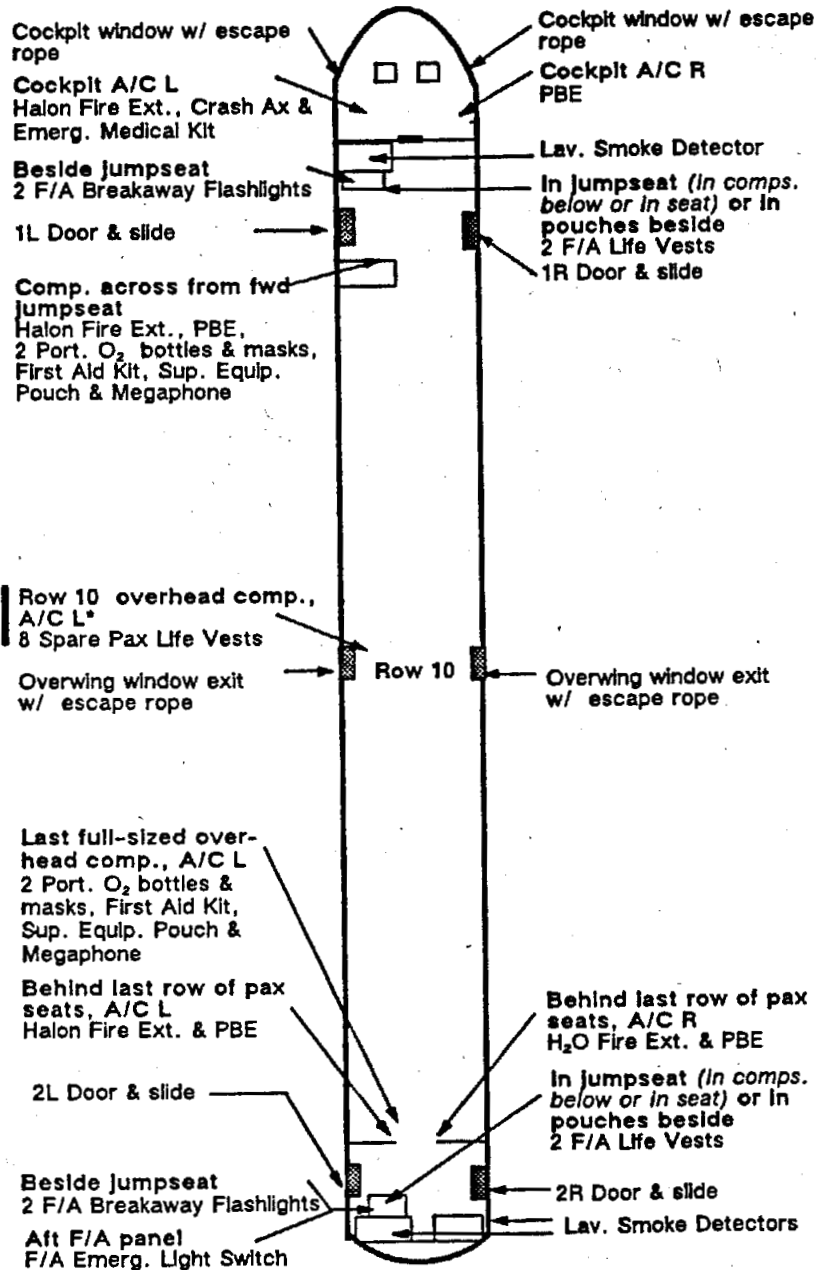
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ATTACHMENT B

B-737-300 Emergency Equipment and Exit Locations*

* This chart was copied from the USAir Flight Attendant Emergency Manual Rev. 22/Nov. 1993.

B-737-300 EMERGENCY EQUIPMENT & EXIT LOCATIONS



*Only on LV-equipped A/C, which also have installed one life vest under each pax seat. All 737-300s are having pax life vests installed.

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ATTACHMENT C

List of USAir B737-300 Cabin Crew Emergency Equipment

Other Emergency Equipment

Description	Model or Part Number	Manufacturer	Comments
Crash Axe	42D8331	Fire Fighters	1
Emergency Medical Kit	MT2010-91A MT2010-91	Majestic Aerotech	1
Halon Fire Extinguisher	A352	Amerex	3
Water Fire Extinguisher	892480	Walter Kidde	1
Crew Life Vest	3505-101C-09	Hoover Industries	1 per crew seat
Passenger Life Vest	3505-101P-09	Hoover Industries	1 per pax seat, plus 8
Megaphone	MV-10	Fannon	2
Crew Protective Breathing Equipment	4566M37B-042NM	Essex PB&R	1 per each extinguisher
Portable Oxygen	5500-A1A-BF20B 5500-A1X-BF20B	Scott	4 bottles per acft.
Emergency Locator Transmitter	750056 model EB-2BW	Dayton-Granger	2 per aircraft
First Aid Kit	24 USAirSP	North	2 per aircraft
Emergency Flashlight	P2-07-0001-214 P2-07-0001-201S P2-07-001-201	DME Corporation	1 per F/A position
Utility Flashlight			1 per acft.
Smoke Detectors			1 each lavatory