NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Washington, D.C. 20594

October 21, 2008

GROUP CHAIRMAN'S FACTUAL REPORT

OPERATIONS GROUP

DCA08MA076

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A. ACCIDENT

Incident Number:	DCA08MA076
Operator:	ABX Air
Location:	San Francisco International Airport (SFO) San Francisco, California
Date:	June 28, 2008
Time:	2215 Pacific Daylight Time[1] (PDT)
Airplane:	Boeing B-767-200, N799AX

B. OPERATIONS GROUP MEMBERS

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[1] All times are Pacific Daylight Time based on a 24-hour clock, unless otherwise noted. Actual time of accident is approximate.

C. SUMMARY

On June 28, 2008, about 2215 Pacific daylight time (PDT),[2] an ABX Air Boeing 767-200, registration N799AX, operating as flight 1611 from San Francisco International Airport (SFO), San Francisco, California, experienced a ground fire before engine startup. The fire was located in the supernumerary area,[3] so the two pilots had to egress the airplane through the cockpit windows. No injuries were reported, and the airplane was substantially damaged. The cargo flight was operating under the provisions of 14 *Code of Federal Regulations* (CFR) Part 121. At the time of the fire, the airplane was parked near the DHL loading facility and all of the cargo had been loaded.

D. DETAILS OF THE INVESTIGATION

The NTSB Operations Group members convened at San Francisco, California, on July 2, 2008, to conduct flight crew interviews.

The Operations Group concluded the field phase of the accident investigation at 1600 on July 3, 2008.

1.0 HISTORY OF FLIGHT

The following history of flight is based on flight crew interviews conducted by the Operations Group:

Flight 1611 was scheduled to depart SFO at 2230 for Airborne Airpark (ILN), Wilmington, Ohio. The airplane was completely loaded and the cargo doors were closed when the flight crew arrived at the airplane. The first officer did a walk-around and then went inside the airplane. The interior checks were accomplished and the loader handed the captain the weight and balance "tape."[4] The captain crosschecked the load plan (cargo position, weights, etc.) to the numbers on the "tape." The first officer signed the weight data record and the captain signed and dated the "tape."

The pilots had checked the oxygen system in the cockpit. The captain stated that he pushed the passenger oxygen switch and tested his oxygen mask and verified pressure on EICAS.[5] They are not required to don the oxygen mask but he did. There was nothing unusual about it. Oxygen was flowing during the test and then the oxygen flow stopped at the completion of the test. Pressure was about 1,300-1,400 psi. It checked normal. It was not stuck in the emergency position.

They were ready to go; they had their ATC clearance and all the paperwork was

[2] All times in this report are PDT based on a 24-hour clock unless otherwise noted.
[3] The supernumerary area is the portion of the airplane that is located directly aft of the cockpit and forward of the main deck cargo compartment. This area is where the lavatory, galley, and three non-flight crew seats are located.
[4] The weight and balance "tape" is a weight and balance computer printout, which includes such items as cargo position and weight, zero fuel weight, takeoff fuel, takeoff weight, stabilizer trim units, payload, etc.
[5] Engine Indicating and Crew Alerting System.

done. The captain handed the paperwork to the DHL representative and then turned off the external power. The airplane was plugged into the external power cart but the airplane was now powered by the APU. When they switched to the APU, it powered up normally. Nobody was using oxygen at the time.

The first officer closed the L1 door and checked the lavatory to make sure nobody was in there. He did not recall if he turned on the coffee maker. He turned off the lights in the supernumerary area except for one map light. His normal procedure was to turn the galley light on if the airplane has one. He did not recall if this airplane had a galley light. He observed that the cargo compartment lights were off and went into the cockpit, closed the cockpit door, sat down in his seat and fastened his seatbelt and shoulder harness about 2215. They called ground control for pushback. There was nothing unusual at all going on.

About 2215-2220, the captain said that he heard a "pop" and then a "rumbling" noise about 10 to 12 seconds later. The noise was heard for not more than 30 to 40 seconds, definitely less than a minute, after the first officer returned to the cockpit. When they heard the "pop," they looked at each other and said, "What's that?" The captain said he heard a "crescendo" of sound.

The first officer stated that he heard a pack valve noise, or something, cycling. It sounded different but not bad. The captain was talking to the person on the ground. About 30 to 45 seconds after the first officer sat down, he (the first officer) heard a "muffled bang," immediately followed by the sound of air flowing. It "crescendoed" up loud, like something banging together. He thought it might have been a ruptured duct. He looked up at the pneumatic panel and the captain turned off the packs. The noise was coming from behind them and it did not go away.

One air conditioning pack had been running and the captain shut it off because he initially thought it was a pneumatic problem. The first officer looked at the pneumatic duct pressure and it was normal. The recirculation fan was not running. No air was circulating in the cockpit drawn up from the airplane's belly. He did not know if the cargo door had let loose or if a seal had blown. The captain turned off the packs but he did not look at the pressure gauge. The sound did not go away. The airplane was powered by the APU until the captain discharged the fire extinguisher bottle and the APU shut down. He switched off the APU although the APU had already shut down. Smoke was coming in from the ceiling; he had trouble seeing the overhead panel. It was dark; no power. The captain stated that it was becoming difficult to see. The captain also discharged the fire extinguisher bottles to the engines.

Initially, there were no smoke detector or cargo fire warnings. Later the captain heard an intermittent cargo smoke detector after the fire had been "roaring." There were no unusual warnings or annunciations leading up to the fire. He did not know what the problem was but he knew he had to get out of the airplane.

The first officer unbuckled his seatbelt and opened the cockpit door. Dark smoke was coming down from the ceiling. He could see the back of the supernumerary area. The supernumerary area filled up with dark brown smoke. There was a glow on the upper

side of the area (airplane right) in the same plane as the PSION computer.[6] He peeked around the corner and then closed the door. The first officer told the captain that "we have a fire and got to get off the airplane." Smoke entered the cockpit; not a great deal, but some. The first officer sat down in his seat to make it easier to open his sliding window. He reached for the escape rope, fumbling around but getting it in a few seconds. He tugged on the escape rope and then threw it out the window. He also got a couple breaths of fresh air out the window. The smoke was pungent. He called ground control to report the fire but he did not declare an emergency. He told ground control that they needed "CFR." [Crash Fire Rescue]. He talked to the captain about getting out of the airplane. For whatever reason, he looked out the window and yelled "fire, fire, fire." The first officer escaped through the window opening and then went down the rope. He stated that using the rope to escape was "absolutely a non-event." Upon reaching the ground, he then walked to the left side of the airplane and observed the captain's window moving inward but not quite open. The first officer stated that, within seconds, the "CFR" were there. He yelled to the captain to get out. The ground personnel were pushing the airstairs carefully under the L1 door. He told them to move it "smartly" to the captain's window instead. The captain then opened his window and jumped onto the airstairs.

The captain said that he was thinking cargo fire. He first smelled smoke when the first officer came back into the cockpit, maybe within 15 to 20 seconds, but certainly within 30 seconds. There had been no airplane systems problems, no annunciations or warnings. The lavatory smoke detector did not activate at first but the first officer said that he later heard it when he was going out the window. Smoke came pouring into the cockpit. The first officer called ground control and reported the fire. The captain did the evacuation checklist but he did not open the outflow valves; the captain thought it would be pointless with a sliding window already open.

The captain never went to the back of the cockpit to observe the fire. Smoke was getting very bad very quickly. It was seeping through the cockpit doorway. The captain could smell the smoke and he got a "gulp" of it but he did not feel any heat from the fire.

After the first officer exited through his window, the captain was still fumbling for the escape tape. He heard the first officer call to him that he had to get out of the airplane. He observed the ground crew pushing the airstairs to the L1 door and he later found out that it was the first officer who told them to push the airstairs to the captain's window.

It was very dark and visibility was poor. The captain closed his eyes because his eyes were burning. He exited out through his window onto the airstairs and he then made his way down to the ground. Both the captain and the first officer walked away from the airplane and within seconds, the CFR pulled up to the front of the airplane. The CFR asked for the paperwork and the first officer told them that it was located behind the captain's seat. Dry ice was the only reported hazardous material (HAZMAT) on board the airplane. CFR also asked how many people were on board. There was also a DHL person there, along with the airport police.

The first officer was taken to the hospital in the ambulance. He was examined but found to be in good health. He came back to the airport in a cab. The captain was

[6] Used by ground personnel for weight and balance computations

examined in the ambulance at the scene and was also found to be in good health. The captain remained at the scene and was not taken to the hospital.

The captain and first officer stayed at the scene for about four hours, leaving about 0200 local time to go the hotel.

The first officer stated that the fire fighters first aimed hoses into the cockpit and then they tried to open the L1 door but it would not open. They chopped a hole in the side of the fuselage. They moved the airstairs to the L1 door and went inside through the hole they had made. They did not enter through the cockpit windows. The fire had burned through the top of the fuselage. The captain and first officer stated that they observed black smoke pouring out of the airplane but no smoke was coming down from the E & E compartment.

2.0 FLIGHT CREW INFORMATION

2.0.1 The Captain, Randolph J. Brooks

Age: 54
Date of hire with ABX Air: August 21, 1978

Pilot certificates and ratings:
- Airline Transport Pilot (issued May 17, 2005)
  - Ratings and Limitations:
    - Airplane Multiengine Land
    - B-757, B-767, CE-500, DC-8, DC-9, YS-11
    - Commercial Privileges: Airplane Single Engine Land
    - B-757, B-767 Circling Approaches - VMC Only
- Flight Instructor (issued April 3, 2008)
  - Ratings and Limitations:
    - Airplane Single and Multiengine
    - Instrument Airplane
    - Valid only when accompanied by pilot certificate
    - Expires May 31, 2010
- Ground Instructor (issued April 12, 1975)
  - Ratings and Limitations:
    - Advanced
    - Instrument

Medical certificate:
- First Class (issued February 14, 2008)
  - Limitations: Must wear corrective lenses

A search of FAA records revealed no FAA enforcement actions, accidents, or incidents.

A review of FAA airman records indicates the following chronology of acquired airman certificates:

AIRMAN CERTIFICATE	ORIGINAL ISSUE DATE
Private Pilot – Airplane Single Engine Land	May 4, 1972
Commercial Pilot – Airplane Single Engine Land	May 25, 1974
Basic Ground Instructor	June 6, 1974
Advanced Ground Instructor	September 9, 1974
Commercial Pilot – Instrument Airplane	March 15, 1975
Flight Instructor – Airplane Single Engine	April 1, 1975
Instrument Ground Instructor	April 12, 1975
Flight Instructor – Instrument Airplane	January 28, 1976
Commercial Pilot – Multiengine Land	July 2, 1977
Flight Instructor – Airplane Multiengine	June 29, 1978
Airline Transport Pilot – Airplane Multiengine Land	July 22, 1980
CE-500 Type Rating	July 22, 1980
YS-11 Type Rating	December 1, 1980
DC-9 Type Rating	March 25, 1985
DC-8 Type Rating	March 27, 1989
B-757/767 Type Rating	May 17, 2005

Flight experience according to the pilot and/or ABX Air records:

FLIGHT TIME[7]	HOURS
Total	19,000
Total B-767	1,800
Total PIC B-767	1,800
Last 24 hours	4.5
Last 7 days	12.1
Last 30 days	33.2
Last 90 days	84.4
Last 12 Months	497

Training and checks:

TRAINING / CHECK	DATE
Last B-767 recurrent ground training	February 16, 2008
Last B-767 proficiency check	February 18, 2008
Last line check	February 28, 2008

The captain stated that he has a general aviation background and was a flight instructor. He became Assistant Chief Flight Instructor for Midwest Air Charter, which turned into Airborne Express and then ABX Air. He is a line pilot and not a check airman.

[7] Including incident flight.

2.0.2 The First Officer, David L. Hughes

Age: 42
Date of hire with ABX Air: July 30, 1997

Pilot certificates and ratings:
Airline Transport Pilot (issued May 1, 2006)
Ratings and Limitations:
Airplane Multiengine Land
B-757/767, DC-3
Commercial Privileges: Airplane Single Engine Land
Private Privileges: Lighter-Than-Air Free Balloon
Limited to Hot Air Balloons with Airborne Heater
B-757/767 SIC Privileges Only
B-757/767 Circling Approaches - VMC Only

Flight Instructor (issued April 16, 2007)
Ratings and Limitations:
Airplane Single Engine
Valid only when accompanied by pilot certificate
Expires April 30, 2009

Flight Engineer (issued May 17, 1995)
Ratings and Limitations:
Turbojet Powered

Medical certificate:
First Class (issued March 18, 2008)
Limitations: None

A search of FAA and company records revealed no FAA enforcement actions, accidents, or incidents.

A review of FAA airman records indicates the following chronology of acquired airman certificates:

AIRMAN CERTIFICATE	ORIGINAL ISSUE DATE
Private Pilot – Airplane Single Engine Land	May 14, 1986
Private Pilot – Instrument Airplane	November 6, 1987
Private Pilot – Airplane Multi Engine Land	December 4, 1987
DC-8 Type Rating	March 27, 1989
Flight Instructor – Airplane Single Engine	April 3, 1989
Commercial Pilot – Airplane Multiengine Land	July 23, 1988
Commercial Pilot – Airplane Single Engine Land	June 9, 1991
Airline Transport Pilot – Airplane Multiengine Land	January 12, 1994
DC-3 Type Rating	January 12, 1994
Flight Engineer – Turbojet Powered	May 17, 1995
Private Pilot – Lighter-Than-Air Free Balloon	June 30, 1996
B-767/767 SIC Type Rating	May 1, 2006

Flight experience according to the pilot and/or ABX Air, records:

FLIGHT TIME[8]	HOURS
Total	9,843
Total B-767	4,300+
Total SIC B-767	4,300+
Last 24 hours	4.5
Last 7 days	25.5
Last 30 days	75.4
Last 90 days	109.5
Last 12 Months	612

Training and checks:

TRAINING / CHECK	DATE
Last B-767 recurrent ground training	March 29, 2008
Last B-767 proficiency check	April 28, 2008
Last line check	June 7, 2007

He had most of his pilot certificates before he attended college at Middle Tennessee State University. He has 200 hours of instruction given. He flew about 1,200 hours in the right seat on the DC-3s and Convair 240, 340, and 440s for Rhoads Aviation in Columbus, Ohio. He also flew DC-3s from Nashville to Indianapolis six nights a week for the U.S. Postal Service. He was then hired by Ryan Aviation flying B-727 flight engineer (672 hours) before moving to the right seat (300+ hours). He was then hired by Airborne Express as a DC-8 Second Officer (126 hours in that position) and then moved to the right seat on the DC-9 for 11 months. He has flown as first officer on the B-767 for 10 years. He is a line pilot, not a management pilot.

[8] Including incident flight.

3.0 AIRPLANE INFORMATION

According to the FAA Registry, the registered owner of the accident airplane was ABX Air Inc, with a registration certificate issue date of September 23, 2003.

3.0.1 Weight and Balance, Configuration, and Speeds

AIRPLANE WEIGHTS	
	WEIGHT (Pounds)
Basic Operating Weight	166,246
Passengers	0
Baggage/Cargo	52,565
Zero Fuel Weight	218,811
Maximum Zero Fuel Weight*	266,000
Fuel (actual fuel minus 1,000 pounds taxi fuel)	59,000
Gross Takeoff Weight	277,811
Maximum Gross Takeoff Weight*	347,000

* Manufacturer's Airplane Flight Manual limitation

CG, STABILIZER TRIM SETTING, FLAP SETTING AND SPEEDS	
Takeoff Center of Gravity (CG)	26.09 percent mean aerodynamic chord (MAC)
CG Limits	13.5 to 34.0 percent MAC
Takeoff Flap Setting	15
Takeoff Speeds	V_1=135 knots, V_R=139 knots, V_2=144 knots

3.0.2 Oxygen System

According to the 767 Operating Manual, Systems (Chapter 8, Section 35, Page 1), the flight crew oxygen system is described as follows:

The PC[9] flight station oxygen system uses six quick-donning diluter demand mask/regulators with one at each seat location. Oxygen is supplied by dual cylinders.

The SF[10] flight station oxygen system uses four quick-donning diluter demand mask/regulators. Oxygen is supplied by dual cylinders.

The supernumerary compartment oxygen system uses three quick-donning diluter demand oxygen masks. The masks are stored in the overhead passenger service unit (PSU). Oxygen masks are identical to flight crew masks except that the mask microphone does not function. Oxygen is supplied by a single cylinder.

A check valve prevents oxygen flow from the crew bottle (bottle 1) to the supernumerary oxygen masks. Bottle 1 is available only to the flight deck oxygen system while bottle 2 is shared and available to both the flight deck and supernumerary oxygen systems.

Pressure is read on the lower EICAS display when the STATUS mode is selected. The primary oxygen bottle is displayed and the second oxygen bottle may be observed by depressing and holding the Crew Oxygen/Bottle 2 switch. The oxygen switch is a momentary action switch adjacent to the emergency exit light switch located on the overhead panel.

Each mask/regulator is stored in a box immediately adjacent to each seat location. To use the mask, squeeze the red release levers with the thumb and forefinger and remove from stowage. Squeezing the release levers inflates the mask harness and the flow indicator will show yellow momentarily as the harness inflates. Place the mask over the head and release the levers. The harness will contract, fitting the mask to the head and face.

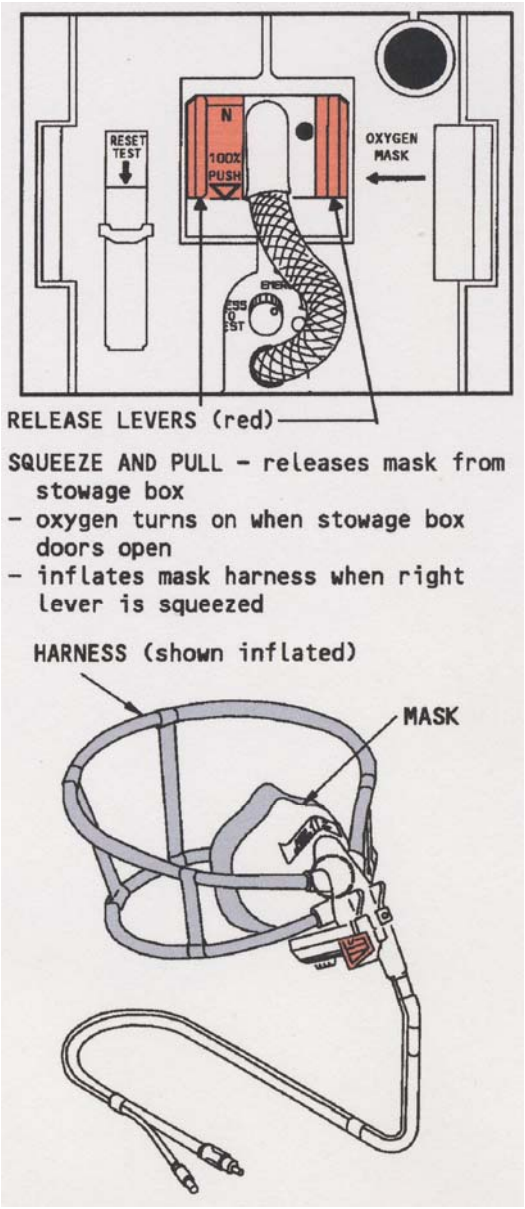
Oxygen flow is controlled by a regulator that is mounted on the oxygen mask. The regulator may be adjusted to supply 100% oxygen by pushing the Normal-100% Selector.

A Vent Valve Selector is mounted on the mask. The selector is pushed up to the closed position when smoke goggles are not required. With the selector pushed down, the vent valve opens, allowing oxygen to flow from the mask to the goggle. Red indicators appear when the valve is open.

Oxygen is available for use during high altitude decompression, emergency descent and when smoke or harmful gasses are present.

[9] Standard Package Carrier configuration.
[10] Special Freighter configuration.

3.0.2.1 Oxygen Mask



3.0.2.2 Preflight

According to the Flight Operations Manual (Chapter 4, Pages 3 and 4), each crewmember shall personally preflight the oxygen equipment at their assigned flight station to ensure the oxygen mask is within immediate reach from his station, properly fitted, connected to appropriate supply terminals and properly functioning. In addition, the crewmember will ensure that quick donning masks can be put on without disturbing eye glasses or delaying the crewmember from proceeding with assigned emergency duties, that the smoke goggles fit properly, and that communications with other crewmembers on the airplane intercommunication system is not impeded by the use of oxygen equipment. A specified crewmember is designated on the appropriate aircraft checklist to ensure the oxygen system pressure is adequate for dispatch.

According to the 767 Operating Manual, (Chapter 4, Section 2, Page 4), during the

interior inspection by the first officer, the oxygen and mask microphone are tested as follows:

Audio selector panel — Set
Boom/Oxy switch — Oxy
Interphone microphone select switch — ON
Receiver and flight deck speaker volume controls – Adjust

Oxygen mask — Stowed and doors closed

Normal/100% selector — 100%

RESET/TEST switch — Push and hold
Verify that the yellow cross shows momentarily in the flow indicator.

EMERGENCY/TEST selector — Push and hold
Continue to hold the RESET/TEST switch and push the EMERGENCY/TEST selector for 10 seconds. Verify that the yellow cross shows continuously in the flow indicator.

Verify that the crew oxygen pressure does not decrease more than 100 psi.

If the oxygen cylinder is not in the full open position, pressure can:
- decrease rapidly,
- decrease more than 100 psi, or
- increase slowly back to normal.

Simultaneously push the push to talk switch and verify an oxygen flow sound over speaker.

Boom/Oxy switch — Boom

Crew oxygen pressure — Check EICAS status page Verify that the pressure is sufficient for dispatch.

3.0.2.3 Oxygen System Test

According to the 767 Operating Manual (Chapter 4, Section 2, Page 24) supplemental normal procedures, the crew oxygen system is tested as follows:

MASK — STOWED

AUDIO SELECTOR PANEL — SET
Boom/Oxy Switch - OXY
Interphone Microphone Select Switch - ON
Receiver and Cockpit Speaker Volume Controls - ADJUST

NORMAL/100% SWITCH — 100%

RESET TEST SLIDE LEVER — PUSH DOWN AND HOLD

Observe yellow cross appear momentarily in flow indicator.

EMERGENCY/TEST SELECTOR PUSH AND HOLD

While holding reset test slide lever down, push emergency/test selector and observe yellow cross appear in flow indicator.

Oxygen Pressure - CHECK EICAS

Verify pressure is adequate for dispatch and that EICAS oxygen pressure does not decrease. See Crew Oxygen Requirements chart (next page).

PUSH-TO-TALK SWITCH PUSH

While holding reset test slide lever down and pushing emergency/test selector, simultaneously push push-to-talk switch and check an oxygen flow sound through the cockpit loudspeaker. Then release all switches.

Captains Only:

Depress and hold CREW OXY/BTL2 switch on overhead panel.

Reset/Test Slide Lever — PUSH AND HOLD

Verify yellow cross appears momentarily in the flow indicator.

Oxygen Pressure - CHECK EICAS

Verify pressure is adequate for dispatch and that EICAS oxygen pressure does not decrease.

Release all switches.

BOOM/OXY SWITCH — BOOM

Note: This test procedure ensures that the oxygen cylinder shutoff valves are not inadvertently closed and that the EICAS indications are not trapped oxygen pressure.

3.0.3 Supernumerary Compartment

According to the 767 Operating Manual, Systems – Aircraft General (Chapter 8, Section 0, Pages 3 and 4), the description of the supernumerary compartment is as follows:

The Supernumerary compartment is located behind the flight deck and contains seating for three passengers at the rear of the compartment.

The compartment contains a galley and baggage area, trash receptacle, lavatory, forward attendant panel and handset for communication with the flight deck.

A Passenger Service Unit (PSU) is located on the ceiling of the compartment above the seats. Quick donning oxygen masks, reading lights, illuminated instruction signs and air ventilation outlets are located on the PSU.

The forward attendant panel has controls for compartment lighting and heating, and has a quantity indicator for potable water.

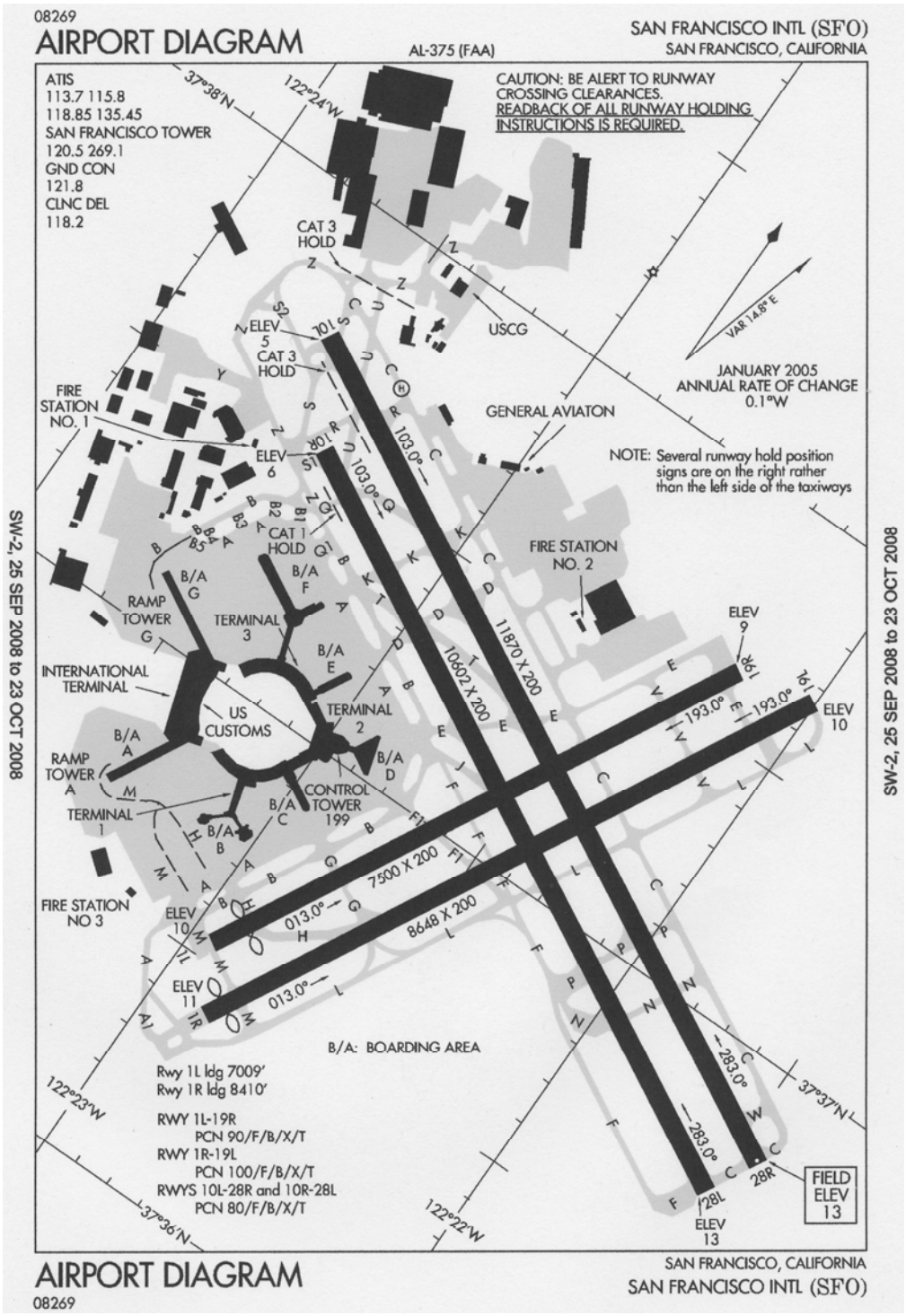
A communication handset is mounted on the smoke barrier wall next to the passenger seats and is used for communication with the flight deck.

The forward entry doors L1 and R1 provide both normal and emergency egress. The flight deck security door provides access to the flight deck. The rear wall of the compartment divides the supernumerary compartment from the main deck cargo area and functions as a smoke barrier. The main deck cargo access door in the smoke barrier has a viewing window, security latches, and provides access to the cargo compartment.

4.0 AIRPORT INFORMATION

San Francisco International Airport is located 8 miles SE of San Francisco, California. The airport is served by two sets of parallel runways, numbered 10L-28R, 10R-28L, and 1L-19R, 1R-19L. The airport elevation is 13 feet mean sea level (MSL).

4.0.1 SFO Airport Diagram



E. LIST OF ATTACHMENTS