DOT/FAA/AM-99/30

Office of Aviation Medicine
Washington, DC 20591

Frequency and Costs of Transport Airplane Precautionary Emergency Evacuations

Michael K. Hynes

Hynes and Associates, Inc.
100 Helicopter Drive
Frederick, OK 73542-2400

December 1999

Final Report

U.S. Department of Transportation
Federal Aviation Administration

NOTICE

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
DOT/FAA/AM-99/30		

4. Title and Subtitle	5. Report Date
Frequency and Costs of Transport Airplane Precautionary Emergency Evacuations	December 1999
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
Hynes, M.K.	

9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
Hynes and Associates, Inc. 100 Helicopter Drive Frederick, OK 73542-2400	11. Contract or Grant No. DTFA-96-P-51602 and DTFA0299V05793

12. Sponsoring Agency name and Address	13. Type of Report and Period Covered
Office of Aviation Medicine Federal Aviation Administration 800 Independence Ave., S.W. Washington, DC 20591	14. Sponsoring Agency Code

15. Supplemental Notes

This work was performed under contract from the Aeromedical Research Division of the FAA Civil Aeromedical Institute (CAMI) under task AM-B-96-PRS-93; Jeffrey H. Marcus, PhD, served as CAMI's contract monitor.

16. Abstract

Precautionary emergency evacuations that occurred during the period of 1988 through 1996 were evaluated. Primary data sources included the FAA, NTSB, and NASA, as well as the records of airport managers. Additional data were collected from airlines, insurance adjusting firms, and litigation records. The results revealed that precautionary emergency evacuations occurred about 58 times per year, and involved an average of 4,759 people per year. In about 18 percent of the incidents, aircraft emergency escape systems were deployed without being reported to the FAA, and approximately 80 percent of such incidents were not reported to the NTSB.

The direct costs related to injuries, administrative overhead, and equipment maintenance associated with precautionary emergency evacuations were estimated to be over $11 million per year, indicating that (a) enhanced incident information management systems and (b) research targeted to minimize precautionary emergency evacuations and improve emergency evacuation outcomes are needed.

17. Key Words	18. Distribution Statement
Emergency Egress, Evacuation, Airline Operations, Passenger Injuries, Economic Loss, Airline Economics	Document is available to the public through the National Technical Information Service,

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	30	

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

ACKNOWLEDGMENT

The assistance of Dr. Mark Lewis in the presentation of data and of Dr. Lewis and Dr. Mac McLean in the preparation of the manuscript is gratefully acknowledged.

Frequency and Costs of Transport Airplane Precautionary Emergency Evacuations

INTRODUCTION

Rapid and safe evacuation of an airliner cabin in a life-threatening emergency is critical to the safety and survivability of the passengers. Toward this end, the Code of Federal Regulations (CFR, Title 14) contains a number of requirements devoted to slowing the growth of an airplane fire and speeding an emergency evacuation.

Frequently in a survivable airplane accident, a fuel-fed post-crash fire starts that represents a major threat to survivors of the impact. Survivors must escape quickly from the cabin, before the fire makes the environment too toxic to support life. In instances where the crewmembers believe the probability of fire to be high, they commonly initiate an emergency evacuation. Precautionary Emergency Evacuations (PEEvacs) are those evacuations that are ordered by the crew, or sometimes initiated by passengers, because of the perceived threat of fire, although no fire actually develops. As in other emergency evacuations, passengers and crew often suffer injuries; so, had they known that no fire would result, it would have been safer for them to remain on the airplane.

The incident databases maintained by the Federal Aviation Administration (FAA) and by the National Transportation Safety Board (NTSB) reveal relatively little about the frequency and nature of PEEvacs, even though these evacuations occur on airport properties, with the airport Crash-Fire-Rescue (C-F-R) teams responding. PEEvacs are, however, usually documented in records maintained by airport managers, as identified by Hynes (1994), who developed information on a significant number of PEEvacs, using airport records as the primary data source.

The purpose of the current study was to develop additional data about the frequency and nature of precautionary emergency evacuations, as well as information on the resulting injuries and costs of these events. The specific goals of this study were:

1. Create a database containing information from virtually every precautionary evacuation of a CFR Parts 121 or 135 air carrier operation in the United States, occurring between January 1988 and December 1996. Use this information to determine the frequency of PEEvacs and the number of passengers and crew involved.
2. Compare the number of cases collected in this manner with the number of PEEvacs recorded in the comprehensive databases maintained by the FAA and the NTSB.
3. Collect information from liability insurance claims and other legal actions resulting from PEEvacs. Use this information to determine the nature, significance, and extent of injuries resulting from PEEvacs.
4. Using related information sources, determine the costs of these incidents.

METHODS

For the purposes of this study, the term *precautionary emergency evacuation* includes: (a) those incidents in which the emergency escape system was deployed, and (b) those incidents in which the emergency escape system was not deployed, but airline passengers and crew members were forced to conduct an unscheduled deplanement at other than a normal gate location.

Incident Data. Information on the use of emergency escape systems and emergency evacuations was collected from several sources, including the FAA *Accident and Incident Data System* (AIDS), the NTSB accident database, and the National Aeronautics and Space Administration (NASA) *Aviation Safety Reporting System* (ASRS). Information suggesting that precautionary evacuations might have occurred was also collected from the FAA Administrator's Daily Bulletin. An historical review of this information was conducted to identify specific airports at which detailed PEEvacs occurred and the approximate dates of those incidents. This information was used to establish the mailing list for a subsequent survey, in which information was obtained from 136 airport managers.

In 1994, Hynes sent 73 US airport managers a survey designed to collect information on precautionary evacuations conducted at their facilities. In 1995, Hynes sent a second survey to the managers of the 40 most active US airports. The results of these

surveys were previously reported by Hynes (1994, 1997). As part of the current project, Hynes sent a third survey (see Appendix B) to the managers of 63 airports in late 1996. Those airports included the 50 most active in the US and 13 additional airports that were known from other sources (e.g., media reports) to have had emergency evacuation incidents. Together, they accounted for 85.6% of all CFR Parts 121 and 135 passenger enplanements in 1995.

Appendix C includes a list of the airports, information about which specific survey(s) were sent to specific airports, the number of enplanements during 1995 at those airports, and the resulting US enplanement-based 1995 ranking of the airports. Appendix C also indicates the airports that responded and those that did not.

Each survey required at least 3 mailings of the survey instrument. Telephone contacts were frequently used to confirm the data obtained, to respond to questions from the persons submitting the data, or to determine if the airport management ever intended to respond to the survey request. The response rate was 92.1%.

Injury Data. To quantify the costs of injuries associated with PEEvacs, 8 airlines (included in Appendix D), representing approximately 90% of passenger revenue miles, were surveyed. Additional data were obtained from litigation reports in WESTLAW®, as of December 31, 1996, and by direct contact with insurance adjusting firms.

RESULTS

Appendix A contains the sources of information used to collect the reported information. In many cases, incidents were confirmed by several different sources. Included is information from 136 different US airports, covering the period from January 1, 1988, through December 31, 1996. However, the analyzed data set only contained data on PEEvacs that occurred through November 1, 1996. This was because of the proximity of December 31, 1996, to the end of the study, a period of time shorter than the delay between the time an incident occurs and the subsequent time at which detailed information about the incident becomes available.

During the 106-month (~ 9 year) period studied, there were 519 PEEvacs (an average of 4.9 per month, or once every 5 to 6 days), involving an estimated 42,835 airline passengers and crew members. This averages almost 58 incidents per year, and involves an average of 4,759 people per year, or about 400 per month. From a yearly perspective, the greatest number of events occurred in 1991, involving over 6,000 people. Note that, in 183 cases (35% of the total), the exact number of passengers and crew was not available. In those instances the number of people involved was estimated (marked by an E in Appendix A) by using the capacity of the aircraft involved and the typical passenger load for that period. However, all incidents were confirmed, and the events listed are actual, not estimates.

Figure 1 shows the number of PEEvacs and the number of passengers and crew involved for each year of the study. There was no apparent trend in either the number of PEEvacs occurring annually or in the number of people involved in each incident. Neither do the data reveal patterns of occurrence related to aircraft type, except that all wide-body PEEvacs resulted in at least 1 injury.

Data Source Reliability. Development of the information in Appendix A relied on all of the referenced data sources. An analysis was made to determine if any one of them could be relied on as a single source for all precautionary evacuations. However, since the information in Appendix A contains incidents in which the emergency escape systems were not deployed, as well as incidents for which information on escape slide deployment was not available, discrepancies exist among the various data sources.

For example, both the FAA and the NTSB collect reports on the use of emergency escape systems. The FAA AIDS database contains information on 282 of the 519 events in Appendix A, or about 54.3% of the incidents, while the NTSB database system contains information on less than 8.5% of the events. When the analysis is restricted to those incidents for which information about emergency escape system deployment is known (227 incidents), the number of incidents recognized by both agencies was considerably higher. The FAA AIDS database was found to contain reports on 107, or 82.3%, of the 130 incidents in which the slide was deployed, while the NTSB database system contains reports on 27, or 20.8%, of the same incidents. Figure 2 shows the reporting status for the FAA AIDS database, while Figure 3 shows the reporting status for the NTSB database system, where information about escape slide deployment is known.

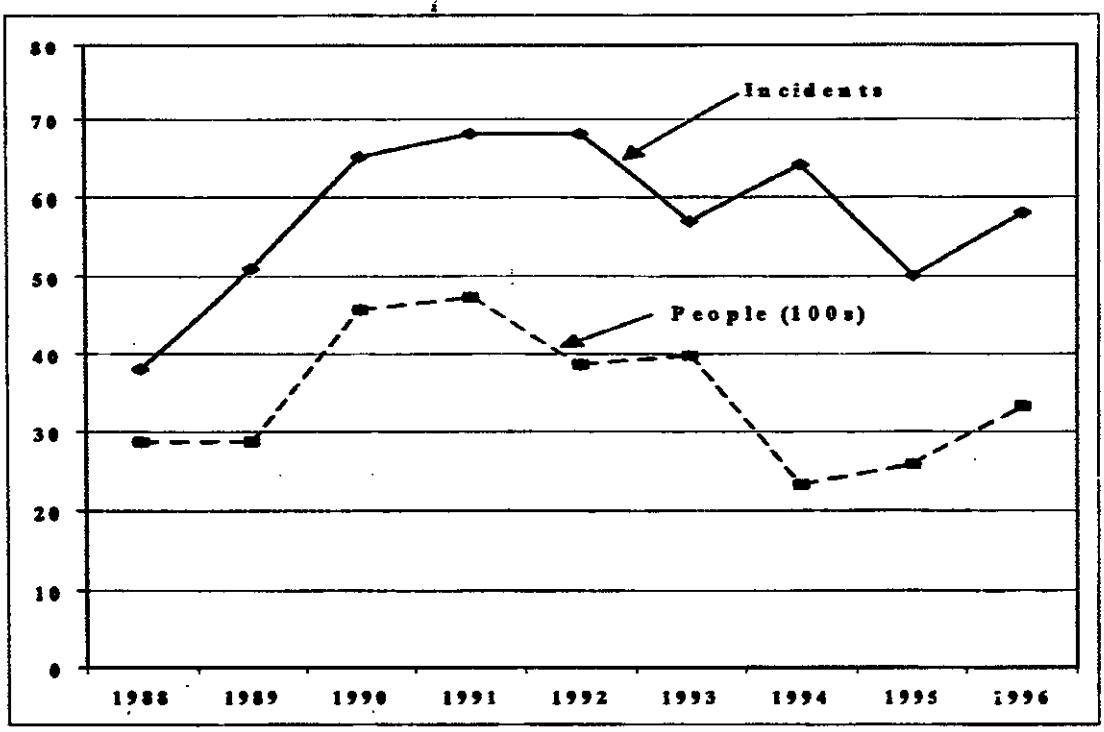

Figure 1. Number of Precautionary Evacuations and Evacuees.

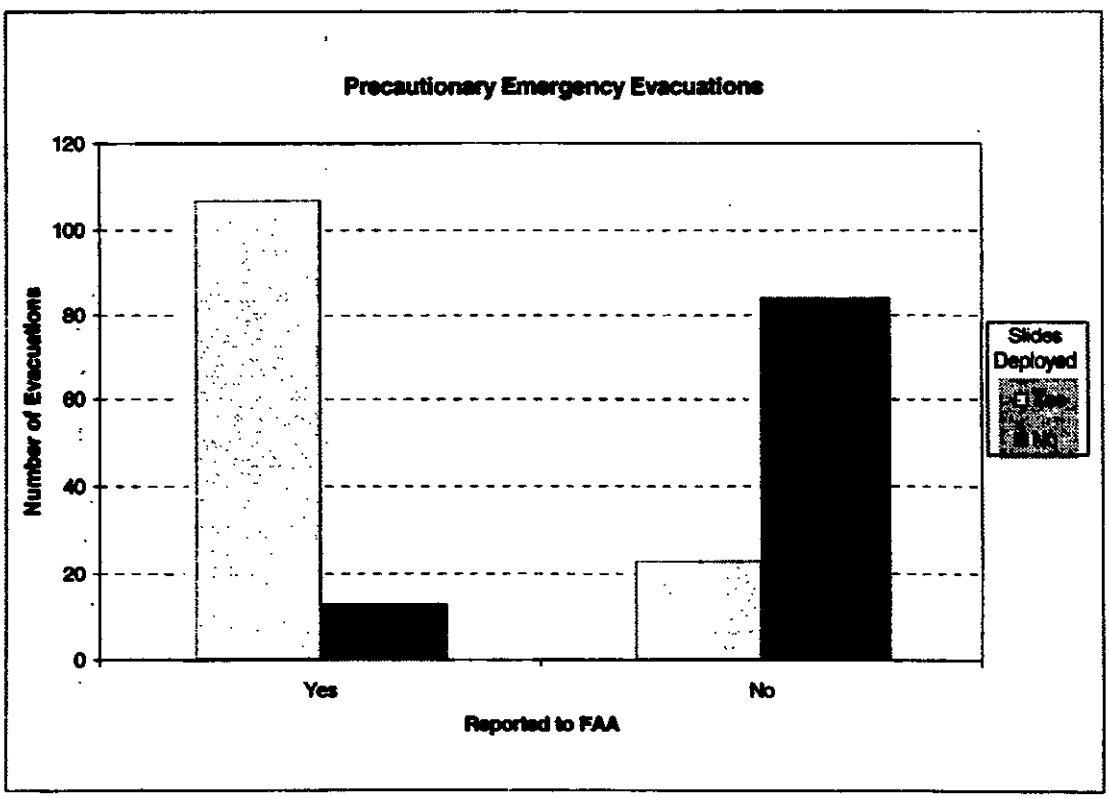

Figure 2. FAA AIDS reporting status when information about slide deployment is known.

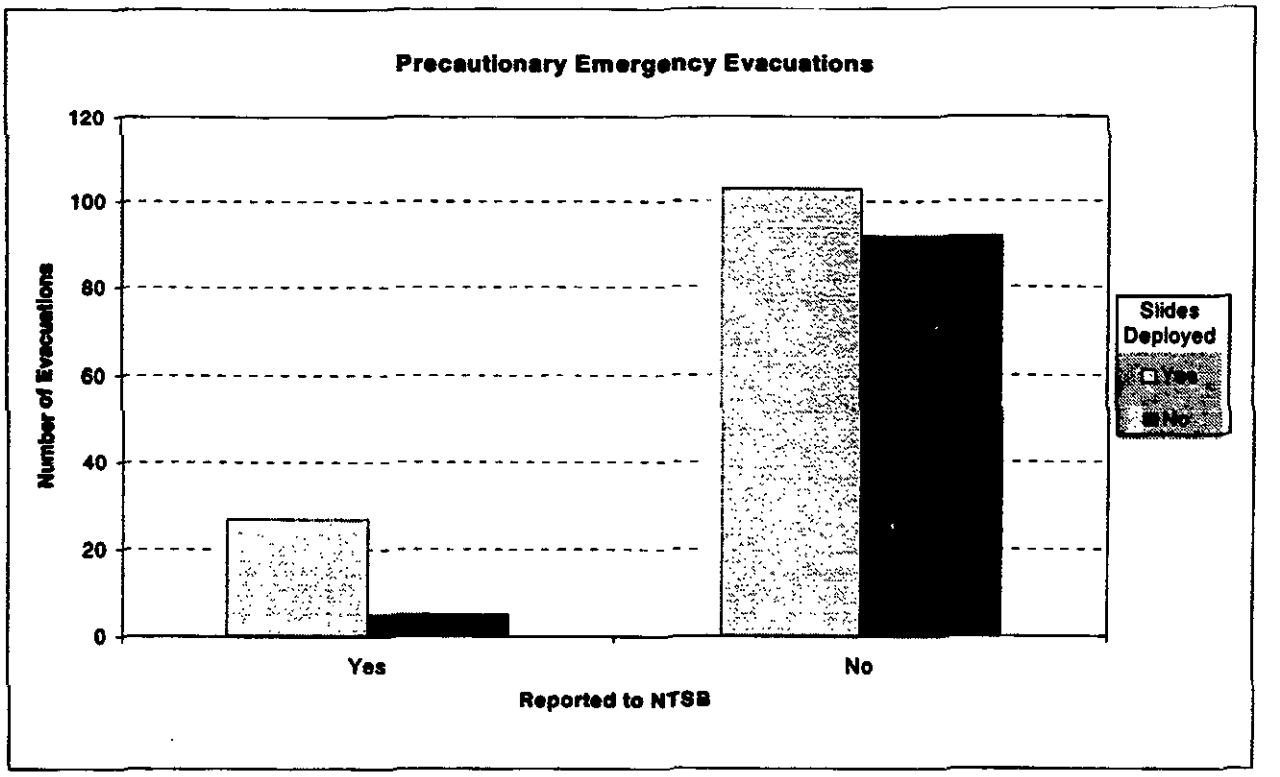

Figure 3. NTSB data system reporting status when information about slide deployment is known.

The NASA ASRS database contains 67, or 12.9%, of the 519 incidents cited in Appendix A. Of the incidents for which escape slide deployment data are available, the ASRS database contains data on 26, or 20%, of the 130 incidents.

News media accounts were identified for 53, or 10.2%, of the 519 incidents in Appendix A, including information on 29, or 22.3%, of those incidents for which escape slide deployment information is known. Litigation data were located for 4.8% of the 519 incidents, including 15.4% of the incidents where escape slide deployment status is known.

Injury Data. The number of persons who were reported as injured, or who claimed to be injured, was 898, or 101 injuries per year for the duration of the study. Of those, 610 passengers were injured while using the emergency escape slides, whereas 77 were injured when not using escape slides. It could not be determined how 211 passengers had been injured. Additional detailed data for the period of 1991 through 1993 allowed a more thorough examination of 250 passenger injury claims. Of these, 185 of the claims had supporting records provided by airlines insurance carriers and claims managers. Demographically, the claimants were comprised of 44.4% males, having a median age of 41 years, and 55.6% females, having a median age of 48 years. For both men and women, 29.8% were 60 years of age, or older.

Cost Data. The recommendation developed in Bulletin APO-90-1 by the Office of Aviation Policy and Plans (FAA, 1990) applies an average cost factor of $640,000 for a serious injury. The current study used airline and insurance company definitions in which serious injuries are those with losses of $50,000 or more, substantial injuries as those with losses of $10,000 to $49,999, and minor injuries as those with claimed losses under $10,000. Applying this formula to 31 complete records taken from the 185 injuries analyzed more fully, and extrapolating those results to the 101 average PEEvac-related injuries per annum for the entire study period, produces an estimated annual passenger injury cost of $8.54 million.

The average actual monetary claim across all injuries was $551,507, as revealed by airline-supplied data. This amount excludes 2 claims, 1 for $5.0 million and another for $10.0 million, which were considered exorbitant and omitted from the analysis.

Administrative costs for minor claims were estimated by the airlines to average $1,000 per injury claim, rising to $2,500 for each substantial injury claim. Administrative costs for serious injuries averaged $25,000, without litigation, and $75,000 if

litigation occurred. A total of 38.8% of the serious claims was litigated. When applied to the 101 average PEEvac-related injuries per annum in this study, administrative costs associated with processing injury claims totaled $1.83 million per year.

Airline data also indicated that the additional cost of replacing emergency escape systems, combined with the loss of revenue associated with PEEvac-related maintenance, was $1.0 million per year.

The total estimate direct costs for the 3-year period were $11.37 million per year. These costs were borne primarily by airlines. However, additional costs of PEEvacs were borne by the airports and emergency response units; these latter costs were not included.

DISCUSSION

The unique reliance on airport managers as a source of information permitted the collection of more detailed information about more events than would typically be possible. Allowing for airports that were not contacted, and airports that failed to respond to the survey, 56.6% of the PEEvacs identified in Appendix A were confirmed by airport management. This percentage is higher than corresponding percentages for the FAA and NTSB, suggesting that airport managers should be the primary source of PEEvac data. However, airport management cannot be relied upon exclusively to report all precautionary evacuations. In many cases, airport managers do not have easy access to information about emergency evacuations that have taken place on their airports in past years, nor do they possess the more detailed injury and monetary cost data possessed by the airline, insurance, and legal entities. This situation makes better coordination of incident data sources necessary.

The use of litigation databases was used to advantage to identify precautionary evacuations and to collect injury and cost data. Unfortunately, these databases were also of limited value, since litigation associated with emergency evacuations is almost always settled out of court and frequently includes an agreement by all parties not to disclose publicly any information related to the case(s). As a result, such information on passenger injuries and claims is removed from public purview.

The use of the news media as a source of information about precautionary emergency evacuations was similarly of limited value, as only about 10% of the events were found in the various news media databases. This is a reflection of the sensitive public relations nature of emergency evacuations. Airline and airport personnel seek to avoid substantial news media awareness, or other forms of public disclosure, related to emergency evacuation incidents. For example, many airport representatives contacted during this study denied that PEEvacs had even taken place at their airports, although records from the C-F-R units at those same airports contained information about their responses to the PEEvacs. This type of situation makes data collection and information management more complicated.

As the current study makes clear, the frequency of precautionary emergency evacuations has been quite high (4.9 per month or once every 5 to 6 days), despite the low public visibility associated with these incidents. The costs in terms of injuries to air travelers and economic loss to airlines and airports are far from insignificant. The development of preventative and mitigative strategies to address PEEvacs requires much better data than are readily available, illustrating the need for upgraded information management systems and research dedicated to minimizing these events and improving emergency evacuation outcomes, whenever these events must occur.

REFERENCES

Administrator's Daily Bulletin, Federal Aviation Administration, Washington, DC.

Code of Federal Regulations, Title 14, Aeronautics and Space, Vol.1, 1996.

Hynes, M. *Non Crash-Related Emergency Evacuations*, 3rd Annual Aviation Disaster Managemenr Symposium, Silver Springs, MD, 1994.

Hynes, M. *Management's Role In Aire Carrier Non Crash-Related Emergency Evacuation Events and Preventing Injuries From Them*, Jerome Lederer Colloquim, New York, NY, 1997.

Office of Aviation Policy and Plans, *Treatment of the Value of Life and Injury in Economic Analyses*, FAA-APO-90-1, Federal Aviation Administration, Washington, DC, October 1990.

WESTLAW® Computer-Assisted Legal Research Service, West Publishing Co., St. Paul, MN.

APPENDIX A

Parts 121 and 135 Precautionary Emergency Evacuations

Data Source Codes:

A = ARSA (NASA) Reports
A1 = 11/19/93 Report No. 3223
A2 = 04/01/96 Report No. 4412
A3 = 12/12/96Report No. 4704

D = Direct contact with airports
D = 1993, 1994 & 1995 contacts
D3 = 1996 contacts
DN = Not reported by airport
DNC = No contact with airport
DNR = No response from airport

FAA = FAA DATA
F1 = 03/24/93 Report No. P3-03-0206
F2 = 03/10/95 Misc. data at FAA/CAMI
F3 = 04/04/96 Report No. PT6-03-053
F4 = 01/28/97 Report No. AFS624/HH

L = Litigation Data
L1 = WESTLAW
L2 = Airline data

M = Media Data
M = Newspapers
M1 = *Aviation Safety Week*

N = NTSB Reports
N1 = 06/24/92 Report
N2 = 05/11/93 Report
N3 = 12/24/96 Report

Types Of Aircraft - Crew Size And Passenger Loads:

WIDE BODY (Avg. crew 3+10 & 315 PAX)

A300	Airbus Industrie	3+8	/250
A310	Airbus Industrie	2+10	/250
A330	Airbus Industrie	2+10	/300
A340	Airbus Industrie	2+10	/325
B747	Boeing	3+10	/400
B767	Boeing	2+9	/250
B777	Boeing	2+9	/350
DC10	Douglas	3+10	/325
L1011	Lockheed	3+8	/325
MD11	McDonnell Douglas	2+10	/350

LARGE AIRCRAFT (Avg. crew 2+5 & 156 PAX)

A320	Airbus Industrie	2+6	/150
B111	British Aerospace	3+5	/150
B727	Boeing	3+5	/145
B737	Boeing	2+3	/130
B757	Boeing	2+6	/185
DC8	Douglas	3+6	/175
DC9	Douglas	2+3	/110
MD80	McDonnell Douglas	2+4	/155
MD88	McDonnell Douglas	2+4	/155
MD90	McDonnell Douglas	2+4	/170

SMALLER AIRCRAFT (Avg. crew 2+1 & 47 PAX)

		PAX
ATP	Bae (England)	60
AT42	AIR (France/Italy)	50
AT72	AIR (France/Italy)	70
B146	BAe (England)	112
B748	BAe (England)	50
C100	Bombardier (Canada)	50
C200	Bombardier (Canada)	50
C212	CASA (Spain)	26
C235	CASA (Spain)	44
C440	Convair	44
C580	Convair	58
C600	Convair	60
CL60	Canadair	60
D228	Dornier (Germany)	19
D328	Dornier (Germany)	32
DHC6	DeHaviland (Canada)	50
DHC7	DeHaviland (Canada)	50
DHC8	DeHaviland (Canada)	50
E110	Embraer (Brazil)	19
E120	Embraer (Brazil)	30
E145	Embraer (Brazil)	50
F27	Fairchild (Fokker)	40
F28	Fokker (Netherlands)	30
F50	Fokker (Netherlands)	55
F70	Fokker (Netherlands)	70
F100	Fokker (Netherlands)	100
I202	IAI (Israel)	30
JT31	(also 32, England/France	19
JT41	England/France	30
LTT	(NASA 14,501-30,000 lbs)	50
M23	Fairchild Metro	19
M404	Martin	44
MDT	(NASA 30,001-60,000 lbs)	50
N250	IPTN (Indonesia)	65
RJ70	France/England/Italy	70
RJ85	France/England/Italy	90
R100	AIR (France/Italy)	100
S226	Swearingen/Fairchild	27
S227	Swearingen/Fairchild	27
S340	SAAB (Sweden)	35
S2000	SAAB (Sweden)	55
S340	Shorts (England)	30
S360	Shorts (England)	36
99	Raytheon/Beech	15
200	Raytheon/Beech	19
1900	Raytheon/Beech	19
2000	SAAB Sweden)	55

PARTS 121 AND 135 PRECAUTIONARY EMERGENCY EVACUATIONS

DATE	AIR PORT	TYPE A/C	AIR-LINE	FAR PART	CREW & PAX	INJURY	Total	SLIDES USED?	WHY EVACUATED AND REMARKS	DATA SOURCES
2/2/1988	FYV	S340	EXA	135	24	E	3	N/A	"ENG FAIL, FIRE IN ENG, EVAC"	"DNC,F4"
2/3/1988	BNA	DC9	AAL	121	127		2	YES	CARGO FIRE	"D,F2,M,N1"
3/20/1988	PDX	B727	DAL	121	78		0	?	LT MAIN NO XTND	"DN,F1,F2"
3/27/1988	DTW	B727	NWA	121	155		24	YES	"APU BACKFIRE, PAX & FA PANIC"	"A1,D3,F1,F2,N2"
3/30/1988	LGA	B737	AAL	121	142		2	YES	BOMB THREAT	"DNR,F2"
4/7/1988	LAS	B737	SWA	121	123		5	YES	"ENGINE FIRE, JETWAY & SLIDES USED"	"D,F1,F2"
4/10/1988	ACY	F27	BEX	121	22		2	N/A	JMPD CHOCKS ON ENG STRT HIT APU	"DN,F1"
4/15/1988	SEA	F27	HRA	135	14		3	N/A	FIRE IN RT ENG	"D,F1"
4/17/1988	CLE	B737	CAL	121	99		4	YES	SMOKE IN CABIN	"DN,F2"
5/11/1988	STL	DC9	TWA	121	46		0	?	"CABIN SMOKE, OIL IN BLEED AIR"	"DN,F1"
5/21/1988	DFW	DC10	AAL	121	254		6	YES	"FLPS LT & WARN, ABORTED TAKEOFF"	"D,F1,F2"
5/24/1988	MSY	B737	TACA	121	41		1	?	"ENG FAIL, EMERG LDNG ON LEVEE"	D
6/12/1988	SEA	B727	ALA	121	82		4	?	"WENT OFF RWY, REVERSER PROBLEM"	"DN,F1,F2"
7/10/1988	EWR	B737	CAL	121	102		0	YES	SMOKE IN COCKPIT (LEFT CHUTE)	"DN,F2"
7/14/1988	ACY	B727	GULF	121	131		0	NO	"FUEL TRUCK FIRE, A/C STAIRS USED"	"DN,F1"
7/20/1988	ORD	F27	?	135	13		0	N/A	SMOKE IN COCKPIT	D
7/23/1988	ORD	DC9	?	121	60		0	?	TWO FLAT TIRES	D
7/27/1988	ANC	S227	PNA	135	9	E	0	?	OVERHEAT LITE FOR LFT WHEEL WELL	"DNC,F4"
8/8/1988	STL	B727	TWA	121	134		0	?	"APU SMOKE, PAX START/PANICKED"	"A1,DN,F1,F2"
8/9/1988	STL	S226	AMW	135	9	E	0	N/A	"RT ENG CHIP DETECTOR ON, IN CLIMB"	"DN,F4"
8/10/1988	LIT	B737	UAL	121	102		10	YES	"NR1 ENG FAIL, ABORT TAKEOFF"	"D,F1,F2"
8/13/1988	HTS	DC9	AAA	121	67	E	0	?	LT ENG FIRE ENROUTE PIT/LOU	"DNC,F2"
8/16/1988	CLE	S226	BRT	135	9	E	2	N/A	"PROP GOV LINK SEP ON TO, RAN OFF RWY"	"DN,F4"
8/22/1988	LAS	B737	AAA	121	126		6	?	"RT MAIN GR DR, RT MAIN TIRES"	"DN,F2"
8/27/1988	ORD	B727	TWA	121	167		7	YES	NO GEAR	"DN,F2"
9/11/1988	ORD	AT42	?	135	23		0	N/A	FLAT TIRE	D
9/12/1988	DEN	DC10	UAL	121	207		1	YES	"REV NO DEPLOY, MAINTENANCE"	"A1,DN,F1,F2"
9/14/1988	MEM	S340	EXA	135	24	E	0	?	SMOKE FROM CABIN FLOOR	"DN,F4"
9/21/1988	DFW	B727	AAL	121	88		7	YES	"LT GR NO XTND, FWD CHUTES"	"DN,F1,F2"
10/1/1988	LAX	LRG	?	121	100	E	U	?	APU START TORCH PAX START DAY UNKN	"A1,DN"
10/9/1988	IAH	AT42	?	121	41		0	N/A	NR2 ENG FIRE	"DN,F1"
10/24/1988	DFW	E110	ASE	135	14	E	0	N/A	FUMES IN CABIN	"DN,F4"
10/24/1988	DTW	B727	NWA	121	81		0	NO	"APU EXH FIRE, PAX STARTED EVAC"	"A1,D3,F1,F2"
10/30/1988	MSY	B747	AIB	121	233		0	?	"BOMB THREAT, NO BOMB"	D
11/1/1988	MSP	LRG	?	121	100	E	0	NO	"ABORTED TO, ENG FAIL"	"A1,DN"
11/10/1988	MKE	JT31	EXA	135	14	E	0	?	LOST RT MAIN WHEEL ON TO	"DNC,F4"
11/16/1988	ORD	AT42	?	135	46		0	N/A	ENGINE FIRE	D
12/29/1988	RIC	MD80	AAL	121	132		0	YES	BOMB THREAT	"DN,F2"
1/17/1989	LAX	S227	SKA	135	9	E	1	N/A	GAS TRUCK COLL WITH A/C	"DN,F4"
1/20/1989	7V1	C440	APA	121	27		5	N/A	"RT ENG PWR LOSS, LT ENG SHUT DOWN"	"DN,F1"
1/20/1989	ORD	B737	?	121	27		0	?	ENGINE FELL OFF ON TO	D
1/22/1989	JFK	B757	AAA	121	101		0	YES	"APU FIRE, LOOK AT 01/01/89"	"A1,DN,F2"
2/1/1989	PVD	LRG	?	121	100	E	U	?	"SUSPICIOUS PKG, DAY UNKN"	"A1,DN"
2/5/1989	ORD	S360	?	135	14		0	N/A	LEFT MAIN GEAR PROBLEM	D
2/21/1989	IAH	DC9	DAL	121	49		0	?	NR1 ENG FAILURE	"DN,F1"
2/21/1989	SBN	S227	COM	135	9	E	0	N/A	SMOKE IN CABIN	"DNC,F4"
2/22/1989	ORD	B727	?	121	102		0	?	MAIN GEAR PROB	D
3/10/1989	RSW	B111	BNF	121	47		0	N/A	FUEL ODOR IN CABIN	"DNC,F1"
3/14/1989	GVT	B727	DAL	121	98		7	YES	"FIRE WARN NR2, NO FIRE"	"D,F1"
4/1/1989	FAY	B737	AAA	121	100	E	3	YES	"SMOKE IN CABIN, DAY UNKN"	"A1,D"
4/3/1989	LAX	B767	PDT	121	218		5	YES	UNAUTH ACC BOMB?	"DN,F1"
4/23/1989	FAY	B727	PDT	121	99	E	2	?	"SMOKE, APU"	"DN,F2"

DATE	AIR PORT	TYPE A/C	AIR-LINE	FAR PART	CREW & PAX	INJURY	Total	SLIDES USED?	WHY EVACUATED AND REMARKS	DATA SOURCES
5/5/1989	BGM	1900	PAC	121	10		0	N/A	FIRE WARNING	"DN,F1"
5/16/1989	ORD	B737	?	121	104		0	?	BLOWN TIRE	D
5/18/1989	MWA	S226	AMW	135	9	E	0	N/A	"LT PROP CTRL STRIPPED, RAN OFF RWY"	"DNC,F4"
5/24/1989	ORD	DC10	?	121	202	E	0	?	RAN OFF ON GRASS	D
5/28/1989	DEN	MD88	CAL	121	50		7	YES	RT L/G FAIL	"DN,F1,F2"
6/4/1989	LAX	C212	UALX	135	10		0	N/A	FIRE WARNING LIGHT	D
6/18/1989	FLL	B737	PDT	121	102		6	?	"APU FIRE WARN, NO FIRE"	"A1,DN,F1,F2"
6/26/1989	BWI	JT31	JSI	135	14	E	0	N/A	"SPARKS/SMOKE PANEL BEHIND PLT, EVAC"	"DN,F4"
7/2/1989	ILM	B737	PDT	121	82	E	0	YES	RT MAIN TIRE	"DN,F2"
7/5/1989	ORD	S360	?	135	34		0	N/A	FLAT TIRE	D
7/9/1989	ORD	B747	?	121	218		0	?	FLAT TIRE	D
8/2/1989	GSO	B737	PDT	121	106		0	YES	GR JAM UP	"DN,F1,F2"
8/6/1989	SFO	B757	NWA	121	184		2	YES	FIRE WARN	"D,F2"
8/17/1989	CLE	E120	BRT	135	14	E	0	N/A	SMOKE IN CABIN	"DN,F4"
9/5/1989	MCI	S226	AMW	135	9	E	0	N/A	LANDED GEAR UP	"DN,F4"
9/12/1989	ORD	DC9	AAL	121	110		2	YES	"HYD SYS FAIL, LEFT RWY"	"DN,F1"
9/29/1989	SFO	B747	UAL	121	350		0	NO	LOST WHEEL ON LANDING	D
10/1/1989	PHL	MDT	?	121	50	E	U	?	"APU FIRE WARN, DAY UNKN"	"A1,DN"
10/1/1989	LGA	LRG	?	121	100	E	U	?	"APU TORCH, DAY UNKN"	"A1,DNR"
10/7/1989	ORD	DC9	AAL	121	52		0	YES	SMOKE LT GR	"A1,DN,F1,F2"
10/14/1989	SLC	B727	DAL	121	19		2	?	"O2 SERV FIRE, PREBOARDING"	"D,M,N1"
10/15/1989	MEM	S340	EXA	121	22		0	N/A	"SMOKE IN CABIN, BROKEN FREON LINE"	"A1,DN,F1"
10/17/1989	08V	DC9	NWA	121	104		0	YES	"OVERSHOT RWY, WRONG APT"	"DN,F1,F2"
10/19/1989	FYV	C580	SAP	121	41		0	N/A	SMOKE	"DNC,F1"
10/20/1989	PHX	B727	DAL	121	99	E	1	YES	"FIRE, HYD LINE"	"DN,F2"
10/27/1989	RAP	B737	UAL	121	40		0	YES	"SMOKE IN CABIN, NO FIRE"	"DN,F1,F2"
10/31/1989	SEA	B727	NWA	121	74		0	YES	"APU FIRE, SLIDE MALF, PAX STARTED"	"A1,DN,F1"
11/3/1989	MEI	S340	EXA	121	18		0	N/A	SMOKE IN COCKPIT	"DNC,F1"
11/15/1989	PAH	JT31	EXA	135	14	E	0	N/A	"REAR CARGO SMOKE LIGHT,EVAC"	"DNC,F4"
11/20/1989	BOS	A300	AAL	121	169		6	?	"SMOKE IND LT, NO FIRE "	"D,F1,M"
11/27/1989	LAX	B727	XP1	121	128		3	?	"APU SMOKE, NO FIRE ONLY 18 EVAC"	D
11/29/1989	ATL	B727	EAL	121	53		0	YES	RT MAIN GEAR	"DN,F2,M1"
12/1/1989	CVG	S227	COM	135	9	E	0	N/A	"SMOKE IN CABIN, EVAC"	"DN,F4"
12/2/1989	MIA	B727	EAL	121	63		0	YES	SMOKE SMELL (CHUTE & STAIRS)	"DN,F2"
12/29/1989	MCI	S226	AMW	135	9	E	0	N/A	LANDED W/ GEAR UP	"DN,F4"
12/30/1989	MSL	JT31	EXA	135	14	E	0	N/A	"FT ENG FIRE WARN, EVAC"	"DNC,F4"
12/30/1989	TUS	B737	AWA	121	130		10	YES	"FIRE IN WHL WELL, ELEC/HYD FIRE"	"D3,F1,F2,M1"
1/1/1990	TYS	LRG	?	121	100	E	U	NO	"TIRE, AIR STAIR,DAY UNKN"	"A1,DN"
1/2/1990	BWI	DC10	AAL	121	259		10	YES	SMOKE IN COCKPT	"D,F2,M1"
1/10/1990	BMI	S360	SIM	121	14		0	N/A	SMOKE WARNING CARGO BAY	"DNC,F1"
1/28/1990	TPA	B727	DAL	121	130		1	YES	FIRE	"A1,D,F2"
1/31/1990	ORD	B767	AAA	121	117		1	YES	SMOKE IN COCKPT	"DN,F2"
1/31/1990	SDF	DC9	EAL	121	73		2	YES	"LT MG TIRE FIRE, TOWER ADVISED"	"D,F1,F2,M1"
2/18/1990	LAX	L1011	TWA	121	181		5	YES	FIRE LT #2ENG	"A1,D,F2"
3/10/1990	BWI	B737	AAA	121	116		U	YES	"PT ELEC FAIL, SMOKE"	"DN,F1,F2"
3/13/1990	ATL	DC9	EAL	121	57		0	YES	LOSS HYD PRESS	"DN,F1,F2"
3/17/1990	ICT	B737	CAL	121	130		2	?	"RT ENG FAIL, ABORTED TAKE OFF"	"A1,DNR,F1,F2,M1"
3/17/1990	JFK	AT42	CMD	121	45		0	N/A	SMOKE & FUMES IN CABIN	"DN,F1"
3/26/1990	BOS	L1011	TWA	121	175		6	YES	"FIRE N2&3 ENG, ABORTED TAKEOFF"	"A1,DN,F1,F2,M"
4/2/1990	FSM	JT31	EXA	135	14	E	0	N/A	"LFT ENG FIRE WARN, EVAC"	"DNC,F4"
4/2/1990	ORD	B727	?	121	99	E	0	?	FLAT TIRE	D
4/9/1990	ORD	B146	?	135	100		0	N/A	FLAT TIRE	D
4/10/1990	ORD	DC10	?	121	151		0	?	FLAT TIRE	D
4/15/1990	PIT	DC9	AAA	121	59		0	YES	"CABIN SMOKE, NO FIRE"	"DN,F1,F2"

DATE	AIR PORT	TYPE A/C	AIR-LINE	FAR PART	CREW & PAX	INJURY	Total	SLIDES USED?	WHY EVACUATED AND REMARKS	DATA SOURCES
4/20/1990	ORD	B727	?	121	99	E	0	?	FLAT TIRE	D
4/20/1990	MSP	JT31	EXA	135	14	E	0	N/A	NO NOSE GEAR DOWN LIGHT	"DN,F4"
5/8/1990	FAT	S227	SKA	135	9	E	1	N/A	"CP/P TURN OFF FUEL,FIRE ON RESTART"	"DNC,F4"
5/20/1990	ORD	B737	?	121	81		0	?	TIRE/HYD FAIL	D
5/24/1990	ATL	DC9	EAL	121	66		3	?	"SMOKE IN CABIN, APU FUEL LINE"	"DN,F1"
6/3/1990	STL	MD80	TWA	121	144		0	?	WHL BRNG PROB	D
6/7/1990	ATL	DC9	EAL	121	96		0	YES	"BLOWN TIRE, LOOSE SLIDE"	"DN,F1,F2,M1"
6/8/1990	STL	ATP	AMW	135	39	E	0	N/A	HYD FAILURE	D
6/11/1990	CVG	B727	DAL	121	69		0	YES	SMOKE	"DN,F2"
6/15/1990	DAY	E110	COM	135	14	E	0	N/A	"RT ENG OIL PRESS,FUEL LEAK,EMERG LDG"	"DN,F4"
6/21/1990	ATL	DC9	EAL	121	67	E	0	?	RT MAIN LNDG GEAR FAILURE ON TO	"DN,M1"
6/21/1990	CHS	B727	AAA	121	120		4	YES	"ENG FIRE WARN N2, NO FIRE"	"DNR,F1,F2,M1"
7/1/1990	ORD	S360	?	135	32		0	N/A	FLAT TIRE	D
7/1/1990	DEN	WDB	?	121	202	E	U	NO	"TO ABORTED,ENG EXPL W/VIBE & YAW"	"A1,DN"
7/4/1990	DEN	A300	CAL	121	179	E	0	?	ABORTED TO	"DN,M1"
7/6/1990	ORD	B146	?	135	79		0	N/A	FLAT TIRE	D
7/13/1990	ORD	B727	?	121	72		0	?	"LT MAIN GEAR, DOOR FAILURE"	D
7/13/1990	ORD	B146	?	135	104		0	N/A	FLAT TIRE	D
7/21/1990	ORD	S360	?	135	16		0	N/A	FLAT LEFT TIRE	D
7/22/1990	ISO	B737	AAA	121	27		2	YES	"NOSE GR FAILED, ABORTED TAKE OFF"	"D,F1"
7/25/1990	ORD	S360	?	135	33		0	N/A	FLAT TIRE	D
7/29/1990	JFK	DHC7	PAE	135	44		0	N/A	NOSE GEAR COLLAPSE	D
8/1/1990	LAX	B747	UAL	121	247	E	U	?	"PAX INJURIES, DATE UNKN"	"DN,M"
8/2/1990	MEM	B727	FDX	121	99	E	2	YES	APU FIRE	"DN,F1"
8/12/1990	BZN	B727	CAL	121	157		2	YES	"LOST FWR ENG, NR3 FIRE LIGHT"	"D,F1,F2"
8/21/1990	BWI	JT31	JSI	135	14	E	0	N/A	"SMOKE IN CABIN, EVAC"	"DN,F4"
8/21/1990	LAX	B737	UAL	121	107		0	?	RT MAIN N XTEND	"D,F1,M1"
8/23/1990	RIC	F27	AWS	135	17	E	0	N/A	SMOKE IN COCKPIT	D
8/27/1990	EWR	A300	CAL	121	160		26	YES	"ENGINE FIRE, L1 DOOR MALFUNCTION"	"A1,DN,F1,F2"
8/27/1990	LAX	B747	UAL	121	343		25	YES	NOSE NO XTEND	"D,F1,F2"
8/30/1990	MDW	D228	MWA	135	14	E	0	N/A	"OVERHEAD PANEL SMOKING,EVAC"	"DN,F4"
8/31/1990	EWR	DC9	AAA	121	42		1	YES	"PWR LOST N1 ENG, ABORT"	"A1,DN,F1,F2"
9/9/1990	ELK	DC9	AAL	121	129		0	YES	"POSS BOMB THRT, NO BOMB"	"DN,F1,F2"
9/9/1990	LGA	B727	TWA	121	153		4	YES	"APU TORCHING, PAX STARTED"	"DNR,F2,N2"
9/15/1990	GTF	B727	NWA	121	137		0	?	"ENG FIRE WARN, NO FIRE"	"DN,F1,F2"
9/19/1990	DEN	B737	UAL	121	96		2	?	A/C OVERHEATED	"A1,DN,F1"
9/28/1990	DTW	B727	NWA	121	132		6	YES	APU FIRE	"A1,D3,F1,F2,M1,N2"
10/11/1990	ORD	B727	?	121	82		0	?	NOSE GEAR PROB	D
10/15/1990	STL	DC9	TWA	121	52		0	YES	HI TMP LT TAIL	"DN,F1,F2"
10/16/1990	DFW	B727	DAL	121	156		2	YES	"PWR LOSS N2 ENG, ABRTD TO"	"A1,DN,F1,F2"
10/18/1990	SMF	1900	SSA	135	14	E	1	N/A	"ENG EXH STACK FIRE, EVAC"	"DNR,F4"
10/26/1990	DCA	DC9	NWA	121	67	E	U	?	"SMOKE IN CKPT, ELEC SMOKE"	"DN,F1"
10/30/1990	FAT	S227	WWA	135	9	E	0	N/A	FIRE WARN RT ENG	"DNC,F4"
11/2/1990	PIT	DC9	AAA	121	27		0	?	RT HYD SYS LOST	"DN,F1"
11/5/1990	ORD	S360	?	135	30		0	N/A	FLAT TIRE	D
11/24/1990	ORD	S360	?	135	25	E	0	N/A	"FLAT TIRE, LEFT MAIN"	D
12/5/1990	DTW	B727	NWA	121	75		2	NO	"FIRE RT WHEEL & APU, USED JETWAY"	"A1,DN,F1,F2"
12/26/1990	CAE	MD88	DAL	121	100		2	YES	FIRE NR2 ON START UP	"A1,D,F1,F2"
1/1/1991	ORD	S360	?	135	9		0	N/A	FLAT TIRE	D
1/3/1991	DSM	B727	AAL	121	104		3	YES	SMOKE IN CABIN	"D,F1,F2,L2"
1/6/1991	ORD	S360	?	135	25	E	0	N/A	FLAT NOSE TIRE	D
1/7/1991	MCI	B737	UAL	121	36		1	YES	"A/C OFF RWY, ICE ON TAKE OFF"	"DN,F1,F2,L2"
1/17/1991	SFO	JT32	WSA	121	14	E	0	N/A	CARGO FIRE WARN LIGHT	"DN,F1"
1/18/1991	ORD	S360	?	135	33		0	N/A	FLAT TIRE	D

DATE	AIR PORT	TYPE A/C	AIR-LINE	FAR PART	CREW & PAX	INJURY		SLIDES USED?	WHY EVACUATED AND REMARKS	DATA SOURCES
							Total			
1/21/1991	MSP	B727	NWA	121	44		0	YES	"ENG. FIRE, STAIRS & 1L CHUTE"	"DN,F2"
1/21/1991	ORD	S360	?	135	5		0	N/A	FLAT LEFT MAIN TIRE	D
1/24/1991	ORD	AT42	?	135	21		0	N/A	RIGHT MAIN GEAR PROBLEM	D
1/27/1991	ORD	ATP	?	135	30		0	N/A	SMOKE IN COCKPIT	D
1/31/1991	ORD	S360	?	135	20		0	N/A	FLAT LEFT MAIN TIRE	D
1/31/1991	FLL	B727	AAA	121	86		5	YES	"ENGINE FIRE, NO FIRE"	"D,F1,F2"
2/1/1991	GSO	DC9	AAA	121	37		0	YES	FIRE BAG CPTMNT	"DN,F1"
2/3/1991	LAX	B727	DAL	121	137		0	?	"APU FLAME, NO FIRE"	"DN,F1"
2/3/1991	SFO	B737	UAL	121	113		0	YES	NO NOSE STEER	"D,F1"
2/13/1991	SFO	B747	UAL	121	298		0	?	"BOMB THREAT, NO BOMB"	"DN,F2"
3/6/1991	DEN	B727	AAA	121	114		0	YES	APU FIRE	"DN,F1,F2"
3/9/1991	PIT	F28	AAA	135	68	E	0	N/A	LEFT LAV SMOKE DET	"DN,F4"
3/12/1991	PBI	E110	COM	135	8		0	N/A	FLAT TIRE	D
3/17/1991	ICT	B737	CAL	121	137		2	?	RT ENG FAILURE	"DNR,F1"
3/17/1991	DFW	DC9	AAL	121	114		3	?	FUEL ODOR CBN	"DN,F1,F2"
4/5/1991	DEN	AT42	BRT	121	17		0	N/A	"LOST HYD SYS,SMOKE NR2 ENG"	"DN,F1"
4/9/1991	SEA	B737	UAL	121	33		0	YES	FIRE LT ENG	"DN,F2"
4/9/1991	DCA	DC9	NWA	121	104		0	?	BLOWN TIRES	"DN,F1,F2"
4/17/1991	ORD	B727	?	121	106		0	?	BLOWN TIRES	D
5/4/1991	EWR	B146	CAN	121	84		0	?	BLEW TIRES	"D,F2"
5/5/1991	ATL	MD88	DAL	121	102		30	YES	"COLL FIRE, STRUCK BY VEHICLE"	"D,F1,M1,N3,L2"
5/12/1991	BOS	DC9	CAL	121	123		2	?	"HOT BRAKES, MAIN RT GEAR"	D
6/12/1991	DEC	JT31	JS8	135	14	E	0	N/A	"RT ENG EGT PROBLEM, EVAC"	"DNC,F4"
6/14/1991	STL	B747	NWA	121	414		0	NO	"FUEL TRUCK FIRE, EVAC THRU JETWAY"	D
6/18/1991	JFK	B747	RAM	121	87		0	NO	"BRK RT GEAR, STAIRS & MOBILE LOUNGE"	D
7/1/1991	MCI	B727	UAL	121	35		0	NO	"OFF RWY @ T/O, A/C STAIRS USED EVAC"	D
7/1/1991	DEN	LRG	?	121	199	E	U	?	BLEW TIRE ON TO	"A1,DN"
7/1/1991	BUF	LRG	?	121	100	E	U	?	"FIRE # 1 ENG, DATE UNKN"	"A1,DNR"
7/1/1991	DFW	LRG	?	121	100	E	U	?	"LOUD BANG, TO ABORTED, DATE UNKN"	"A1,DN"
7/13/1991	LAX	DC10	AAL	121	225		12	YES	"ENG FIRE WARN, NO FIRE"	"D,F1,F2,M,M1"
7/17/1991	PIA	AT42	TST	121	21		0	N/A	ENG FAIL & FIRE	"DNC,F1,M1,N3"
7/26/1991	CVG	DC9	AAL	121	135		2	YES	"SMOKE AFT SECT, NO FIRE"	"A1,DN,F1,F2,L2"
7/28/1991	SFO	DC10	AAL	121	261		6	YES	"ENG FIRE WARN, NO FIRE"	"D,F1,L2,M"
8/9/1991	SLC	B737	DAL	121	52		2	YES	"CABIN SMOKE, ELEC SMOKE"	"D,F1,F2,L2"
8/12/1991	STL	JT32	TST	135	14	E	0	?	HYD PRESS SUPPLY PIPE FAILED	"DN,F4"
8/21/1991	SBP	JT32	WWA	135	14	E	0	N/A	"BAG POD SMOKE WARN LGT,EVAC"	"DNC,F4"
8/22/1991	SEA	B747	NWA	121	387		13	YES	"ENG FIRE #4, #5L SLIDE INOP"	"D,F1,F2"
8/26/1991	LYH	DHC8	HNA	121	30		0	N/A	NR1 FIRE WARN LIGHT	"DNC,F1"
9/1/1991	MDW	DC9	MWA	121	67	E	U	NO	"LT ENG FIRE, USED FRONT DOOR & STAIR"	"A1,DN,F2"
9/1/1991	DTW	LRG	?	121	100	E	U	?	"APU FLASH, PAX STARTED DAY UNKN"	"A1,DN"
9/7/1991	ORD	B747	?	121	225		U	NO	HAZARDOUS MATERIALS SPILL	D
9/12/1991	MSP	S227	MSA	135	9	E	0	N/A	"SMOKE IN CABIN, EVAC"	"DN,F4"
9/13/1991	CVG	S227	COM	135	9	E	0	N/A	SMOKE IN CABIN	"DN,F4"
9/14/1991	MKG	AT42	SIM	121	25		2	N/A	SMOKE IN CABIN	"DNC,F1,M1,N3"
9/20/1991	DEN	B727	CAL	121	127		0	NO	"STUCK GEAR, REAR STAIRS"	"DN,F2"
9/23/1991	ORD	S360	?	135	28		0	N/A	FLAT TIRE	D
9/28/1991	BOS	MD80	CAL	121	120		2	YES	SMOKE (STAIRS & CHUTES)	"A1,DN,F2,M1,N3"
10/3/1991	DFW	DC9	AAL	121	63		0	?	"ODOR IN CABIN, ELECTRICAL"	"DN,F1"
10/4/1991	STL	MD80	CAL	121	112		0	?	"TAILCONE SEPRATE, A/C TOWED"	D
10/8/1991	CVG	E120	COM	135	14	E	0	N/A	"ELEC SMOKE ODOR,EVAC"	"DN,F4"
10/16/1991	EWR	B737	AAL	121	109		8	?	"GRND COLLISION, WITH CAL"	"D,L2,M1"
10/16/1991	EWR	MD80	CAL	121	48		19	?	"GRND COLLISION, WITH AAL"	"D,M1"
10/24/1991	ORD	ATP	?	135	38		0	N/A	FIRE WARNING LIGHT	D
10/31/1991	?	MD11	?	121	199	E	U	YES	CALIF/MCDD @ CERT TEST-TWICE	M

DATE	AIR PORT	TYPE A/C	AIR-LINE	FAR PART	CREW & PAX	INJURY	Total	SLIDES USED?	WHY EVACUATED AND REMARKS	DATA SOURCES
11/10/1991	STL	B727	TWA	121	99	E	3	?	"APU TORCH, PAX PANIC"	"DN,F2"
11/14/1991	HNL	DC9	HAL	121	67	E	0	?	FLAMES & SMOKE LEFT GEAR AREA	"DN,F4"
11/18/1991	CMX	F27	MSA	121	18		0	N/A	"LT ENG FIRE, TO ABORTED"	"DNC,F1"
11/21/1991	LAX	B737	SWA	121	62		0	?	"BOMB THREAT, NO BOMB"	"DN,F1"
12/1/1991	DFW	WDB	?	121	202	E	U	?	"FUEL LEAK,LANDED AT ALTERNATE"	"A1,DN"
12/2/1991	EWR	B727	CAL	121	143		1	?	"APU TORCH, PAX STARTED"	"A1,DN,F2"
12/3/1991	OAK	B737	SWA	121	53		0	NO	A/C RAN OFF TWY ON TO	D3
12/21/1991	BNA	JT32	FGS	135	14	E	0	N/A	"CARGO POD SMOKE DET LIGHT,EVAC"	"DN,F4"
1/1/1992	DTW	SMT	?	121	19	E	U	N/A	STUCK IN SNOW ON TWY	"A2,DN"
1/1/1992	HSV	JT32	FGS	135	14	E	0	N/A	"SMOKE IN CABIN & COCKPIT,EVAC"	"DNC,F4"
1/1/1992	ONT	LTT	?	121	100	E	U	?	"SMOKE IN CABIN, LT ENG SHUTDOWN"	"A2,DN"
1/1/1992	MIA	LTT	?	121	100	E	U	?	"LT FIRE WARNING, FALSE, DAY UNKN"	"A2,DN"
1/1/1992	SYR	MLG	?	121	50	E	U	N0	SLIDES OFF ICY TWY	"A2,DN"
1/12/1992	BWI	DHC8	HNA	121	33		0	N/A	"ENGINE FIRE, PAX EVAC EMERG DOORS"	"D,F1"
1/13/1992	DCA	METL	AAAX	135	9		0	N/A	RAN OFF RWY	D
1/18/1992	ELM	DC9	AAA	121	41		2	?	"HARD LDG, WIND SHEAR-A/C SPLIT"	"D,F1,M1"
2/10/1992	SFO	B727	UAL	121	55		0	NO	"SMOKE, PAX PANIC EXIT WING"	"D,F2"
2/16/1992	LEX	JT31	JSI	135	14	E	0	N/A	A/C LEFT RWY ON LDNG	"DNC,F4"
2/22/1992	LGA	A320	NWA	121	134		4	YES	"SMOKE IN CABIN, NO FIRE"	"A1,DNR,F1,F2"
2/26/1992	DTW	DC9	NWA	121	45		1	YES	ODOR IN CABIN CHUTES & JETWAY	"A2,DN,F1,F2"
3/1/1992	PIT	WDB	?	121	202	E	U	?	ELEC SYS FAIL	"A1,DN"
3/3/1992	ORD	DC10	?	121	189		0	?	"BLOWN TIRES, THREE RT MAIN GEAR"	"D,M1"
3/14/1992	DFW	B737	DAL	121	68		0	?	"APU FIRE WARN, NO FIRE"	"A1,DN,F1"
3/19/1992	ORD	ATP	AWS	135	32		0	N/A	"SMOKE IN COCKPIT, OIL LEAK #1 ENG"	"D,F1"
3/20/1992	MLU	JT31	EXA	135	14	E	0	N/A	"POD SMOKE LIFHT ON IN FLT, EVAC"	"DNC,F4"
3/21/1992	ORD	DC10	?	121	230		0	?	"A/C OFF RWY, STUCK IN MUD"	D
3/22/1992	CVG	MD88	DAL	121	29		3	YES	"CABIN SMOKE, APU"	"D,F1,F2,L2"
3/28/1992	MCI	MD80	AAL	121	76		0	NO	"A/C BKD OFF PAVMNT,USED A/C STAIRS"	D
3/29/1992	BOS	B727	DAL	121	99	E	0	NO	"SMOKE COCKPIT, JETWAY & REAR STAIRS"	"A2,DN,F2"
4/12/1992	SFO	B747	UAL	121	377		9	?	"SMOKE, OIL IN APU DUCT"	"DN,F1"
4/13/1992	AZO	JT31	JSI	135	14	E	0	N/A	"STRUCK DEER ON LDNG, ENG FLAMES"	"DNC,F4"
4/14/1992	MEM	S340	NWAX	135	6		0	N/A	BLOWN TIRE	"A2,D"
4/15/1992	ORD	DHC8	?	135	34	E	0	N/A	"FIRE ON AIRCRAFT, BRAKE LINING"	D
4/15/1992	DBQ	S360	SIM	121	26		0	N/A	"LEFT TWY, SANK IN MUD"	"DNC,F1"
4/16/1992	JFK	L1011	DAL	121	175		7	?	FIRE NR2 & 3 ENGINES	"DN,F1,L2"
4/18/1992	CVG	S227	COM	135	9	E	0	N/A	"LOST OIL PRESS,FLAMES FRM AIR INTAKE"	"DN,F4"
4/21/1992	LGA	B727	AAA	121	44		0	YES	ENG FIRE NR1 ? LGA 04/01/92	"A1,DNR,F2"
4/22/1992	TPA	B727	AAL	121	142		9	YES	"HYD FAIL, FAA 04/22/93"	"D,F1,F2,L2"
5/7/1992	CLT	S360	CCA	121	19		0	N/A	RT ENG FIRE WARN	"DN,F1"
5/8/1992	RIC	B146	BEX	121	26		1	YES	ENG. FIRE	D
5/13/1992	LAX	B767	DAL	121	84		3	YES	"SMOKE IN CABIN, TAKE OFF ABORTED"	"D,F2,M1,L2"
5/19/1992	SFO	B737	SWA	121	82	E	2	YES	"BOMB, NO BOMB"	"DN,F2"
5/24/1992	MSY	B757	AAL	121	158		0	?	BOMB THREAT	"D,F2"
5/26/1992	DCA	DC9	AAA	121	67	E	U	NO	"ENG START/TORCH, STAIRS/BUS"	"DN,F2"
6/2/1992	ATL	L1011	DAL	121	186	E	1	?	"SMOKE IN CABIN,EVAC"	"DN,M1"
6/14/1992	PFN	B777	CAL	121	241	E	3	YES	"BOMB THREAT, NO BOMB"	"DN,F2"
7/16/1992	ORD	ATP	?	135	27		0	N/A	BRAKE FAILURE	D
7/19/1992	STL	DC9	TWA	121	70		0	?	"BLW RT GR 2 TRS, A/C TOWED"	D
7/24/1992	ORD	F100	?	135	89		0	N/A	LEFT MAIN BRAKES SPARKING	D
7/24/1992	ORD	S360	?	135	18		0	N/A	FLAT RIGHT MAIN TIRE	D
7/25/1992	ORD	S360	?	135	33		0	N/A	FLAT TIRE	D
8/1/1992	CLT	LTT	?	135	100	E	U	N/A	"CARGO SMOKE LIGHT, DAY UNKN"	"A2,DN"
8/3/1992	STL	B727	TWA	121	99	E	0	NO	"BLOWN TIRES, STAIRS/BUS"	"A2,DN,F2"
8/5/1992	RIC	B146	BEX	121	26		2	N/A	ENG FIRE WARNING	"DN,F1"

DATE	AIR PORT	TYPE A/C	AIR-LINE	FAR PART	CREW & PAX	INJURY		Total	SLIDES USED?	WHY EVACUATED AND REMARKS	DATA SOURCES
8/10/1992	ORD	DC9	?	121	94			0	?	NOSE GEAR STEERING FAILED	D
8/10/1992	ORD	S360	?	135	20			0	N/A	RAN OFF TWY	D
8/19/1992	DCA	M23	AAAX	135	21			0	N/A	RAN OFF RWY	D
8/20/1992	ORD	B146	AWS	121	53			0	N/A	CRACKED HYD PRESS LINE	"DN,F1"
8/22/1992	DEN	MD80	CAL	121	146			0	?	"HOT BRAKE, BRAKE LOCKED"	D
8/23/1992	SDF	MD88	DAL	121	145			0	?	OFF WET RWY	"DN,F1"
8/23/1992	ORD	B146	?	135	45			0	N/A	SMOKE IN COCKPIT	D
8/26/1992	MIA	B737	CAR	121	94			3	YES	"SMOKE,EVAC"	"DN,F2,M1,N3"
8/27/1992	MLI	AT42	TST	121	37			0	N/A	"SMOKE & ALARMS, ABORTED TO"	"DNC,F1"
8/29/1992	ORD	S360	?	135	25			0	N/A	HYD FAILURE	D
8/29/1992	ORD	AT42	?	135	24			0	N/A	PAX DEPLANED & BUSSED TO TERMINAL	D
8/30/1992	BOS	DC9	PJX	121	161			0	?	TIRE FAILURE ON TO ROLL	"A1,DN,F1"
9/14/1992	ORH	DC9	AAA	121	72			0	?	"BLEW MAIN TIRES, ABORTED TAKE OFF"	"DN,F1"
9/27/1992	EFD	AT42	BRT	121	29			0	N/A	OIL PRESS LIGHT	"DNC,F1"
10/1/1992	ATL	MLG	?	121	50	E	U		?	"ELEC FAIL, BLOWN TIRES"	"A1,DN"
10/12/1992	PIT	B737	AAA	121	136			0	?	"ENG FAIL NR2, ABORTED TAKE OFF"	"A1,DN,F1,F2,M1"
10/17/1992	RIC	B737	AAA	121	24			0	NO	"SMOKNG STARTER, EXIT DOOR USED"	D
11/2/1992	ORD	B747	?	121	272			0	?	BLOWN TIRES	D
11/8/1992	JFK	B767	UAL	121	58			0	NO	"SUSPCT BOMB, STAIRS USED"	D
11/18/1992	DTW	S227	MSA	135	9	E		0	N/A	"SMOKE IN CABIN,EVAC"	"DN,F4"
11/27/1992	ORD	B737	DAL	121	123			11	NO	"APU SMOKE, PAX START"	"DN,F2,N3,L2"
12/30/1992	ORD	AT42	?	135	24			0	N/A	SMOKE IN #1 ENGINE	D
1/1/1993	OKC	B737	CAL	121	108			0	NO	"SLID OFF TWY, PORT AIR STAIRS USED"	D
1/2/1993	DEN	DC9	MDX	121	47			0	?	"OVERAN RWY, LOST PT OF ENG"	D
1/10/1993	DFW	DC9	AAL	121	89			5	YES	"SMOKE LT MN GR, NO FIRE "	"A2,DN,F2,F3,L2,M1,N3"
1/10/1993	DEN	MD80	CAL	121	106			4	YES	HARD LANDING	"DN,F2"
1/11/1993	RIW	1900	BRT	121	14	E		0	N/A	WHITEOUT OFF RWY HIT DITCH	"DNC,F3"
1/15/1993	BFL	B737	UAL	121	114			2	?	"SMOKE IN COCKPIT, NO FIRE"	"DNC,F1,F2,F3,L2"
1/20/1993	DSM	B727	AAL	121	99	E		0	?	"MISALIGN RWY, LOW RVR"	D
2/1/1993	IAH	B727	UTA	121	19			0	YES	"APU FIRE, SMOKE/NO FIRE"	"DN,F1,F2,F3"
2/10/1993	PBI	B737	UAL	121	103			0	?	JET FUEL LEAK	D
2/11/1993	DSM	DC9	TWA	121	67	E		0	?	"WENT OFF TWY, LOW RVR"	D
2/19/1993	DEN	B757	DAL	121	141			0	?	BOMB THREAT	D
2/19/1993	SJC	B737	DAL	121	61			0	?	BLOWN TIRE	"D,F3"
2/22/1993	BOS	S340	BEX	121	24	E		4	?	LANDED WITH NOSE GEAR RETRACTED	"DN,F3"
2/24/1993	ORD	B737	UAL	121	82	E		1	YES	"HOT START,PAX START"	"A1,DN,F2,F3,L2"
2/24/1993	FLL	B757	DAL	121	183			0	NO	"BLEW 4 MAIN TIRES,NOSE GEAR DAMAGE"	D3
3/1/1993	CLT	S360	AAX	121	36			0	NO	SMOKE IN COCKPIT	D3
3/13/1993	CLT	B737	AAA	121	131			0	NO	SKIDDED OFF TWY	D3
3/13/1993	ORD	F100	AAA	121	104			0	N/A	NOSE GEAR FAILURE	"D,F3"
3/25/1993	BNA	B737	SWA	121	125			0	YES	BOMB THREAT	"D,F2"
3/29/1993	SFO	A310	DAL	121	127			36	YES	"SMOKE IN CABIN, NO FIRE"	"A1,D,F2,F3,L2"
4/14/1993	DFW	DC10	AAL	121	202			70	YES	"HARD LNDG,LTNG STRK,1PAX BROKE NECK"	"A1,D,F2,L2,M,M1"
4/22/1993	DTW	A320	NWA	121	48			0	?	"OFF RWY, WET RWY"	"A1,DN,F3"
4/24/1993	SYR	S340	BEX	121	24	E		0	N/A	RT ENG MALFUNCTION	"DN,F3"
4/27/1993	DEN	MD80	CAL	121	121			6	YES	GEAR FAIL (CHUTES/BUS)	"DN,F2,M1,N3"
4/29/1993	CLE	B737	UAL	121	82	E	U		?	LOST WHEEL	"A1,DN"
5/7/1993	PIT	F28	AAA	121	68	E		0	N/A	LT GEAR CAME OFF ON ROLLOUT	"DN,F3"
5/24/1993	AZO	S360	SIM	121	30	E		0	N/A	"ORD APP LOST RADAR,CARGO SMOKE WARN"	"DNC,F3"
5/28/1993	ORD	S360	?	135	26			0	N/A	RT MAIN TIRE BLOWN	D
5/29/1993	ATL	L1011	DAL	121	76			3	YES	"SMOKE CABIN, NO FIRE"	"DN,F2,F3,L2"
6/8/1993	LAX	B757	UAL	121	197			0	NO	LW SLIDE DEPLOYED IN FLIGHT	"DN,N3"
6/10/1993	EKO	B737	TEM	121	82	E		0	?	NR1 ENG SMOKE	"DN,F3"
6/12/1993	LGA	A320	NWA	121	107	E		0	?	"FUMES COCKPIT, FAN MOTOR"	"DNR,F2"

DATE	AIR PORT	TYPE A/C	AIR-LINE	FAR PART	CREW & PAX	INJURY		SLIDES USED?	WHY EVACUATED AND REMARKS	DATA SOURCES
							Total			
6/14/1993	ACY	S360	AAA	121	21		0	N/A	"CARGO FIRE, NO FIRE"	D
6/18/1993	SAV	DC9	AAL	121	133		1	YES	FIRE LEFT ENG ON CLIMB	"DNC,F3,L2,N3"
7/11/1993	ORD	MD80	AAL	121	91	E	U	NO	TIRE MISSING	D3
7/18/1993	CLT	F28	AAA	121	64		0	NO	SMOKE IN COCKPIT	D3
7/25/1993	BOS	B727	AAA	121	41		0	NO	3 BLOWN TIRES	D
7/28/1993	ACY	B737	VAL	121	82	E	0	NO	"HYD FAILURE, AIRSTAIRS, BUS"	D
7/28/1993	ORD	B767	SWIS	121	140	E	U	NO	BOMB THREAT	D3
7/29/1993	ROA	B727	RYA	121	99	E	0	?	SMOKE RIGHT ENGINE	"DNC,F3"
8/4/1993	MCO	E120	COM	121	14	E	0	N/A	LEFT ENG DUCT LEAK	"DN,F3"
8/4/1993	SFO	DC10	UAL	121	156		U	YES	"SMOKE COCKPIT,AIRLINE REPORT 6 INJ"	"D,L2"
8/10/1993	BUF	B727	DAL	121	99	E	2	?	SMOKE IN CABIN	"DNR,F3,L2"
8/16/1993	DEN	B737	UAL	121	63		0	NO	BLOWN TIRES	D
8/27/1993	BOS	B747	ALI	121	383		0	NO	BOMB THREAT	D
9/1/1993	SPS	JT31	SIM	121	14	E	0	?	FIRE IN LEFT ENGINE	"DNC,F3"
9/12/1993	DEN	B727	UAL	121	146		1	YES	SMOKE COCKPIT	"D,F2,F3,L2"
9/16/1993	CLT	?	AAA	121	100	E	0	NO	FIRE ALARM IN ENGINE	D3
9/20/1993	ATL	L1011	DAL	121	186	E	2	YES	FUMES AIRCOND	"D,L2"
9/22/1993	ACY	AT42	CALX	135	33	E	0	N/A	SMOKE FROM WHEEL CHAIR	D
9/27/1993	BOS	B727	CAL	121	157		0	NO	MAIN GEAR SHEARED	D
9/28/1993	SAN	B757	UAL	121	169		16	YES	"FIRE NR1, EXT FIRE"	"D,F3,L2"
10/4/1993	DEN	MD80	DAL	121	127		3	YES	BLEW N2 ENGINE	"D,L2"
10/8/1993	BOS	B747	OLY	121	244		0	NO	MN GEAR FIRE	D
10/28/1993	BDR	S360	PAC	121	30	E	0	N/A	BAG COMP SMOKE LIGHT	"DNC,F3"
11/14/1993	JLN	JT32	EXA	121	14	E	0	N/A	NR1 ENG FIRE WARNING LIGHT	"DNC,F3"
12/31/1993	DEN	B737	UAL	121	111		0	NO	BLOWN TIRES	"D,F3"
1/1/1994	MIA	B767	UAL	121	169		0	YES	"PAX SAW FLAME, PANICKED,EVAC STARTED"	"DN,N3"
1/1/1994	ORD	B737	UAL	121	50		U	NO	HYD LEAD LT MAIN GEAR	D3
1/4/1994	CLT	F28	AAA	121	67		0	NO	BROKEN STEERING CABLE	D3
1/10/1994	DEN	MD80	CAL	121	104		3	YES	RT MAIN GEAR	"D,F3"
1/15/1994	BOS	S340	BEX	135	8		0	N/A	FIRE LIGHT IN CARGO COMPTMT	D
1/18/1994	CVG	MD88	DAL	121	40		0	NO	SLID OFF RWY	D
1/18/1994	BOS	S340	BEX	135	17		0	N/A	BOMB THREAT	D
1/19/1994	SBN	ATP	UFS	121	33		0	YES	APU FIRE	"DNC,F3,N3"
1/20/1994	BOS	DC9	MDC	135	24		0	NO	SMOKE	D
2/9/1994	ORD	B737	CAL	121	87		0	?	LEFT MAIN GEAR RETRACTED	D3
2/13/1994	SAV	DC9	AAA	121	81		3	YES	ENGINE FIRE	"DNC,F2,F3"
2/14/1994	OMA	F28	AAL	121	68	E	0	N/A	NR1 ENG FIRE	"DN,F3"
2/25/1994	CWA	ATP	UALX	121	18		2	YES	"ELEC FIRE, SMOKE IN COCKPIT"	"DNC,N3"
2/26/1994	ORF	B737	AAA	121	47		0	YES	BLOWN TIRE	"DN,F2,F3"
3/2/1994	LGA	MD80	CAL	121	116		7	?	ABORTED TAKEOFF	"DNR,N3"
3/2/1994	ATL	DC9	VUJ	121	85		2	YES	"FIRE NR2, NO FIRE"	"DN,F2,F3"
3/6/1994	IAH	AT42	CALX	135	46		0	N/A	FIRE WARNING LIGHT	D
3/15/1994	CVG	DC8	KAL	121	144	E	0	NO	"DOOR BLEW OUT, DECOMPRESSION"	"D,N3"
3/18/1994	UNV	JT32	ACA	121	14	E	0	N/A	RAN OFF RWY	"DNC,F2,F3"
3/22/1994	JFK	AT42	TWAX	121	45		2	N/A	"FIRE WARN, NO FIRE"	"D3,F2"
3/25/1994	LAS	E120	SKA	121	14	E	0	N/A	LEFT ENG FIRE ON TO	"DN,F3"
4/2/1994	MCO	B727	CAL	121	150		2	YES	LT GR NOT EXTND	"DN,F2,F3,N3"
4/12/1994	MLU	JT31	EXA	121	14	E	0	N/A	NR1 ENG FIRE WARNING	"DNC,F3"
4/17/1994	SEA	DC9	ALA	121	139		1	YES	SMOKE FROM LANDING GEAR	"D3,F3,M1"
4/17/1994	SFO	JT31	WSA	121	14	E	0	N/A	RT ENG FIRE	"DN,F3"
4/26/1994	MSP	JT31	NWA	121	14	E	0	N/A	ENG FIRE LIGHT	"D3,F3"
4/26/1994	HNL	B737	ALO	121	59		5	YES	SMOKE IN COCKPIT & CABIN	"DN,M1,N3"
5/1/1994	CLT	F100	AAA	121	94		1	YES	"SMOKE IN COCKPIT, NOSE GEAR FAIL"	"A2,D3,N3"
5/9/1994	DEN	B727	CAL	121	32		0	NO	RT MAIN GEAR	D

DATE	AIR PORT	TYPE A/C	AIR-LINE	FAR PART	CREW & PAX	INJURY	Total	SLIDES USED?	WHY EVACUATED AND REMARKS	DATA SOURCES
5/11/1994	LAF	DHC8	?	121	34	E	0	N/A	FIRE LIGHT ON	"DNC,F3"
5/24/1994	MEM	S340	EXA	121	24	E	0	N/A	SMOKE IN CABIN	"DN,F3"
5/25/1994	ORD	F28	AAL	121	68	E	3	N/A	FIRE ON GROUND	"DN,F3"
5/25/1994	EVV	JT32	TST	121	14	E	0	N/A	"FLAMES, SMOKE LEFT ENGINE"	"DNC,F3"
5/28/1994	ORD	MD80	AAL	121	90		U	YES	GROUND FIRE	D3
5/31/1994	MGM	S340	EXA	121	24	E	0	N/A	AVIONIC SMOKE LIGHT	"DNC,F3"
6/7/1994	BDL	1900	PAC	121	14	E	0	N/A	"RT ENG FIRE LT, NO FIRE"	"DNC,F3"
6/29/1994	BOS	MD80	CAL	121	91	E	0	?	BLEW RT TIRE	"DN,F2"
7/5/1994	GSO	MD80	DAL	121	93		1	NO	A/C RAN OFF RTWY	D3
7/22/1994	IAH	B737	CAL	121	82	E	0	?	LOST ELECTRONICS AND DC PWR	"DN,F3"
7/22/1994	DAY	S340	?	121	24	E	0	N/A	ENGINE FIRE LIGHT	"DN,F3"
7/31/1994	JFK	B747	TWA	121	257	E	0	?	FIRE LIGHT NR2 ENGINE	"DN,F3"
8/1/1994	IAD	JT32	?	121	14	E	0	?	"LOSS HYD PRESSURE, DAY UNKN"	"A2,DN"
8/5/1994	FAT	JT31	WSA	121	14	E	0	N/A	"SMOKE, FLAMES RIGHT ENGINE"	"DNC,F3"
8/5/1994	MSP	S340	?	121	24	E	0	N/A	CABIN SMOKE	"DN,F3"
8/7/1994	ESF	JT31	?	121	14	E	0	N/A	LEFT ENG FAILED ON CLIMBOUT	"DNC,F3"
8/7/1994	LAX	S227	SKA	121	9	E	0	N/A	LEFT ENG FIRE LIGHT	"DN,F3"
8/8/1994	MEM	S340	EXA	121	24	E	0	N/A	CARGO COMP SMOKE LIGHT	"DN,F3"
8/17/1994	PHL	S360	PAC	121	30	E	0	N/A	FIRE LIGHT RIGHT ENG	"DN,F3"
8/19/1994	ORD	MD11	ALI	121	267		0	NO	NOSE GEAR COLLAPSE	"D3,N3"
8/29/1994	MCO	MD80	VEN	121	152		0	?	BLEW TIRES	"DN,F2"
9/3/1994	SFO	E120	WSA	121	14	E	0	N/A	SMOKE IN COCKPIT	"DN,F3"
9/15/1994	FAT	JT31	WSA	121	14	E	0	N/A	FUEL LEAKED ON RAMP	"DNC,F3"
9/19/1994	IAD	JT41	ACA	121	21	E	0	N/A	"IRATE PAX, PROBABLE GUN (CIG LTR)"	"DN,F3"
10/1/1994	ORD	MLG	?	121	50	E	0	?	MAIN GEAR TIRE BLEW ON TO	"A2,DN"
10/5/1994	CVG	S340	COM	135	36		0	N/A	NO FLAP LANDING	D
11/2/1994	BOS	B747	BOA	121	257	E	0	NO	FIRE WARN LT	D
11/18/1994	DEN	B737	UAL	121	57		0	NO	MISS MAIN GEAR	D
11/19/1994	CVG	M23	DHL	135	4		0	N/A	SMOKE MAIN CAB IN AC&HEAT SYS	D
11/27/1994	CLE	B727	AAL	121	99	E	0	NO	TIRES BLEW OUT LT MAIN GEAR	D3
12/5/1994	BOS	S340	BEX	135	8		0	N/A	"FIRE ON AIRCRAFT, PORTABLE STAIRS"	D
12/12/1994	DFW	AT42	ASE	121	38		0	N/A	GENERATOR FAULT LIGHT	"DN,F3,N3"
12/12/1994	LBE	1900	MSA	135	14	E	0	N/A	"SMOKE IN COCKPIT,EVAC"	"DNC,F4"
12/23/1994	CLE	MD80	AAL	121	67		0	NO	SLID OFF PAVEMENT-WINTER CONDITIONS	D3
12/24/1994	LBE	1900	MSA	121	14	E	0	N/A	"FIRE ON LDNG,LIGHTS SHORTED"	"DNC,F3"
1/1/1995	MSN	MLG	?	121	50	E	U	?	INFLIGHT ENG FIRE	"A2,DNC"
1/8/1995	CLT	B737	AAA	121	14		0	NO	HYD INDICATOR	D3
1/11/1995	STL	MD80	TWA	121	66		0	NO	FLAT TIRES	D
1/17/1995	DFW	AT72	AALX	121	37		2	N/A	HOT BRAKE CAUTION LIGHT	"DN,N3"
1/30/1995	BNA	MD88	DAL	121	116		4	YES	FIRE IN TAIL	"A2,D3,F2,F3"
2/6/1995	BOS	S340	BEX	135	24	E	0	N/A	LEFT MAIN BRAKE FROZE	D
2/16/1995	BOS	B757	DAL	121	125	E	0	NO	BOMB THREAT	D
3/2/1995	OMA	B737	DAL	121	82	E	0	NO	FUEL SPILL	D3
3/3/1995	SLC	S227	SKA	135	18		0	NO	"A/C OFF RWY, POSS ENG FIRE"	D3
3/6/1995	ART	1900	MSA	121	14	E	0	N/A	SMOKE IN COCKPIT	"DNC,F3"
3/7/1995	STL	JT31	TWAX	135	18		0	N/A	ENG FIRE WARN LIGHT	D
3/9/1995	IAH	MD80	CAL	121	139		1	YES	SMOKE	"DN,F2"
3/9/1995	SFO	MD80	CAL	121	125		3	YES	SMOKE CABIN (F3 ON 03/10)	"D,F3"
3/11/1995	STL	DC9	TWA	121	67	E	0	NO	LEFT MAIN BRAKE LOCKED	D
3/17/1995	BOS	1900	BEX	135	14	E	0	N/A	SMOKE IN COCKPIT	D
3/23/1995	MSP	DC9	AAA	121	67	E	3	?	EXH PIPE FIRE ON START UP	"DN,F3"
4/2/1995	JFK	MD11	AAL	121	108		43	YES	FIRE N2 ENG	"A2,D3,F2,N3"
4/3/1995	DFW	B727	AERO	121	160		2	YES	FIRE WARNING N1 LFT ENG	"DN,F4,N3,"
4/4/1995	JFK	MD11	AAL	121	199	E	38	?	"ENG TAIL PIPE FIRE,EVAC"	"DN,M1"

DATE	AIR PORT	TYPE A/C	AIR-LINE	FAR PART	CREW & PAX	INJURY		SLIDES USED?	WHY EVACUATED AND REMARKS	DATA SOURCES
						E	Total			
4/8/1995	ORD	?	UAL	121	100		U	?	LFT OUTBOARD MAIN GEAR LOST TIRE	D3
4/11/1995	PVD	DC9	NWA	121	94		0	NO	FUEL LEAK	D
5/19/1995	BOS	DC9	AAA	121	94		U	NO	BLOWN TIRES	D
5/22/1995	PHL	JT31	UALX	135	18		0	N/A	SMOKE/FIRE FROM ENGINE	D
6/8/1995	ATL	DC9	VUJ	121	55		6	?	"FIRE, DIR DATE 06/10"	"D,F2,M1"
6/12/1995	ATL	B727	DAL	121	52		0	YES	SMOKE	"DN,F2"
6/20/1995	SLC	CL60	SKA	121	14	E	1	?	"MAIN TIRES BLEW, ABORTED TO"	"DN,F3"
6/29/1995	LGA	DC9	AAA	121	67	E	0	N0	"SMELLED SMOKE, USED AIR STAIRS"	"DNR,F3"
6/30/1995	BWI	MD80	TWA	121	132		0	YES	"CAPT EVAC, RT MAIN TIRE BLEW SMOKE"	"D,F3"
7/13/1995	ORD	B767	AAL	121	140	E	U	NO	RTO (ABORT)	D3
7/15/1995	FLL	B737	CAN	121	89		4	YES	SMOKE/FIRE	"DN,F2"
7/17/1995	ABQ	B737	SWA	121	82	E	0	YES	SMOKE IN FUSELAGE (POSSIBLE APU)	D3
7/17/1995	ABY	B737	SWA	121	82	E	0	YES	SMOKE	"DN,F2"
7/27/1995	SFO	MD80	ALA	121	120		0	?	"SMOKE CAB,CAB CREW TREATED FOR SMOKE"	"A2,D"
8/1/1995	STL	JT31	?	121	14	E	0	N/A	"BRAKE FIRE, ABORTED TO"	"A2,DN"
8/8/1995	MSP	S340	CASX	135	24	E	0	NO	SMOKE IN COCKPIT	D3
8/11/1995	BOS	S340	BEX	135	24	E	0	N/A	"RT MAIN BLOWN, PORTABLE STAIRS"	D
8/16/1995	MSY	B727	AAL	121	58		0	NO	LOSS OF FUEL IN FLIGHT	D3
8/17/1995	PHL	S340	BEX	121	31		1	N/A	NO. 1 ENGINE FIRE	"D,N3"
8/27/1995	CDR	B737	UAL	121	43		0	YES	FIRE WARNING	"DNC,F2"
9/19/1995	MEM	S340	NWAX	135	16		0	N/A	BOMB THREAT	D
9/22/1995	SAN	?	UAL	121	100	E	0	NO	BOMB THREAT	D3
9/26/1995	FLL	B737	CAR	121	162		3	YES	"SMOKE IN A/C, O2 MASKS DEPLOYED"	"D3,F3,N3"
11/1/1995	ORD	?	AALX	135	100	E	1	N/A	A/C FIRE	D3
11/12/1995	BDL	MD80	AAL	121	77		1	?	"STRUCK TREES OFF APT, THEN LANDED"	"DNC,M1,N3"
11/27/1995	SFO	MD80	ALA	121	91	E	0	NO	A/C STUCK IN TURF	D3
12/12/1995	MSP	B737	UAL	121	82	E	3	NO	"HOT ENG START,PAX PANIC,EEE OFF WING"	D3
12/12/1995	SFO	MD80	ALA	121	61		0	NO	MALFUNCTION BRAKE	D3
12/20/1995	JFK	B747	TWRA	121	468		60	NO	ABORTED TAKEOFF & CRASHED	"D3,M1,N3"
12/29/1995	GSO	MD80	DAL	121	115		0	NO	BOMB THREAT	D3
12/30/1995	CLT	B737	AAA	121	99		0	NO	A/C SLID OFF TWY	D3
1/4/1996	HOU	AT72	AALX	121	23		0	NO	BOMB THREAT	D3
1/5/1996	STL	JT31	TSR	135	11		0	N/A	FIRE WARN LIGHT NR2	D3
1/17/1996	LAS	F28	AR21	121	68	E	0	N/A	VIBRATION ON LANDING	"DN,F3"
1/23/1996	BNA	B727	DAL	121	75		0	YES	BOMB THREAT	D3
2/1/1996	BNA	DC9	VUJ	121	80		0	YES	RT MAIN GEAR SHEARED ON LANDING	"D3,F3,M1"
2/3/1996	OGG	DC9	HAL	121	67	E	3	?	SMOKE AFT CABIN ON TO	"DNC,F4"
2/8/1996	PHL	B727	NWA	121	99	E	0	NO	"SMOKE IN CABIN AT GATE, EVAC HITCHES"	"DN,F4"
2/18/1996	DTW	B757	NWA	121	125	E	1	?	"ENG FIRE LIGHT ON TO ROLL,EVAC"	"DN,F4"
2/20/1996	IAH	DC9	CAL	121	92		1	YES	LANDING GEAR COLLAPSED	"D3,M1,N3"
2/20/1996	PDX	B767	DAL	121	141		4	YES	APU FLAMES & SMOKE	"DN,N3"
2/20/1996	JFK	A300	AAL	121	195		34	YES	SMOKE IN COCKPIT & CABIN	"DN,M1,N3"
2/22/1996	CLT	F100	AAA	121	66		0	NO	MAIN GEAR PROBLEMS	D3
2/23/1996	BNA	DC9	VUJ	121	67	E	0	NO	BOMB THREAT ABOARD A/C	D3
2/25/1996	BOS	DHC8	AAA	121	14		0	NO	SMOKE IN A/C	D3
2/25/1996	JFK	AT42	AALX	121	46		0	N/A	NO. 2 ENGINE FIRE	D3
3/8/1996	RDU	JT31	CCA	135	22		0	N/A	UNSAFE GEAR (PASS THRU WINDOW EXITS)	D3
3/11/1996	TUL	AT42	SIM	135	33	E	1	N/A	"SULPHUR SMELL IN CABIN, EVAC"	"DNC,F4"
3/20/1996	ATL	B737	DAL	121	82	E	7	?	SMOKE IN CABIN	"DN,F4"
4/30/1996	ONT	B737	SWA	121	137		3	YES	LEFT MAIN GEAR HUNG UP	"D3,M1,N3"
5/2/1996	DIA	1900	UALX	121	11		0	N/A	RT MAIN GEAR COLLAPSE	"DN,M1,N3"
5/16/1996	SAN	E120	SKA	135	30		0	NO	FOUR BLOWN TIRES	D3
5/23/1996	IND	1900	SYA	135	20		0	N/A	"SMOKE IN CABIN,EVAC"	"DN,M1,N3"
6/9/1996	BOS	S340	BEX	121	12		0	NO	FIRE IN #1 ENGINE	D3

DATE	AIR PORT	TYPE A/C	AIR-LINE	FAR PART	CREW & PAX	INJURY	Total	SLIDES USED?	WHY EVACUATED AND REMARKS	DATA SOURCES
6/17/1996	JFK	?	TWRA	135	100	E	0	?	NR2 GEN LIGHT & LOW OIL LIGHT	"DN,F4"
6/20/1996	ALB	S340	BEX	135	24	E	0	?	"SMOKE IN COCKPIT, EVAC"	"DNC,F4"
6/28/1996	DIA	B737	UAL	121	126		0	NO	ENGINE OUT	D3
7/6/1996	SFO	B737	AWA	121	82	E	0	?	BLEW TWO MAIN LDG TIRE ON LDG	"DN,F4"
7/8/1996	BNA	B737	SWA	121	127		7	YES	RTO	"D3,M1,N3"
7/12/1996	PIT	F28	AAX	121	68	E	0	N/A	ABORTED TAKEOFF	D3
7/13/1996	ATL	MD88	DAL	121	91	E	U	NO	BOMB THREAT	D3
7/21/1996	JAX	?	CAL	121	100	E	0	NO	ENG CAME APART ON TO ROLL	D3
7/28/1996	SJC	MD80	ALA	121	118		0	NO	BOMB THREAT	D3
7/29/1996	DIA	DHC8	MSA	121	38		0	NO	HYD LEAD FOR GEAR	D3
8/1/1996	PBI	B737	CAR	121	60		0	NO	"BOMB THREAT, DAY NOT KNOWN"	D3
8/1/1996	ATL	B727	DAL	121	99	E	U	NO	BOMB THREAT	D3
8/3/1996	CVG	B757	DAL	121	169		0	NO	SMOKE IN COCKPIT	D3
8/8/1996	HNL	DC9	HAL	121	76		4	YES	NOSE GEAR COLLAPSED	"DN,M1,N3"
8/13/1996	DIA	DHC8	MSA	121	38		0	NO	HYD PROBLEM	D3
8/21/1996	ATL	F100	AAA	121	71	E	U	YES	BOMB THREAT-NOTE IN MAG ON A/C	D3
8/27/1996	DIA	B757	UAL	121	172		0	NO	HYD PROBLEM	D3
8/29/1996	CLT	F28	AAA	121	73		0	NO	VIBRATION ON TAKEOFF	D3
8/30/1996	DIA	B727	UAL	121	154		0	NO	BLOWN TIRE	D3
9/5/1996	CVG	MD88	DAL	121	91	E	0	NO	BOMB THREAT	D3
9/6/1996	MSY	B737	AAA	121	115		0	NO	BOMB THREAT	D3
9/6/1996	LGA	DC9	CAL	121	67	E	1	?	"FIRE #2 ENG, EVACUATED"	"DNR,F4"
9/11/1996	ATL	?	DAL	121	100	E	U	NO	BOMB THREAT-CALL DAL MIA RESERV.	D3
10/1/1996	DAY	B757	AAA	121	117		7	YES	BOMB THREAT-DAY NOT KNOWN	D3
10/5/1996	SJC	A320	MEX	121	125		0	NO	BOMB THREAT	D3
10/13/1996	PHX	B737	AWA	121	100		0	NO	POSSIBLE BOMB	D3
10/13/1996	DAY	B757	AAA	121	125	E	4	?	"PAX REPORT PIPE BOMB,EVAC"	"DN,F4"
10/19/1996	LGA	MD80	DAL	121	63		3	?	"STRUCK APPROACH LIGHTS,GEAR SHEARED"	"DNR,M1,N3"
10/28/1996	JFK	MD80	AAL	121	100		11	YES	"UNSAFE NOSE GR IND,(D3=10/29/96)"	"D3,M1,N3"
11/1/1996	PBI	MD80	DAL	121	136		0	NO	"BOMB THREAT, DAY NOT KNOWN"	D3
11/6/1996	SFO	JT31	UALX	135	16		0	N/A	LEFT MAIN BRAKE STUCK	D3
11/10/1996	CLE	MD80	AAL	121	120		0	NO	SLID OFF PAVE-WINTER CONDITIONS	D3
11/11/1996	CLE	MD80	DAL	121	118		0	NO	SLID OFF PAVE-WINTER CONDITIONS	"D3,M1"
11/18/1996	GRR	B737	UAL	121	71		2	?	FIRE WARN NR2 ENG	"DNC,M1,N3"
11/23/1996	DFW	DC9	AAL	121	120		1	YES	"LOUD BANG, ABORTED TAKEOFF"	"DN,M1,N3"
							898			

APPENDIX B

Survey Instrument 1

September 27, 1996

«Title»«FirstName»«LastName», «JobTitle»
«Company»
«Address1»
«City»«State»«PostalCode»

"Part 121 and 135 EMERGENCY EVACUATION STUDY"

Dear «Title»«LastName»:

In past years, your airport was one of several airports that were contacted and responded for the study of EMERGENCY EVACUATION EVENTS by Part 121 and 135 operators. As a result of these past studies, the Federal Aviation Administration (FAA) is now conducting new research into these types of events. The goal of the research is to reduce the number of events and the possibility of injuries when the events must take place.

For past studies, seventy airports were contacted. These airports included the top 40 in the US, plus airports known to have had an emergency evacuation event. The response rate was 92.8%. This was a strong indication of the value airport management placed on the study and the professional attitude of managers in supporting safety orientated research.

The CHICAGO O'HARE airport did an excellent job responding and sent us by far the most data. An interesting aspect of the study was that 14.3% of the airports that responded said that they had no emergency evacuations but other data indicated that such events may have taken place at their airport.

*Under FAA contract No. 96P51602, we have been tasked to up-date the previous research on Part 121 and 135 EMERGENCY EVACUATION EVENTS **conducted at your airport**. Please review your records for the period of to date and send us the requested information. The questionnaire and a pre-stamped and addressed envelope are enclosed.*

Thanks in advance for your cooperation.

Regards and have a good day.

DR. MICHAEL K. HYNES
Director of Aviation Research
WESTERN OKLAHOMA STATE COLLEGE
(Our toll free number is 888-335-5754)

EES9610

Survey Instrument 2

September 09, 1996

Airport - Director etc.
Address

Part 121 and 135 EMERGENCY EVACUATION STUDY

Dear «Title»«LastName»:

In past years, your airport was one of several airports that were contacted ***but did not respond*** with data for a study of EMERGENCY EVACUATION EVENTS by Part 121 and 135 operators. As a result of past studies, the Federal Aviation Administration is now conducting research into these types of events. The goal of the research is to reduce the number of events and the possibility of injuries when the events must take place.

For past studies, seventy airports were contacted. These airports included the top 40 in the US, plus airports known to have had an emergency evacuation event. The response rate was 92.8%. This was a strong indication of the value airport management placed on the study and the professional attitude of managers in supporting safety orientated research.

Only four airports failed to respond and four airports failed to send us data, claiming they were either "too busy" or the cost of responding "was too high". The CHICAGO O'HARE airport did an excellent job and sent us by far the most data.

An interesting aspect of the study was that 14.3% of the airports responded that they had no emergency evacuations while other data indicated that such events did take place at their airport.
Under FAA contract No. 96P51602, we have been tasked to up-date the previous research on Part 121 and 135 EMERGENCY EVACUATION EVENTS ***conducted at your airport****. Please review your records for the period of to date and send us the requested information. Our questionnaire and a pre-stamped and addressed envelope are enclosed.* ***(If information from your airport is omitted from the research effort, it will diminish the quality of the study and its value to the public.)***
Thanks in advance for your cooperation. Regards and have a good day.

DR. MICHAEL K. HYNES
Director of Aviation Research
WESTERN OKLAHOMA STATE COLLEGE
(My toll free number is 888-335-5754)

AIRPORT SURVEY QUESTIONNAIRE

SURVEY OF EMERGENCY EVACUATION EVENTS BY PART 135 AND 121 AIRCRAFT FROM: _____ AIRPORT/DATE: _____

(Information requested to comply with FAA contract No. 96P51602, September 3, 1996)

INFORMATION REQUESTED	EVENT #1	EVENT #2	EVENT #3	EVENT #4
01. DATE				
02. TYPE AIRCRAFT				
03. AIRLINE				
04. FLIGHT #				
05. # OF PASSENGERS				
06. # OF CREW				
07. # OF PASS. INJURIES				
08. # OF PASS. HOSPITALIZED				
09. # OF CREW INJURIES				
10. REASON FOR EVACUATION				
11. WERE YOU NOTIFIED IN ADVANCE?				
12. IF YES, HOW SOON BEFORE?				
13. WHERE DID THE EVACUATION TAKE PLACE (GATE, RAMP, ETC.)?				
14 WERE EXIT SLIDES USED?				

15. COMMENTS/REMARKS: (Your comments are of high value!) _____

_____

_____

PLEASE RETURN TO:

WESTERN OKLAHOMA STATE COLLEGE
Attn: DR. MICHAEL K. HYNES, Dir. of Avia. Research
2801 North Main Street
Altus, OK 73521-1397 Toll free phone: 888-335-5754

IF WE NEED ADDITIONAL INFORMATION WHO SHOULD WE CONTACT? (You may staple your business card or stationary.)

NAME:
TITLE: PHONE:
ADDRESS:

EES9601

APPENDIX C

Airports Contacted

ID	CITY, STATE	1994	1995	1996	(1995 Airport data) Rank	Enplanements
ABQ	ALBUQUERQUE, NM			X	48	3,056,442
ABY	ALBANY, GA			X	295	37,152
ACY	ATLANTIC CITY, NJ	X			129	338,027
ATL	ATLANTA,GA	X	X	X	2	28,090,978
BGM	BINGHAMTON, NY	X			182	149,632
BNA	NASHVILLE, TN	X	X	X	42	3,685,219
BOS	BOSTON, MA	X	X	X	15	11,734,693
BUF	BUFFALO, NY			X	69	1,563,176
BWI	BALTIMORE, MD	X	X	X	28	6,466,755
BZN	BOZEMAN, MT	X			166	185,967
CAE	COLUMBIA, SC	X	X	X	96	569,666
CHS	CHARLESTON, SC	X			90	691,731
CID	CEDAR RAPIDS, IA	X			124	394,395
CLE	CLEVELAND, OH		X	X	32	5,270,004
CLT	CHARLOTTE, NC	X		X	20	10,463,122
CVG	GREATER CINCINNATI, KY	X	X	X	25	7,504,549
DAL	DALLAS, TX (Love Field)	X		X	44	3,418,604
DAY	DAYTON, OH			X	80	1,088,823
DCA	WASHINGTON NATIONAL, VA	X	X	X	26	7,373,178
DEN	DENVER, CO (pre 12/95)*[1]	X	X	X	7	14,858,763
DFW	DALLAS-FT WORTH, TX	X	X	X	3	26,962,940
DSM	DES MOINES, IA	X			86	795,625
DTW	DETROIT, MI (Metro)	X	X	X	9	14,082,598
EKO	ELKO, NV	X			188	134,843
ELM	ELMIRA, NY	X			216	92,327
ELP	EL PASO, TX	X			61	1,826,460
EWR	NEWARK, NJ	X	X	X	12	13,230,961
FAY	FAYETTEVILLE, NC	X			177	164,008
FLL	FT LAUDERDALE, FL	X	X	X	34	4,787,467
GSO	GREENSBORO, NC	X		X	64	1,766,316
GTF	GREAT FALLS, MT	X			191	127,224
GVT	GREENVILLE, TX	X			data not available	
HNL	HONOLULU, HI	X			17	11,283,295
HOU	HOUSTON, TX (Hobby)	X	X	X	41	3,905,727
IAD	WASHINGTON, DULLES	X	X	X	29	5,879,523
IAH	HOUSTON, TX	X	X	X	16	11,350,898
ICT	WICHITA, KS	X			93	658,307
ILM	WILMINGTON, NC	X			165	186,633
IND	INDIANAPOLIS, IN	X		X	47	3,189,932
ISO	KINSTON, NC (Regional)	X			364	17,973
JAX	JACKSONVILLE, FL	X		X	62	1,779,812
JFK	NEW YORK, NY (Kennedy)	X	X	X	8	14,601,827
LAS	LAS VEGAS, NV	X	X	X	11	13,243,748
LAX	LOS ANGELES, CA	X	X	X	4	26,133,795
LGA	NEW YORK, NY (La Guardia)	X	X	X	21	10,297,628

ID	CITY, STATE	1994	1995	1996	(1995 Airport data)	
					Rank	Enplanements
LGB	LONG BEACH, CA	X		X	167	185,776
LIT	LITTLE ROCK, AR	X			74	1,265,673
MCI	KANSAS CITY, MO	X	X	X	35	4,743,009
MCO	ORLANDO, FL	X	X	X	19	10,583,166
MDW	CHICAGO, IL (Midway)	X	X	X	39	4,266,831
MEM	MEMPHIS, TN	X	X	X	38	4,323,207
MIA	MIAMI, FL	X	X	X	6	16,065,673
MSP	MINNEAPOLIS, MN	X	X	X	14	12,559,491
MSY	NEW ORLEANS, LA	X	X	X	40	4,084,886
OAK	OAKLAND, CA			X	33	4,797,498
OKC	OKLAHOMA CITY, OK	X			67	1,670,332
OMA	OMAHA, NB			X	70	1,542,519
ONT	ONTARIO, CA			X	46	3,232,996
ORD	CHICAGO, IL (O'Hare)	X	X	X	1	31,433,002
ORF	NORFOLK, VA			X	73	1,335,378
ORH	WORCESTER, MA	X			303	33,102
PBI	WEST PALM BEACH, FL	X		X	54	2,699,227
PDX	PORTLAND, OR	X	X	X	31	5,537,790
PFN	PANAMA CITY, FL			X	183	147,452
PHL	PHILADELPHIA, PA	X	X	X	23	8,791,372
PHX	PHOENIX, AZ	X	X	X	10	13,738,433
PIT	PITTSBURGH, PA	X	X	X	22	9,945,793
PNS	PENSACOLA, FL	X			103	544,486
PVD	PROVIDENCE, RI		X	X	81	1,073,939
RAP	RAPID CITY, SD	X			170	180,794
RDU	RALEIGH, NC		X	X	50	2,938,831
RIC	RICHMOND, VA	X			82	1,066,411
SAN	SAN DIEGO, CA	X	X	X	27	6,636,372
SAT	SAN ANTONIO, TX			X	49	3,028,246
SDF	LOUISVILLE, KY	X		X	63	1,767,511
SEA	SEATTLE, WA	X	X	X	18	11,077,470
SFO	SAN FRANCISCO, CA	X	X	X	5	17,187,766
SJC	SAN JOSE, CA	X	X	X	37	4,394,931
SLC	SALT LAKE CITY, UT	X	X	X	24	8,741,761
SMF	SACRAMENTO, CA			X	45	3,346,762
SNA	SANTA ANA, CA (John Wayne)	X		X	43	3,533,073
STL	ST LOUIS, MO	X	X	X	13	12,790,701
SYR	SYRACUSE, NY			X	84	1,006,200
TPA	TAMPA, FL	X	X	X	30	5,567,950
TUL	TULSA, OK	X			68	1,566,424
TUS	TUCSON, AZ	X		X	65	1,715,732
TYS	KNOXVILLE, TN (McGhee)	X			91	674,970
7V1	BUENA VISTA, CO	X				
NUMBER OF AIRPORTS CONTACTED			73	41	63*[2]	

*[2] Represents Approximately 85.6% of 1995 Airline Passenger Enplanements and Approximately 91% of Reported Emergency Evacuation Events.

Airports Not Contacted

ID	CITY, STATE	Number of events	Rank	(1995 Airport data) Enplanements
ALB	ALBANY, NY	1	83	1,019,683
ANC	ANCHORAGE, AL	1	59	2,315,001
ART	WATERTOWN, NY	1		data not available
AZO	KALAMAZOO, MI	2	147	257,826
BDL	WINDSOR LOCKS, CT	2	57	2,559,642
BDR	BRIDGEPORT, CT	1	324	25,104
BFL	BAKERSFIELD, CA	1	208	108,204
BMI	BLOOMINGTON, IL	1	233	75,064
CMX	HANCOCK, MI	1	348	20,121
CWA	MOSINEE, WI	1	194	115,927
DBQ	DUBUQUE, IA	1	298	36,051
DEC	DECATUR, IL	1	321	26,908
EFD	HOUSTON, TX	1	276	43,821
ESF	ALEXANDRIA, LA	1	246	64,473
EVV	EVANSVILLE, IN	1	162	201,490
FAT	FRESNO, CA	3	109	471,742
FSM	FT. SMITH, AR	1	217	91,436
FYV	FAYETTEVILLE, AR	2	152	233,474
GRR	GRAND RAPIDS, MI	1	85	805,350
HSV	HUNTSVILLE, AL	1	119	416,475
HTS	HUNTINGTON, WV	1	234	74,742
JLN	JOPLIN, MO	1	308	30,837
LAF	LAFAYETTE, IN	1	374	16,653
LBE	LATROBE, PA	2	334	23,092
LEX	LEXINGTON, KY	1	114	445,157
LYH	LYNCHBURG, VA	1	224	85,112
MEI	MERIDIAN, MS	1	343	21,056
MGM	MONTGOMERY, AL	1	163	189,131
MKE	MILWAUKEE, WI	1	56	2,584,039
MKG	MUSKEGON, MI	1	290	38,439
MLI	MOLINE, IL	1	146	258,278
MLU	MONROE, LA	2	195	121,423
MSL	MUSCLE SHOALS, AL	1		data not available
MSN	MADISON, WI	1	105	522,757
MWA	MARION, IL	1	398	13,026
OGG	KAHULUI, HI	1	52	2,783,847
ORH	WORCESTER, MA	1	303	33,102
PAH	PADUCAH, KY	1	314	28,776
PIA	PEORIA, IL	1	171	180,780
RIW	RIVERTON, WY	1	397	13,157
ROA	ROANOKE, VA	1	134	323,145
RSW	FT. MYERS, FL	1	60	1,992,443
SAV	SAVANNAH, GA	2	98	565,230
SBN	SOUTH BEND, IN	2	117	420,589
SBP	SAN LUIS OBISPO, CA	1	197	120,772
SPS	WICHITA FALLS, TX	1	252	62,645
TUL	TULSA, OK	1	68	1,566,424
UNV	STATE COLLEGE, PA	1	214	94,343

Airports That Did Not Respond

No 1996 Data:

ID	CITY, STATE	(1995 Airport data) Rank	Enplanements	Number of events reported by other sources and date of last response
DFW	DALLAS/FT WORTH, TX	3	26,962,940	3 since 04/01/93
IND	INDIANAPOLIS, IN	47	3,189,932	1 since 04/01/93
LAX	LOS ANGELES, CA	4	26,133,795	no events reported since 11/01/95
PDX	PORTLAND, OR	31	5,337,790	1 since 05/01/94
PHL	PHILADELPHIA, PA	23	8,791,372	1 since 08/01/95
SDF	LOUISVILLE, KY	63	1,767,511	1 since 04/01/95

Data on recent emergency evacuation events were obtained from other sources.

No Data At All:

ID	CITY, STATE	(1995 Airport data) Rank	Enplanements	Number of Events reported by other sources
BUF	BUFFALO, NY	69	1,563,176	2
CHS	CHARLESTON, SC	90	691,731	1
ICT	WICHITA, KS	93	658,307	2
LGA	LA GUARDIA, NY	21	10,297,628	10
SMF	SACRAMENTO, CA	45	3,346,762	1
TUL	TULSA, OK	68	1,566,424	2

APPENDIX D

Airlines Carriers / ID Codes

Part 121		Part 121/135 and Part 135
AAA	USAIR	
AAAX		USAIR EXPRESS
AAL	AMERICAN AIRLINES	
AALX		AMERICAN EAGLE (listed below-AALX)
ABX		ABX AIR
ACA	ATLANTIC COAST AIR	
AIB	AIR IBERIA	
ALA	ALASKA AIR	
ALI	ALITALIA	
ALO	ALOHA AIR	
AMT	AMERICAN TRANS AIR	
AMW	AIR MIDWEST	
APA		ASPEN AIRWAYS
AR21		AIR 21, INC.
ASE		ATLANTIC SOUTH EAST
ATI	AIR TRANSPORT INTERNATIONAL	
AWA	AMERICA WEST	
AWS		AIR WISCONSIN
BEX		BUSINESS EXPRESS
BNF	BRANIFF	
BOA	BRITISH OVERSEAS AIRWAYS	
BRT		BRITT AIRWAYS
BWA		BROCKWAY AIR
CAL	CONTINENTAL	
CALX		CONTINENTAL EXPRESS
CAN	CANADIAN	
CAPE		CAPE AIR
CAR		CARNIVAL
CASX		CASIO EXPRESS
CCA		CC AIR
CMD		COMMAND AIRWAYS
COM		COMAIR
DAL	DELTA AIR LINES	
DALX		DELTA EXPRESS
DHL	DHL AIR	
EAL	EASTERN AIR LINES	
EXA		EXPRESS AIRLINES ONE
FDX	FEDERAL EXPRESS	
FGS		FLAGSHIP EXPRESS (AALX)
GULF		GULF
HAL		HAWAIIAN AIR
HNA		HENSON AVIATION
HRA		HORIZON AIR
JSI		JETSTREAM INTERNATIONAL
KAL		KALITTA
MDC		MIDWEST COMMUTER

Part 121		Part 121/135 and Part 135
MDX		MIDWEST EXPRESS
MEX	MEXICANA AIRLINES	
MPA		MID PACIFIC AIR
MSA		MESABA AVIATION
MST		MIDWEST
NWA	NORTHWEST AIRLINES	
NWAX		NORTHWEST COMMUTER
OLY	OLYMPIC	
PAA	PAN AMERICAN	
PAC		PENNSYLVANIA COMMUTER
PAE		PAN AMERICAN EXPRESS
PDT		PIEDMONT
PEO	PEOPLE EXPRESS	
PJX		PRIVATE JET EXPRESS
PNA		PENINSULA AIRWAYS
PVT		PROVINCETOWN
RAM	ROYAL AIR MAROC	
RYA		RYAN AIR
SAP		SIERRA PACIFIC
SIM		SIMMONS AIRLINE (AALX)
SKA		SKYWEST AIR
SKB		SKYBUS, INC.
SSA		STATES WEST AIRLINES
SWA	SOUTHWEST AIRLINES	
SWD		SUN WORLD
SWIS	SWISS AIR	
SYA		SKYWAY AIR
TACA		
TEM		TEM ENTERPRISES
TSR		TRANS STATES AIR
TST		TRANS STATES AIRLINES
TWA	TRANS WORLD	
TWAX		TRANS WORLD EXPRESS
TWRA	TOWER AIR	
UAL	UNITED AIRLINES	
UALX		UNITED EXPRESS
UFS		UFS, INC
UTA		ULTRA AIR
VAL		VISCOUNT AIRLINES
VUJ	VALUE JET	
WSA		WEST AIR
WWA		WINGS WEST AIRLINES (AALX)
XP1		EXPRESS ONE