News Media Becomes Friend and Foe In Accident Reporting

Sensationalism and inaccuracies in media coverage of aviation accidents often result from tight deadlines and inexperienced reporters. Aviation spokespersons who establish a relationship with the media can help reporters to better understand aviation technical facts before a crisis occurs.

by
Agnes Huff, Ph.D.
USAir
and
Jerome Lederer
President/Emeritus
Flight Safety Foundation

Aviation disasters have a strange fascination for most people. When an air carrier accident occurs, it becomes a news priority. "What caused it?" becomes the pressing question reporters try to answer by deadline. A pitfall of this urgency is that inaccurate information can be reported to a public which is eager to be informed.

Media Coverage and Accident Investigation Have Different Aims

The purposes of media coverage and airline accident investigations are diametrically opposed to one another. Media coverage is based on instant gratification, immediate answers to tough questions, conjecture and often oversimplification of a complex series of events. On the other hand, an accident investigation is an understandably time-consuming endeavor, because it requires thorough analysis of a myriad of seemingly insignificant details that eventually leads to the probable cause of the accident.

George Bernard Shaw once said, "The trouble with the media is that it seems unable to distinguish between the end of the world and a bicycle accident." This view is reflected when some media coverage of incidents such as false engine fire warning lights and blown tires escalate into "near death" experiences by the time they are printed or broadcast. Sensationalism sometimes accompanies media coverage of aircraft accidents, and this can have a negative impact upon the entire aviation industry.

Some media coverage is more concerned with "what if" situations rather than "what is." An example of such reporting occurred at a Los Angeles airport. On a particularly rainy night, a landing airline jet came to a stop approximately 50 feet from the end of the runway. There were no injuries or damage — it was a

non-event. However, reporters asked "What if the aircraft hadn't stopped?" and focused their stories on such speculation.

Facts Sometimes Obscured

Do headlines tell the whole story? Do they mislead public perception about an accident? Does media coverage hinder the accident investigation process?

Consider the following example. In 1948, a DC-3 used by an airline to test new equipment crashed in the bay adjacent to New York City's LaGuardia Airport and killed the two crew members on board. At the morgue, there was an odor of alcohol emanating from the bodies. Tests confirmed the presence of alcohol in the bodies of the dead crew, and a local newspaper headline stated, "Intoxicated Crew Causes Crash."

Blood specimens were sent to Yale University (New Haven, Conn., U.S.) and tests confirmed the presence of alcohol; however, it was wood alcohol, and not grain alcohol which is used in cocktails. The crew had been testing a propeller de-icing installation. Several cans of wood alcohol, used for de-icing, had been placed in the cockpit. The force of the crash ruptured the cans and some of the fluid was absorbed by the pilots' bodies during the accident.

The accusation that drunken pilots caused the accident was unfounded. Reputations were jeopardized by a media eager to publish a sensational story, and reporters failed to confirm important facts. Fiorello LaGuardia, when mayor of New York City, once advised his political opponents, "Be sure of your facts before you distort them."

Another example concerns an accident that occurred at LaGuardia Airport in 1989. A commercial jetliner, with 63 passengers and crew on board, aborted the takeoff and ran off the end of the runway into the bay. Two passengers were killed, but the other occupants escaped serious injury. The press coverage that followed included the following:

Headline: "Hit and Run at LaGuardia: Mysterious Absences and Confusion in the Cockpit"

Headline: "Pilots Duck Crash Probe"

Headline: "Crash Pilots May Have Been Drinking"

Headline: "Cocaine Found on Crash Jet"

The sensational headlines continued, despite the fact that they were found to be erroneous. As each day passed, bits and pieces of information surfaced which lead reporters to further speculation and distortion concerning the circumstances surrounding this accident.

Some reporters have taken a critical look at their profession ... .

The press coverage of these two accidents demonstrates that inaccuracies, reporting bias and media distortion do occur. Some reporters have taken a critical look at their profession; articles have been written (Christopher Hanson's, "When Planes Crash, Truth Is Often Among the Victims," *Columbia Journalism Review*, 1989) criticizing their peers about irresponsible and inaccurate press practices.

Media Influences Public Perceptions

Sophisticated communication tools from fiber optic cables to satellites help the press exert a collective influence on the general public. Time and distance are no longer barriers to up-to-the-minute news coverage.

For example, coverage of the Persian Gulf War was not just a litany of cold facts. Live television coverage transmitted by satellite gave a feeling and movement to events — and audiences witnessed battlefront coverage daily. Communication technology allows us to experience an event as it is happening and to be able

to relive it, again and again. The United Airlines DC-10 crash landing in Sioux City, Iowa, U.S., in 1989, is another example of a trauma being repeated through the broadcast medium.

We should not criticize the media for displaying events as they happen, because events are the news. But television, for example, has a powerful effect. It can combine emotion, image and style to influence the message the audience receives. Television can shape public opinion and influence the perception of any given event. The public does not know what it does not see, hear or read; reality becomes what the media selects for presentation. Experienced reporters recognize that how they utilize the facts is as important as the facts themselves.

Distortions Occur in Reporting

Existence of Bias

Generally speaking, the media mirrors daily events and activities. It reflects society's thoughts and deeds. Many of us have the idealistic notion that the media is totally objective but, in reality, this is not true.

Bias is inherent in the coverage of any story, including an aircraft accident. It can come from indifference or prejudice to certain issues. Bias is a cognitive function that influences the choice of facts and circumstances by being sensitive to some and ignoring others.

Media as Business

The sensationalism of an event and its ultimate perception by the public results also from the fact that the media is a competitive business. Disturbing news attracts attention and, as long as the tragic news keeps coming, the audience stays tuned. Also, reporters recognize that the more unique and exciting the story, the greater chance for peer recognition or a coveted journalism award. Ultimately, suppliers of the news depend on the goodwill and support of "customers" — readers, viewers and advertisers. The media is driven to capture an audience in competition with rivals. Networks are driven by ratings and newspapers are driven by circulation.

Lack of Proper Corroboration

Distortion can creep into media coverage when reporters use attributions such as "reportedly" or "as reported in." These suggest that facts were not re-checked for accuracy because they had been reported previously. These unspecific attributions can be used as a shortcut to responsible reporting. Consider the following attributions in a *New York Daily News* article about the crew involved in the 1989 LaGuardia accident.

"… the *Daily News* learned."

"… an investigator said."

"… the source said."

Not one identified source of attribution was quoted in the story.

Influence of Technology

Increasingly sophisticated computer technology may compound errors that result from unverified or incomplete information. Computer databases index most major articles and are readily available to journalists for background material and supporting data. These previously published articles may contain inaccuracies which, when used later as sources, allow the misinformation to surface again. A correction amends and clarifies the original record. However, a correction is only as effective as its distribution, and many who had read or heard the original error may not become aware of a subsequent correction.

Experienced reporters recognize that how they utilize the facts is as important as the facts themselves.

Unfamiliarity with Aviation

Inexperience in covering aviation accidents by reporters is partially a result of aviation's

excellent safety record; airline accidents are relatively rare occurrences. Unfamiliarity with the accident investigation process, airline terminology and aviation safety can contribute to inaccuracies in reporting.

For example, the general public, including reporters, may be unaware that a first officer and captain routinely alternate aircraft takeoff and landing duties. The statement, "The copilot was at the controls," can lead to erroneous conclusions — that the captain was incapacitated, irresponsible or even away from the flight deck at the time of the accident.

Media Affects Investigation

Interference at Accident Site

At one aircraft accident site, more than 40 members of the newspaper and television media appeared within hours of the event. Some reporters tried to gain access to survivors' hospital rooms and to temporary morgues. Others hired a helicopter and hovered over the site, thereby interfering with communication, rescue and recovery operations.

Competition for Answers

Media competition and the lack of immediate answers may induce reporters to speculate on the cause of the accident. Speculation is made worse when there is no authorized spokesperson available to respond to press inquiries. Reporters who cannot reach someone for comment may draw their own conclusions based on sketchy information.

Reporters who cannot reach someone for comment may draw their own conclusions ... .

The media sometimes draws premature conclusions from access to information that can be taken out of context, such as cockpit voice recorder (CVR) transcripts. After the CVR information in the 1989 LaGuardia accident were made public, one headline stated, "Pilots in New York Crash Called Frustrated, Impatient." The pilots' dialogue had been taken out of context, and inferences were made on their emotional condition based on a few remarks gleaned from the transcript.

CVR tapes usually receive considerable publicity. A recent law made changes to the period before release of the CVR transcripts after an accident. Previously, the National Transportation Safety Board (NTSB) had 60 days after an accident before making portions of the transcript public. Now, the criteria for making CVR information accessible to the public is either the first day of an NTSB hearing or when the majority of the facts are ready for release. Air Line Pilots Association (ALPA), a pilot union, cites early media access as an invasion of crew member privacy; reporters see delaying the release of transcripts as interfering with timely reporting of information.

Damage to Reputations

Because more than 70 percent of aviation accidents are caused by human failure, reporters might prematurely invoke pilot error as the cause of an accident. Speculative reporting, without conclusive evidence, can damage pilot reputations and create a negative perception of the entire aviation industry.

The following account demonstrates the influence of inaccurate reporting. At the request of the U.S. Federal Aviation Administration (FAA), all U.S.-certificated airlines submitted reports of in-flight mechanical difficulties involving critical safety equipment. A major airline elected to submit *all* mechanical difficulties, safety related and otherwise. This response contrasted with those of other operators, who submitted only the required information; thus, the first airline's list became much more extensive than those of the others.

A reporter for a prominent daily newspaper was given access to the entire FAA file on mechanical malfunctions. It did not take long to discover the first airline's predominance in number of mechanical difficulties listed. A column appeared in the paper citing that airline as the most dangerous in the nation because

of the relative number of mechanical difficulties it had reported. The misleading report was copied widely, and seriously damaged the reputation of the airline.

Generally, the media is careful to avoid committing libel — injuring a living individual through a false statement in print or through broadcast that exposes the person to public hatred, shame, disgrace or ill opinion. When the media is not able to mount its first line of defense — that the stated facts are provably true — against charges that the statement is false, a civil court action may be justified if other legal criteria are met. Unfortunately, by that time, the damage to an individual has been done, and the injured party may not have the resources to wage a civil action, or the willingness to repudiate the charges in a public court. Crew members who are killed in an accident have no such legal protection, and their families, co-workers and employers may suffer the emotional hardships of inaccurate reports about the dead crew.

One way to promote fair and accurate reporting of aviation accidents is to educate reporters in the accident investigation process.

Influencing of Eyewitnesses

Today, it may be the media, not the accident investigators, who are the first to interview eyewitnesses and survivors at the scene. Research has established that questions asked about an event influence the way eyewitnesses remember what they actually saw (Loftus, 1977). This is consistent with the premise that memory undergoes a change as a result of the type of question asked, and otherwise credible eyewitnesses can have their recollections tainted after media interviews. That may be damaging to the subsequent accident investigation, since eyewitnesses are often called upon to provide valuable information.

Accident investigators are trained in non-confrontational witness interrogation techniques, but the media are trained in investigative reporting. While the media searches for blame, the government investigator searches for probable cause.

Psychological Distress after Accident

It is a terrible experience for a person to be involved in an airplane accident. But it can be made worse for accident survivors and involved relatives, by the repetitive emotional jolts that occur when headlines report a new cause for the accident each day during the days immediately following an accident. The only information available to the public is uaually from the news media; inaccuracies and distortions in media coverage can negatively influence the well-being of persons involved in the accident.

Effects on Accident Findings

Media activity may interfere with the course of an investigation, but it has little bearing on the ultimate findings because accident investigators deal with hard facts and ignore the distractions of subjective influences. According to Jerry Lederer, who was the first safety bureau director of the Civil Aeronautics Board (CAB), from which the NTSB evolved, "I can't recall any impact by the media on the findings of an investigation, and my tenure included the deaths of a U.S. senator and actress Carol Lombard [who were killed in aircraft accidents]. Basically, we as accident investigators went on about our business as though there was no media. Our public affairs officer dealt with the press on the basis of factual information."

Promote Fair and Accurate Reporting of Aviation Accidents

Education of Media

One way to promote fair and accurate reporting of aviation accidents is to educate reporters in the accident investigation process. One step in this direction has been taken by the Aviation/Space Writers Association (AWA) with the publication of its pamphlet *Air Accidents and the News Media*. It provides a reference for media representatives who may be assigned

to cover an aircraft accident. Ideally, reporters who specialize in aviation and possess some appropriate technical knowledge can be an asset to provide accurate coverage of accidents and incidents.

It is not only the media that can benefit from the education process, however. Accident investigators and airline spokespersons must understand the role and responsibilities of the press, but they must divulge only factual data when they are questioned about an accident in which they are involved.

Development of Pro-active Media Relations

The development of a pro-active media relations program can encourage responsible media coverage of accidents. It is critical to build relationships with key media personnel to establish clear communication before an accident happens. The media can be extremely helpful to the affected airline and the investigation, not only by reporting accurately, but by publishing contact telephone numbers for passenger inquiries, locating eyewitnesses or even contributing to the finding of pieces of wreckage. In the Sioux City accident, media reports about missing aircraft wreckage were widely publicized and resulted in the eventual recovery of a critical engine part, which proved to be important to the investigation.

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An effective media relations program is an integral part of comprehensive accident response plan. Members of the press cannot be viewed as the enemy; they must be accepted as a limited adjunct to the accident investigation.

Training for Spokesperson

Intelligent, knowledgeable, respected, calm, articulate, accessible, convincing — these adjectives all describe the ideal media spokesperson. This person provides the communication link between accident scene officials and the outside world. Media training must be an ongoing effort to keep airline and government public information officers sensitive to the needs of the press, and to equip them with the necessary skills to communicate effectively. Their primary concerns are to maintain credibility and integrity, to squelch rumors by providing accurate information and correcting inaccuracies, and to provide up-to-date information.

Effective media relations programs utilize appropriate resources, including people familiar with various aircraft systems who can be technical advisors to the spokespersons.

Mutual Respect in Relationships

Accident investigators, airline spokespersons and the media must have mutual respect for one another and be prepared to deal with the conflicts that may arise among them. Paramount is the understanding of each other's responsibilities and limitations.

Investigators and spokespersons must know the media's needs and attempt to accommodate their requirements, which are crucial to a cooperative relationship. This can be as simple as advising media representatives that no further information is available, when appropriate, rather than an abrupt "no-comment." Understanding, tolerance and accommodation are necessary to establish a mutually beneficial relationship, which can result in more balanced media coverage of aviation accidents. However, there is no substitute for accuracy and objectivity in reporting. ♦

[Adapted from a paper presented before the International Society of Air Safety Inspectors (ISASI)]

References

Aviation/Space Writers Association: "Air Accidents and the News Media." 1988 Edition.

Bender, David L. and Leone, B. (1988) *The Mass Media*. Minnesota: Green Haven Press.

Boot, William. "The Accidental Journalism," *Columbia Journalism Review*. January/February, 1990.

Boynton, Phil R. (1989) *Winning the Media Game*. Toronto, Canada: Stoddard Publishing Co. Ltd.

Cross, Donna W. (1983) *Media Speak*. New York: Coward McCann, Inc.

Loftus, Elizabeth F. (1977) "Reconstructing Memory: The Incredible Eyewitness." *Psychology Today*.

Merriam, John E. and Makower, Joel. (1988) *Trend Watching*. New York: Tilden Press.

About the Authors

Agnes J. Huff, Ph.D., is an aviation psychologist and USAir regional manager-corporate communications. Huff is a researcher, lecturer and instructor in the field of human factors, aviation safety and psychology, and her work has been published internationally. She is an instructor at the Institute of Safety and Systems Management at the University of Southern California.

In her present position, Huff is responsible for media contact, employee communications, public relations, government affairs and corporate emergency preparedness for USAir. She has experience in aircraft accident investigation and pre-accident training. Huff has conducted post crisis debriefings following several major airline accidents.

Jerome Lederer began his aviation career in the mid-1920s as an aeronautical engineer with the U.S. Air Mail Service. During the 1930s, he served as chief engineer of Aero Insurance Underwriters and, in 1940, was appointed the first director of the safety bureau of the Civil Aeronautics Board. In 1945, he became involved with Flight Safety Foundation (FSF) and was appointed its managing director, concurrently serving as director of the Cornell-Guggenheim Aviation Safety Center. He presently is president/emeritus of FSF and is a frequent speaker and author in the field of aviation safety.

In 1967, Lederer organized and directed the Office of Manned Space Flight Safety for the U.S. National Aeronautics and Space Administration (NASA), and later became director of safety for all of NASA.

Lederer has received more than of 60 awards and honors.

Aviation Statistics

Glider Flying Increases in the United States 1970-1990

by
Shung C. Huang
Statistical Consultant

In general, glider, or sailplane, flying is considered a personal pleasure or recreational activity and its safety record is not included when examining statistics relating to corporate and commercial aviation. However, most glider-rated pilots have powered-aircraft ratings as well, and aviation researchers may find useful relationships between the safety aspects of recreational and professional flight activities.

In 1970, there were 11,000 glider pilots listed in the U.S. Federal Aviation Administration (FAA)

Table 1
Growth of Glider Flying
The Increase of Pilots, Gliders and Flight Time
1970-1990

Certificate Categories	1970	1975	1980	1985	1990
Glider Pilot (only)	3,114	5,348	7,039	8,168	7,833
Private/Commercial/ Rotorcraft/Airline Transport Pilots with Glider Ratings	7,944	10,614	12,587	12,140	11,713
Total Glider Pilots	11,058	15,962	19,626	20,308	19,546
Total Registered Gliders	1,849	2,744	3,909	4,446	4,549
Estimated Active Gliders	1,492	1,906	3,149	3,167	3,257
Glider Flight Hours @	141,577	203,200	289,600	307,200	258,761

Source: FAA Annual Airmen Statistics
@ The number of gliders and glider flying time are not readily available in FAA published statistics. The data used in this analysis are estimated by the author based upon available information.

register of active civil pilots (*U.S. Civil Airmen Statistics*) — approximately 8,000 of whom also were private, commercial, rotorcraft or airline transport pilots — and only 3,000 pilots who were eligible to fly gliders only. Glider-only pilots are not required to have a valid medical certificate. Because the FAA register considers as active only those pilots who have received a medical examination within the preceeding 24 months, glider-only pilots who have not received a medical examination during that time are not included in that register or in these statistics. Table 1 shows the increase in glider pilots, gliders and glider flight time. The number of glider pilots increased rapidly in the 1970s and the early 1980s. In 1985, the glider pilot population reached 20,308, an all-time high, and then dropped to 19,456 in 1990. Compared to the declining trend of general aviation private and commercial pilots during the two decades, the number of glider pilots reflected a total increase of 77 percent, or about four percent a year. Although FAA statistics identify all glider pilots as active, the actual number of glider pilots who did fly a glider in a particular year is not readily known.

Gliders account for approximately 1.2 percent to 1.7 percent of the total registered U.S. aircraft during the period. Table 1 shows that the number of registered gliders increased from 1,849 in 1970 to 4,549 in 1990, an increase of almost 150 percent, or about 10 percent a year. Based upon the U.S. census of civil aircraft and annual general aviation aircraft survey reports, it is estimated that 70 percent to 75 percent of U.S. gliders were flown in any calendar year. In terms of average hours flown per active glider, the average annual flight time increased slightly from 94 hours in 1970

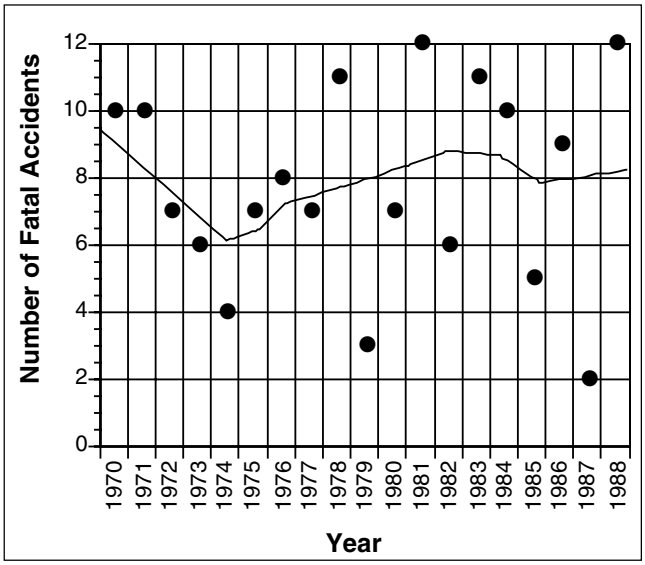


Figure 1

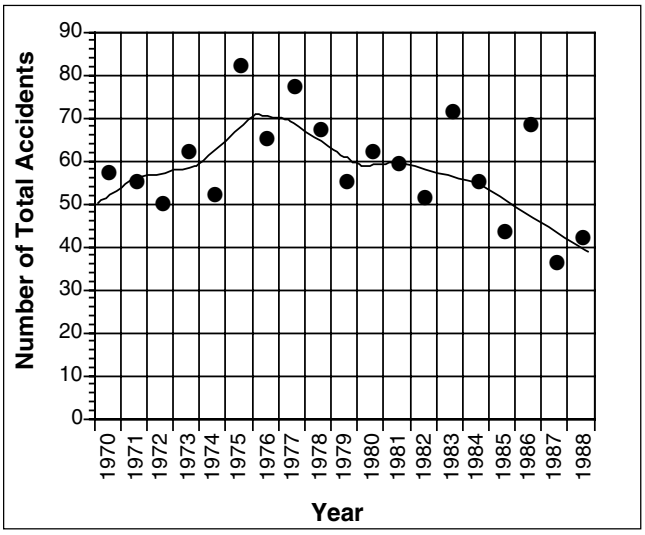


Figure 2

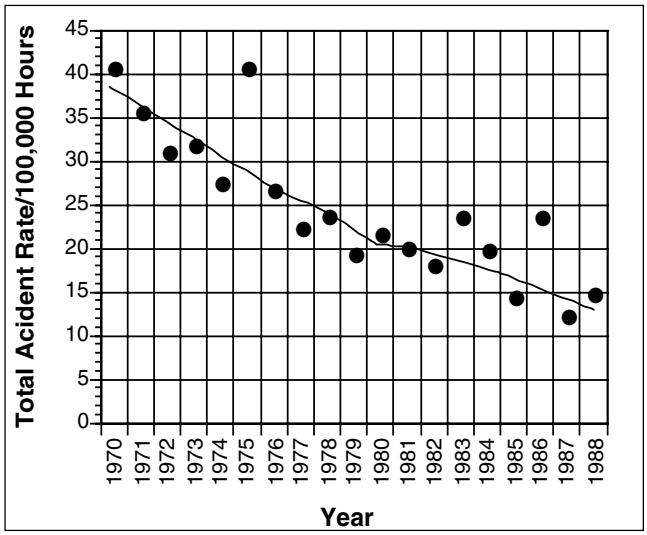


Figure 3

to 97 hours in 1985, and dropped to 80 hours in 1990.

Accident Record Is Inconsistent

The annual frequency of accidents and fatal accidents involving glider flying is very inconsistent. However, the overall safety trend has been favorable. Figures 1 and 2 illustrate the annual distribution of total accidents and fatal accidents for the past two decades, which have varied greatly. The accident distribution shows that in the early 1970s, there was an average of 55 accidents a year. The average rose to 70 in the late 1970s, then dropped to 60 in the early 1980s and 47 in the late 80s. Fatal accidents averaged seven a year in the early years and varied up and down in the last decade. The overall trend appears to be upward.

Although the accident frequency fluctuates widely, the accident rates for both total accidents and fatal accidents have been declining. It appears that the increase or decrease of total accidents and fatal accidents has been closely related to glider activity, and the hours flown statistic has a significant effect in computing the accident rates. Figures 3 and 4 show the total accident rate and fatal accident rate in

Table 2
Most Prevalent First Phase of Operation
All Glider Accidents
1976-1988

	1976-1980		1981-1985		1986-1988	
Phase of Operation	**Mean**	**Percent**	**Mean**	**Percent**	**Mean**	**Percent**
Approach/Landing	46.4	70.7	42.8	70.4	34.3	68.6
Takeoff/Climb	10.0	15.3	12.0	19.7	10.7	21.4
In-flight	8.4	12.8	5.4	8.9	3.7	7.4
Taxi	0.2	0.3	0.2	0.3	0	0
Other/Not Reported	0.6	0.9	0.4	0.7	1.3	2.6
Total	65.6	100.0	60.8	100.0	50.0	100.0

Mean: Refers to the average of accidents during the period.
Source: NTSB Annual Review of General Aviation Aircraft Accident data.

Table 3
Broad Cause/Factor Assignments in All Accidents
All Gliders
1980 -1988

Phase of Operation	1971-1975 Mean	1971-1975 Percent	1976-1980 Mean	1976-1980 Percent	1981-1985 Mean	1981-1985 Percent	1986-1988 Mean	1986-1988 Percent
Broad Cause/Factor								
Pilots	54.0	88.8	57.8	88.7	55.4	91.1	46.6	93.2
Weather	18.0	30.0	17.6	27.0	21.8	35.9	13.0	26.0
Terrain	22.0	36.1	14.4	22.1	13.6	22.4	16.0	32.0
Personnel	6.6	10.8	5.8	8.9	5.2	8.6	4.6	9.2
Instruments/Equipment	1.6	2.6	1.8	2.8	3.0	4.9	3.6	7.2
Airframe	2.4	3.4	1.8	2.8	5.2	8.6	2.6	5.2
System	0.2	0.3	1.4	2.1	0.4	0.7	2.0	4.0
Airport/Airways	2.2	3.6	1.0	1.5	1.6	2.6	1.0	2.0
Undetermined	0.6	1.5	1.8	2.8	3.0	4.9	0	0
Miscellaneous	3.4	5.5	3.4	5.2	11.0	18.1	0	0
Total Accidents	60.8		65.6		60.8		50.0	

Mean: Refers to the average of accidents during the period.
Source: NTSB Annual Review of General Aviation Aircraft Accident data.

terms of glider flight time. The total accident rate and fatal accident rates per 100,000 hours flown decreased, respectively, from 40 and seven in 1970 to 14 and four in 1988. This reflects a decrease of 65 percent for total accidents and 42 percent for fatal accidents, respectively.

Most Accidents Occurred in Approach/Landing

A review of phase of operation involving glider accidents as reported in the National Transportation Safety Board (NTSB) annual analysis of glider accidents reveals that approximately 70 percent of the accidents occurred during approach/landing and 20 percent during takeoff/initial climb. Glider accidents broken down by phase of operation during five-year periods is shown in Table 2. The distribution of accidents by phase of operation shows few changes since 1970.

Pliots Cited in Accidents

A review of the causes and factors involved with glider accidents published in the NTSB annual review of general aviation accident data

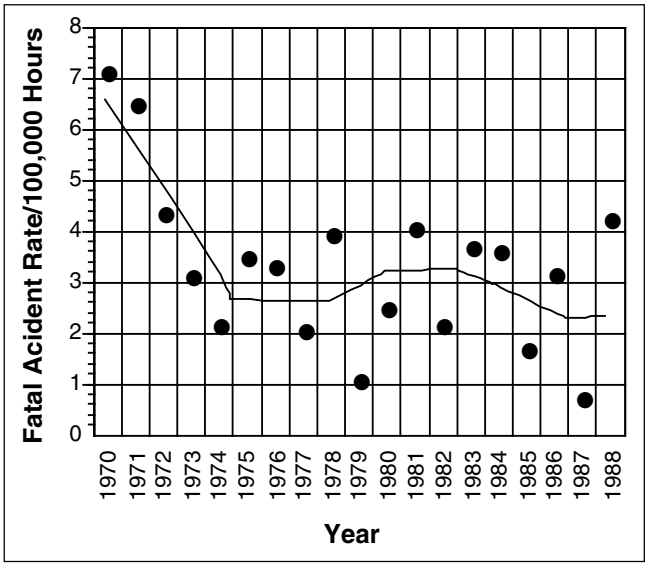


Figure 4

for the period between 1970 and 1988 reveals that the pilot was cited as a cause or a factor in approximately 90 percent of the accidents and that weather and terrain combined were cited as causes or factors in approximately 60 percent of the accidents. There was little change in the cause and factor determination during the period. The grouping of cause and factor determinations of all glider accidents for five-year intervals during the 1970-1988 period is shown in Table 3. ♦

Reports Received at FSF Jerry Lederer Aviation Safety Library

Reports

Airline Accident Prevention Management Factors / Capt. L. Homer Mouden (retired). — Herndon, Va. U.S. : Aviation Research & Education Foundation (525 Herndon Parkway, Herndon, VA 22070 U.S.), 1991. 41 p.

Key Words
1. Aeronautics — Accidents — Prevention.
2. Aeronautics — Safety Measures.
3. Airlines — Management.
4. Airlines — Operational Procedures.
5. Aeronautics, Commercial — Safety Measures.

Summary: The purpose of the study was to determine what a representative sampling of North American airlines' senior management and safety officers considered to be the most effective factors in preventing accidents in their airlines. Confidential interviews were conducted with 53 persons in 15 airlines and seven aviation organizations. Effective communications, training and standard operating procedures were the three factors most consistently mentioned … . Special emphasis on at least all of the following factors was essential for ensuring that any airline had an effective safety program. These were accident/incident investigation, airfield and station inspections, crew resource management training, employee safety committees, flight data analysis, internal and outside audits, quality assurance/quality control in maintenance, safety administration and safety boards. The project was also tasked to develop one or more conceptual safety organizations based on the knowledge and information gained through this study. Three concepts are presented: Inclusive Safety Departments, Departmentalized Safety Departments and Safety Program Committees. [Modified Executive Summary]

Airline Competition: Effects of Airline Market Concentration and Barriers to Entry on Airfares. Report to Congressional Requesters/United States General Accounting Office. — Washington, D.C. : U.S. General Accounting Office**, [1991]. Report GAO/RCED-91-101. 64 p. ; 28 cm.

Key Words
1. Barriers to Entry (Industrial Organization).
2. Airlines — Rates — United States.
3. Airlines — Competition — United States.
4. Market Share.

Summary: This report is one in a series of GAO reviews on competition in the nation's airline industry. It presents estimates of how several factors, such as an airline's market share and airport congestion, as well as barriers to market entry, affect air fares. It also discusses the policy implications to the GAO analysis. To conduct this analysis, GAO developed an econometric model that examines how several competitive conditions influence an airline's fare and market share on a route. Because no single factor has a large impact on fares, a policy designed to affect any single factor or entry barrier is not likely to have a large impact on fares across all routes. However, such policies may have substantial effect on certain kinds of routes or passengers. Factors discussed in the report which tend to result in higher fares include slot restrictions, majority-in-interest clauses, code-sharing agreements, market shares, airline operating costs and congested airports. [Abbreviated Results]

Airport Capacity: Civilian Use of Military Airfields Has Added Little to System Capacity. Report to the Chairman, Subcommittee on Aviation, Committee on Commerce, Science and

Transportation, U.S. Senate/ U.S. General Accounting Office. — Washington, D.C. : U.S. General Accounting Office**, [1991]. Report GAO/RCED-91-130. 16 p. ; 28 cm.

Key Words
1. Air Bases — United States — Joint Civil-Military Use.
2. Airport Capacity.

Summary: GAO found that the 20 military airfields currently supporting joint use provide only marginal airport capacity and little relief to congestion and delays at major metropolitan airports. This is primarily because most current joint-use airfields are not located in major metropolitan areas where demand for air travel is high and are not near congested major airports. Three conditions should exist for an airfield to add significantly to airport capacity and relieve congestion at major airports. First, the joint-use airfield must be located in a major metropolitan area and be near enough to a congested airport so that it is a reasonable alternative for air travelers. Second, the airfield should be in demand by either commercial aviation or general aviation that is not currently served by other unconnected airports in the immediate area. Third, the joint-use airfield should not have its particular demand — passenger or general aviation — limited by military restrictions. [Abbreviated Results]

Cross-level Inferences of Job Satisfaction in the Prediction of Intent to Leave. Final Report/L. Alan Witt, Chan M. Hellman (Civil Aeromedical Institute). — Washington, D.C.: U.S. Federal Aviation Administration, Office of Aviation Medicine ; Springfield, Va., U.S. : Available through NTIS*, [1991]. Report DOT/FAA/AM-91-15. 7 p. ; 28 cm.

Key Words
1. United States — Officials and Employees.
2. United States — Federal Aviation Administration.
3. Decisions-Making.
4. Job Satisfaction.

Summary: An emerging literature has demonstrated that proportionately more dissatisfied employees intend to leave their employing organization while proportionately more satisfied employees intend to remain. The purpose of the present study was to apply criteria for aggregation of individual-level data to the group-level using a measure of job satisfaction in the prediction of aggregated group-level intent to leave. Data collection from 5,586 employees of the FAA provided partial support for aggregation. These results have general implications for the use of individual-level job satisfaction scores as predictors of group-level intent to leave.

The Delayed GPWS Response Syndrome/Captain J. L. DeCelles (retired). — Herndon, Va. U.S. : Aviation Research & Education Foundation (535 Herndon Parkway, Herndon, VA 22070 U.S.), 1991. iv, 24 p. in various pagings.

Key Words
1. Airplanes — Cockpits — Warning Systems.
2. Air Pilots — Training.
3. Airplanes — Piloting — Safety Measures.
4. Ground Proximity Warning System (GPWS).

Summary: This study, based on 86 completed questionnaires mailed to randomly selected members of the Air Line Pilots Association (ALPA), found that some airline pilots continue to wait too long to respond to cockpit devices that warn them that their aircraft are flying too close to the ground. The pilots' delayed response resulted from a number of factors, including a high rate of false and nuisance warnings from first-generation Ground Proximity Warning Systems (GPWS), human factors problems, and shortcomings in training and procedures. The study makes several recommendations to the U.S. Federal Aviation Administration (FAA), including emphasizing acceptable procedures for GPWS pull-up warnings, ensuring airplane flight manuals and training curricula of all GPWS-equipped U.S. airlines prescribe the aforementioned procedures, requiring that GPWS-equipped U.S. carriers include a ter-

rain-closure GPWS pull-up warning in all initial and recurrent simulator training sessions; setting deadlines for upgrading all first-generation GPWS equipment; and, ensuring that the minimum terrain clearance standards used by GPWS are compatible with those used in establishing minimum altitudes for radar vectors and for approach charts. [Abbreviated Summary]

*U.S. Department of Commerce
National Technical Information Service (NTIS)
Springfield, VA 22161 U.S.
Telephone: (703) 487-4780

**U.S. General Accounting Office (GAO)
Post Office Box 6012
Gaithersburg, MD 20877 U.S.
Telephone: (202) 275-6241

Accident/Incident Briefs

This information is intended to provide an awareness of problem areas through which such occurrences may be prevented in the future. Accident/incident briefs are based upon preliminary information from government agencies, aviation organizations, press information and other sources. This information may not be accurate.

Offset Approach Lures Unwary Pilot

British Aircraft Corp. BAC One-Eleven: Minor damage. No injuries.

The copilot was at the controls during the midafternoon flight. A missed approach was executed because the runway was not visible when the aircraft arrived at the missed approach point (MAP). Another approach was flown, this time to a different runway. Again, the copilot had not gained sufficient visual reference upon arrival at the minimum descent altitude (MDA); because the aircraft had not reached the missed-approach point, the aircraft was levelled off and flight continued toward the MAP. However, this approach procedure was offset five degrees from the runway centerline, and the aircraft was left of the centerline and above the glideslope when the runway was sighted at 0.7 nautical miles from touchdown. The cloud base was at 400 feet and there was a slight tailwind.

At that point, the pilot took control of the aircraft for landing. He reduced power and executed an S-turn and landed while the aircraft was in a 16-degree left bank. The left wingtip scraped the runway surface, and the wing and flap were damaged. There were no injuries among the five crew members and 77 passengers, and the landing was completed without further incident.

The pilot was cited for poor landing judgment; airline management was cited for inadequate advice in operation manuals concerning procedures to follow at MDA during offset approaches; and, the government aviation agency was cited for lack of standards.

Inattention Leads to Incident

Boeing 767-200: No damage. No injuries.

When the twinjet air carrier aircraft levelled off at its cruising altitude of FL390, its airspeed slightly exceeded the desired value, and the autothrottles reduced the power to bring the airspeed back to the proper setting. However, when power was automatically reapplied, the left engine did not respond but remained at .98 EPR (engine pressure ratio); this caused the right engine to reach the maximum cruise thrust of 1.54 EPR as the automatic system attempted to hold airspeed.

The flight crew failed to detect the thrust loss on the left engine, and the airspeed bled from 250 knots (.8 Mach) to 180 knots (.6 Mach) during a period of seven minutes. The autopilot continued to hold altitude and ground track during this time, although an increasing amount of aileron deflection was required to do so.

The aircraft rolled 15 degrees to the left when the autopilot was no longer able to maintain control with the asymmetric power situation. The crew disconnected the autopilot and took recovery action. The malfuctioning left engine was shut down and a single-engine landing was accomplished without further incident at an alternate airport.

Low Turn Brings Aircraft Down

De Havilland DHC2 MK.1 Beaver: Aircraft destroyed. Fatal injuries to one.

A pilot and two passengers were aboard a mid-afternoon air taxi flight. During a landing at a seaplane base in a bowl-shaped cove, the aircraft touched down long on water swells and the pilot elected to go around and make another landing attempt.

During the go-around, the pilot made a steep turn at low altitude to avoid buildings and rising terrain. The aircraft entered a steep descent and collided with a wooden walkway along the shoreline. The aircraft was destroyed. The pilot was fatally injured, and both passengers were seriously injured.

Listed as possible cause factors were unfavorable wind, rough water surface, a late abort from a landing attempt and inadvertent stall.

Weather Takes Its Toll

Cessna 402: Aircraft destroyed. Fatal injuries to 10.

The aircraft was during approach during an air taxi flight with one pilot and nine passengers aboard. Weather included low ceilings and reduced visibility. The pilot had been briefed on the weather and received an inflight weather advisory. He had encountered instrument meteorological conditions only once in the previous nine months.

The aircraft collided with a mountain at 2,600 feet mean sea level (msl). The aircraft was destroyed and all occupants were killed.

Causal factors included improper preflight planning and disregarding of an inflight weather advisory. In addition, the flight continued into adverse weather.

Runway Disappears On Short Final

Cessna Citation: Substantial damage. No injuries.

The pilot was completing a late night flight. In addition to the pilot, there were two passengers aboard the business jet.

The cross-country flight had been made on an instrument flight rules (IFR) clearance. However, the pilot cancelled his flight plan when he had the destination airport in sight, slightly after 0200 hours.

At a height of approximately 100 feet on final approach, the aircraft entered a fog bank. It collided with the ground approximately one-quarter mile past the far end of the runway. There was no fire, but the aircraft sustained substantial damage to the landing gear and lower portions of the fuselage. The three occupants evacuated the aircraft without injury.

Manual Gear Extension Proves Faulty

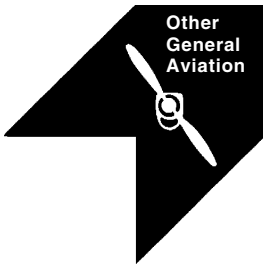
Beechcraft B55 Baron: Substantial damage. No injuries.

After takeoff for a business trip, the pilot of the twin-engine aircraft noticed that the airspeed was less than he was accustomed to at this stage of the flight. Checking the instrument panel, he noticed that the red, gear unsafe warning light was illuminated, which indicated that the landing gear was not fully retracted.

He tried to recycle the gear by first lowering it using the normal procedure. He was not successful. After notifying the flight service station (FSS) at his airport of the problem and that he was returning to land, the pilot put the airplane on autopilot, disengaged the landing gear motor and began to operate the manual gear hand crank. He first turned the crank to the right, than reversed the procedure and turned it to the left. In neither case did he get an indication that the gear was down and locked.

The pilot then coordinated a low fly-past with the FSS so one of its employees could observe the underside of the fuselage. He confirmed that the gear was not fully extended. The pilot requested that emergency equipment stand by and proceeded with a wheels-up landing which damaged the aircraft substantially but resulted in no injuries to the pilot.

Investigation revealed that deterioration of one of the two brushes in the gear motor made that unit unserviceable, preventing the landing gear from retracting fully after the takeoff. The pilot also was cited because he did not follow the proper procedure for manual gear extension. He was experienced with the aircraft type but had never used the manual gear extension procedure in circumstances where the regular system had actually failed. The procedure he followed was inconsistent with the recommended emergency procedure.



One-point Landing Breaks a Leg

Cessna 172N: Substantial damage. Minor injuries to two.

The pilot had a private pilot certificate and a total flying time of 64 hours, and had completed a check flight approximately three weeks previously. He and two passengers had completed a cross-country flight and the aircraft had entered the traffic pattern to land at the destination airport.

The weather was favorable with a 10-knot wind from 240 degrees, and the landing was to be made on Runway 25. The pilot selected 40 degrees of flaps. After a flatter-than-usual final approach, the aircraft was seen to bounce on touchdown and to porpoise along the runway for nearly 1,200 feet before the pilot executed a go-around. A second approach was flown, this time with 20 degrees of flaps and an airspeed of 65 knots on final. The aircraft was seen to touch down on the nosewheel and to bounce four times. The nose gear collapsed on the fifth contact with the runway.

There was no fire but the aircraft sustained substantial damage to the nose gear, propeller and forward fuselage. The three occupants vacated the aircraft without assistance, although the two passengers received minor injuries.

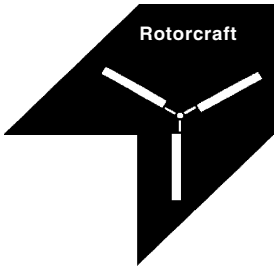
Barn Encountered During Takeoff

Piper PA-28-140 Cherokee: Aircraft damaged beyond repair. Minor injuries.

The pilot, with two passengers aboard, had completed the power and pre-departure checks of the single-engine aircraft, and began the takeoff run. Reaching approximately 55 mph, he raised the nose and the aircraft subsequently became airborne at approximately 65 mph. At that point, the pilot noticed that the aircraft was tending to overpitch so he eased forward on the control column and adjusted the elevator trim.

The airspeed remained at 65 mph but the aircraft would not climb; however, the engine seemed to be operating normally. The pilot could not lower the nose because the aircraft was approaching a hedge. Shortly after continuing in the low-level, low-speed condition, the aircraft's right landing gear struck the roof of a hay barn. The pilot immediately cut the power and landed in a field where the aircraft ran into a hedge before stopping. The three occupants were able to evacuate the aircraft with minor injuries, but the aircraft sustained major damage.

Inspection of the engine and the engine controls revealed no mechanical faults that could have caused the loss of power during the takeoff. The aircraft had been within its center-of-gravity limits and was loaded almost to its maximum allowable takeoff weight. When the 19 degree C () temperature and 13 degree C () dew point were plotted on a carburetor icing probability chart, the result predicted moderate icing conditions at cruise power and serious icing at descent power.



Tight Quarters Box Helicopter

Bell 206B JetRanger III: Substantial damage. No injuries.

The pilot was positioning the helicopter within a forestry service compound to park it near the refueling station. It was mid-morning and weather was not a factor.

While air-taxiing, the pilot backed the helicopter into a chain-link fence which was struck by the tail rotor. The pilot quickly reacted by moving the helicopter forward to get it away from the fence — whereupon the main rotor struck the top of a fuel shed in front of the aircraft.

The pilot landed the aircraft with no further incident.

Untimely Gust Upsets Rotorcraft

Bell 47: Substantial damage. No injuries.

During the downwind approach to a swath run, the pilot of the aerial application rotorcraft experienced a wind gust. The result was a main rotor blade stall, which caused the aircraft to descend rapidly.

The helicopter struck the ground and rolled over. The pilot was able to evacuate without injury, but the aircraft sustained substantial damage. ♦