Lessons from the ashes: Ten years of learning with the NTSB

Robert Sumwalt
Sunday Morning
August 27, 2006

6:56
Windy, Cold
Partly cloudy, windy and cold. Highs around 60, northwest wind 4 to 15 mph. Rain showers.
Next rose 7:35 a.m., More 2:30 p.m.
Details, 14-6.

The State

Friday, December 21, 1973
Daily 15¢

10-Gallon
Limit Aske

‘Merry Christmas From The Cre

WASHINGTON (AP) — Energy chief
William E. Simon wished everybody “a
Merry Christmas from the Gas.” Thurs-
day, Simon asked motorists moving up
for new long holiday weekends to use only 10
gallons of gasoline per week.
Simon promised a decision whether or not to order gasoline rationing by
New Year’s Day.

Meanwhile, motorists on the num-
er of days in the week a person can
drive his car are being considered, men-
タル supplied to key members of Con-
gress indicates.

His order consideration is optimum of the Sunday but no gasoline sent to a
second day of the week, the material in
States.

The proposed mandatory restrictions
were among a fall of 20 energy conserva-
tion measures submitted by Simon
Wednesday night to Senate and House
considering emergency energy legislation, ac-
cording to Sen. Paul S. Fannin, D-Ariz.

Fannin, who made the list available to the Associated Press Thursday said
the limits were specified by Simon as
those which the administration wants to
be able to impose if it decides to do so,
during the month-long congressional break
without fear of a veto when Con-

Air Crash
Kills Two

Plane Crashes Near Airport

A two-engine plane crashed in a wooded area between Hatton-
ville and Plant Springs roads Thursday while making a westward ap-
proach to the Columbia airport. The senior vice president of the Federal
Land Bank of Columbia, J. Chappell Moore, 36, and the pilot Michael G.
Frederick, 31, were killed instantly. Another bank executive Roy B.
Price, is in satisfactory condition. Another picture, L.A. (Staff Photo by
Maxine Roberts)

Flood Of Bills
Sent To Nixon

WASHINGTON (AP) — Congress
sent to President Nixon major defense,
air crash legislation, and a

West To Push
2nd Med School

by LEVANA PAGE

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NTSB
Accident investigation school teaches how to find that probable cause

Small clues help unravel mysteries of why planes go down. Tree-strike angles, lineup of parts and pieces all help tell somber stories.

By Robert L. Swarts III
AFFILIATE, Boeing 787, Fokker 50
Photos by David Hinchman
The Background Investigation

Seriousy

We want to know everything. Seriously.
The Path to Presidential Appointments

- White House Office of Presidential Personnel narrows candidate list, checks references and makes single recommendation to the president.

- Candidate completes battery of forms in preparation for background check.

- Office of the Counsel to the President oversees background check through the FBI, IRS, Office of Government Ethics and the agency’s ethics official.

- No conflicts found: Counsel clears the candidate.

- Conflicts found: Office of Government Ethics and the agency’s ethics officer work with candidate to address potential problems or conflicts.
The Path to Presidential Appointments

1. The Office of Presidential Personnel submits a nomination to the Senate through the Office of the Executive Clerk.

2. A Senate committee holds a confirmation hearing and then votes.

3. Confirmation moves to the full Senate for a vote.

   - Nomination approved.
   - Nomination disapproved.

4. The President signs the commission.

5. The official is sworn in.
NTSB Response Operations Center
Determining the level of response
Different Types of NTSB Investigations

Regional Investigation
Different Types of NTSB Investigations

Go-Team Investigation
“Plant the Flag” Media Briefing
The Launch
Enroute
Arrival on Scene
Boots on the Ground

- Powerplants
- Structures
- Systems
- Operations
- Human performance
- Survival factors
- Airworthiness
- ATC
- Transportation Disaster Assistance
- Meteorology
- Recorders
The Hunt for ...
The “Black Boxes”
Meeting with Elected Officials
Family Briefings
Media Briefings
Nightly Progress Meetings
In the past decade…

… what have I learned?
First, a few things I haven’t learned.

Always have clean clothes when on call!!
“The first rule of survival in Washington is never do or say anything that you don’t want to read about on the front page of The Washington Post.”
The one take-away

Insist on PROFESSIONAL DISCIPLINE AND INTEGRITY in your operation.
Bedford, MA
May 2014
American Airlines flight 1400
“I’m ambivalent right now. I got six months to go.”

- Captain of AA 1400
“The casual atmosphere in the cockpit before takeoff affected and set a precedent for the pilots’ responses to the situations..., eroded the margins of safety provided by the standard operating procedures and checklists, and increased the risk to passengers and crew.”
<table>
<thead>
<tr>
<th>Who</th>
<th>Statement / <em>editorial comment</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>F/O</td>
<td>oh we talked about you know we want fifteen acres.</td>
</tr>
<tr>
<td>Capt.</td>
<td>[expletive].</td>
</tr>
<tr>
<td>F/O</td>
<td>the house'll sit kind of in one of the front corners but back up off the road where it can't be seen.</td>
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<td>Capt.</td>
<td>yeah...that's— yeah.</td>
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<td>F/O</td>
<td>and we— she wants a road track built on the property.</td>
</tr>
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<td>Capt.</td>
<td>aww man that'd be cool as [expletive].</td>
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Approximate location of stopped aircraft.
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<tr>
<td>05:52:11</td>
<td>Capt.</td>
<td>“I’m easy buddy.”</td>
</tr>
<tr>
<td>05:56:14</td>
<td>Capt.</td>
<td>“run the checklist at your leisure.”</td>
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<td>05:57:36</td>
<td>Capt.</td>
<td>“Before starting, at your leisure.”</td>
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<tr>
<td>05:58:12</td>
<td>Capt.</td>
<td>“Start engines, your leisure.”</td>
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<tr>
<td>05:59:42</td>
<td>Capt.</td>
<td>“he said it’s okay to turn one at your leisure.”</td>
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<tr>
<td>05:59:45 to 06:01:47</td>
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<td><em>Crew engages in two minutes of non-pertinent conversation during engine start</em></td>
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<td>06:03:12</td>
<td>Capt.</td>
<td>“finish it up, your leisure.”</td>
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<td>06:03:16</td>
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<td><em>First officer initiates and captain participates in, 40 seconds of nonpertinent conversation.</em></td>
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<td>06:05:15</td>
<td>F/O</td>
<td>“churlieser [‘at your leisure’ spoken very fast], Comair one twenty one ready to go.”</td>
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“The flight crew’s noncompliance with standard operating procedures... and both pilots’ nonpertinent conversation, most likely created an atmosphere in the cockpit that enabled the crew’s errors.”
Intentional non-compliance leads to other problems

• LOSA data revealed that, compared to crews who followed SOPs, crewmembers who intentionally deviated from procedures:
  – averaged making 3 times more errors
  – mismanaged more errors
  – found themselves in more undesired aircraft situations
## Accident Prevention Strategies

Source: Boeing study of accident prevention strategies

### Hull-loss Accidents over 10 Year Period

<table>
<thead>
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<th>Primary Factor</th>
<th>Percentage of Accidents</th>
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<td>Other operational procedural considerations</td>
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Each bar represents the percentage of hull-loss accidents that contained at least one instance of the listed prevention strategy.

- **138 Accidents**  **5,686 Fatalities**

- Source: Boeing study of accident prevention strategies
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“Learn from the mistakes of others. You won’t live long enough to make them all yourself.”