

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

February 27, 2008

ADDENDUM 1 to

Group Chairman's Factual Report – Maintenance Organization and Processes

A. ACCIDENT

Location: Sanford, Florida
Date: July 10, 2007
Time: 0835 Eastern Daylight Time (EDT)
Airplane: Cessna 310R, N501N
NTSB Number: NYC07MA162

B. GROUP

Chairman: Michael Huhn
Air Safety Investigator
National Transportation Safety Board

Member: Robert Potts
Aviation Safety Inspector
Federal Aviation Administration

C. SUMMARY

On July 10, 2007, about 0835 eastern daylight time¹, a Cessna 310R, N501N, was destroyed during a collision with trees and residential homes while performing an emergency diversion to the Sanford Orlando International Airport (SFB), Sanford, Florida. The certificated airline transport pilot and the commercial pilot were fatally injured. Three persons on the ground were fatally injured, and four were seriously injured. A post crash fire consumed the airplane and two single-family homes. Visual meteorological conditions prevailed, and an instrument flight rules (IFR) flight plan was filed for the personal flight that was conducted under 14 CFR Part 91. The airplane departed Daytona Beach International Airport (DAB), Daytona Beach, Florida about 0822 and was destined for Lakeland Linder Airport (LAL), Lakeland, Florida.

¹ All times in this report are eastern daylight time based on a 24-hour clock

Diversions Details

Shortly after reaching a cruising altitude of 6,000 feet, the flight crew declared an emergency to air traffic control (ATC). The crew advised that there was "smoke in the cockpit," and announced their intention to land at SFB. ATC cleared the airplane to fly directly to SFB and descend to 2,000 feet. Radar data indicated that the accident airplane turned toward SFB and commenced its descent. ATC then cleared the accident crewmembers to "to land any runway." The last radio transmission from the airplane occurred about 0833. It was terminated in mid-sentence and appeared to include the phrase "shutoff all radios, elec." The last radar return from the accident airplane was about 0835, approximately 1/2-mile east of the accident site.

D. ADDENDA

1.0 NASCAR INFORMATION

1.1 NASCAR Personnel

According to NASCAR, at the time of the accident, the operator employed approximately 25 pilots, and operated approximately 1,950 flights per year

1.2 Revised Airplane Discrepancy Forms

In August 2007, in direct response to the Safety Board investigators' outbrief several days after the accident, the operator implemented the use of revised airplane discrepancy reporting forms (Fig 1). These new forms were serialized, and incorporated a number of additional specific entry categories. According to NASCAR personnel, every flight crewmember and maintenance technician was individually briefed on these changes. In addition, these changes were communicated in memos, and a flight crewmember group meeting.

1.3 Revised SOP (Chapter 10)

In July 2007, in direct response to the Safety Board investigators' outbrief several days after the accident, the operator revised Chapter 10 ('Maintenance') of its SOP. The July 30 2007 revision expanded the guidance regarding maintenance and equipment discrepancies. The revision also added a new section (10.8.3), which explicitly granted grounding authority to the aviation director, the DoM, the chief pilot, "any company maintenance technician," and "any pilot assigned to flight duty."

According to NASCAR personnel, every flight crewmember and maintenance technician received an updated SOP, and was personally briefed on new procedures and responsibilities. Like the discrepancy sheet changes, these changes were communicated in memos, and a flight crewmember group meeting.

As of the date of this factual report, the operator was seeking IS-BAO registration of their SOP. 'IS-BAO' stands for "International Standard for Business Aircraft Operations." It is a code of best practices that was developed by the International Business Aviation Council (IBAC).

According to the IBAC web site, the fundamental purpose of IS-BAO “is to foster standardized, safe and highly professional aircraft operations.”

1.4 Maintenance Tracking Report

Shortly after the accident, the operator implemented an additional maintenance tracking tool. The ‘Maintenance Next Due Report’ (Fig 2) was an expansion of the capabilities of the maintenance tracking software (‘Avtrak’) that the operator was already using. This tool provided an on-demand report, available to pilots, maintenance, and other NASCAR personnel, that listed the upcoming scheduled maintenance requirements for each particular airplane in the operator’s fleet.

1.5 Duties of Cessna 310 Primary Technician

In response to specific questions by Safety Board investigators, the operator stated that the Cessna 310 primary technician was not the primary technician on any of the operator’s other airplanes, but that “he was qualified/approved to perform maintenance on other aircraft.” Also in response to investigators’ questions, the operator stated that the duties of the Cessna 310 primary technician included the following:

- Assist in the maintenance of all aircraft facilities, equipment and grounds.
- Launch and receive flights originating from Aircraft Operations.
- Arrange fuel loads and monitor fueling.
- Perform flight inspections on company aircraft.
- Cleaning interiors and exteriors of aircraft.
- Assist in maintaining hangar facilities and grounds to meet the highest possible standards of safety and appearance.
- Repair and maintain ground support equipment.
- Towing and parking of Company and transient aircraft using the NASCAR facility.
- Proper handling and storage of hazardous materials used on a daily basis.

The operator stated that the technician’s proportion of time spent on the accident airplane varied, and “was dependent upon flight schedule/maintenance requirements of aircraft.”

1.6 Airplane Dispatch

NASCAR did not have a dedicated dispatcher or dispatch department. The closest arrangement that the operator had was the flight administration department and the flight coordinator position. The primary function of the department and personnel was to coordinate airplanes, passengers, pilots and trips. These personnel did not possess or provide explicit information regarding the airworthiness status of the airplanes; their information was typically limited to whether an airplane remained on, or was removed from, the flight schedule.

Pilots typically telephoned into the flight administration department each afternoon to check on whether they had been scheduled for any upcoming trips. The pilots were responsible for conducting their own flight planning, weather data gathering, weight and balance calculations, and other related activities for each flight.

The July 30 2007 revision of the SOP added the requirement (paragraph 10.8.2.B) that, prior to every flight, the maintenance and flight crew personnel must conduct a face-to-face meeting regarding the airworthiness of the airplane.

1.7 Airplane Status Information

At the time of the accident, there was no mechanism for personnel to readily determine airplane airworthiness status. Subsequent to the accident, the operator made several changes to improve communication and awareness of airplane airworthiness status. These changes included:

- An aircraft status board was made available in the maintenance department for access by flight crewmembers.
- An aircraft status log was placed in each aircraft discrepancy log.
- For airplanes at DAB, maintenance technicians now denote grounded airplanes by affixing a "Red Tag" near the cabin entry door. This "Red Tag" designates the airplane as being unavailable for flight. New SOP guidance has been developed as follows:

The aircraft shall be placarded "IN MAINTENANCE" near the entrance door signifying that the aircraft is "DOWN" for maintenance. After maintenance, the placard shall be removed by the Aircraft Maintenance Technician signifying that the aircraft is "Returned to Service."



AIRCRAFT DISCREPANCY FORM

N800R Hawker 800XP Date:

** All shaded areas to be filled out by the pilot **

Discrepancy/When Discovered: (only *one* Discrepancy per sheet)

<input type="checkbox"/> Pre-Flight	<input type="checkbox"/> In-Flight	<input type="checkbox"/> Post-Flight

Entered By:	Location:
<input type="checkbox"/> Aircraft Grounded	<input type="checkbox"/> MEL Item <input type="checkbox"/> Non MEL

Troubleshooting Action: (if applicable)

MEL Status:

<input type="checkbox"/> Deferred per MEL	By: _____
	Date: _____

Corrective Action:

Released for Flight:	Date: _____
Accepted for Flight:	Date: _____

Flight Test Results:

<input type="checkbox"/> Flight Check OK
<input type="checkbox"/> Repeat problem - refer to new Discrepancy Sheet #

White - Aircraft

Yellow - Maintenance

Figure 1 – Revised Aircraft Discrepancy Form

COPY

Maintenance Next Due Report

Log Date -- 22-Jan-2008
Open/dues service information not included

N500R

Projected Through:
2295.6 Hours TT
1251 Landings

21-Apr-2008 Date
1464.3 APU Hours
1263 APU Cycles

Current TT 2196.6
Current Landings 1200
Current Hr Mtr 2196.6

Phone: (303) 745-5888 FAX: (303) 745-1507

Aircraft Make Dassault
Aircraft Model Falcon 50EX
Aircraft Serial No. 323
Airworthiness Dat 04-Apr-2002
FAR Operation 91-3

COMPONENT TIMES

Position	Logbook	Description	Serial Number	Total Time	Total Cycles	TSO	CSO
1	Engine	Honeywell TFE731-40-1C	P-115331	2196.6	1200	2196.6	1200
2	Engine	Honeywell TFE731-40-1C	P-115335	2196.6	1200	2196.6	1200
3	Engine	Honeywell TFE731-40-1C	P-115333	2196.6	1200	2196.6	1200
1	APU	Honeywell GTC P36-100(A)	P-436	1329.3	1200	1329.3	1200

ATA Log	App	Description	Part Number	Source Document	Frequency	Completed With	Next Due	Remaining Hrs/Cyc/Cal
315045*	REC	DEEC Download, Engine Trend Monitoring		ECTM Manual		2189.6		
Mig#		Notes: Trend monitor [31 DAY Initial Req.] [5 DAY Window]			31 DAY	1189	2/3/2008	12 Days
052501	MAN	Basic Check		DMD 11765	200 Hrs	2189.6	2389.6 Hrs	193.0 Hrs
Mig#05-050		Notes: [CW DAB [5 DAY Window]			60 DAY	1189	3/1/2008	39 Days
052506	MAN	Servicing Operation		DMD 11765	200 Hrs	2189.6	2389.6 Hrs	193.0 Hrs
Mig#05-050		Notes: [CW DAB [5 DAY Window]			60 DAY	1189	3/1/2008	39 Days
325135	MAN	Check Tire Pressure		DMD 11765	200 Hrs	2189.6	2389.6 Hrs	193.0 Hrs
Mig#05-050		Notes: [CW DAB [5 DAY Window]			60 DAY	1189	3/3/2008	41 Days
351131*	MAN	3rd Crewmember O2 Mask Overhaul (Cros)	MC-10-12-151 101446			0.0		
271156.1	MAN	Functional Test of Alleron ARTHUR - Q Unit(43C)		DMD 11765	72 MOS	4/1/2002	4/1/2008	70 Days
Mig#27-326		Notes: [2 MOS Window]			72 MOS	0.0		
284241	MAN	Functional Test of Fuel Temperature Probe-Post SB F50-0136		DMD 11765	72 MOS	4/4/2002	4/4/2008	73 Days
Mig#28-430		Notes: [2 MOS Window]			72 MOS	0.0		

empowered by
AVtrak

N500R

Maintenance Next Due Report (GN-7003)

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22-Jan-2008

Figure 2 – Sample ‘Maintenance Next Due Report’