

**National Transportation Safety Board
Office of Aviation Safety
Washington, DC**

October 30, 2009

**Miscellaneous Items Regarding 180 Degree Turn Restriction on
Columbia Airport Runway 11/29**

A. Accident: DCA08MA098

Location: Columbia, South Carolina
Date: December 19, 2008
Time: 2353 EDT ¹
Airplane : Learjet Model 60, N999LJ
Operator: Global Exec Aviation

B. Purpose of Entry

During the course of the investigation a discrepancy was noted between airport documentation and Air Traffic Control references regarding a notation prohibiting airplanes from making 180 degree turns on runway 11/29. The Survival Group Chairman, and an NTSB Air Traffic Control Investigator requested supporting and historical documentation from the Columbia Airport Authority and the FAA. The documentation, records of conversation, and email traffic is included in this entry.

C. Summary

On September 19, 2008, at about 11:53 p.m. EDT, a Learjet Model 60 (N999LJ) operated by Global Exec Aviation as an on-demand passenger flight under 14 CFR Part 135 overran runway 11 while departing Columbia, South Carolina, enroute to Van Nuys, California. The 2 crewmembers and 2 of the 4 passengers were fatally injured, the other 2 passengers suffered serious injuries. The aircraft was destroyed by extensive post-crash fire. Weather was reported as clear with light winds.

D. Documentation

- a. Columbia Airport Letter
- b. NTSB FAA Request and Response
- c. Columbia Airport remarks document
- d. Email traffic between NTSB and FAA

¹ All times are reported in Eastern Daylight Time unless otherwise noted.



COLUMBIA METROPOLITAN AIRPORT

ROBERT H. WADDLE
EXECUTIVE DIRECTOR

TELEPHONE 803-794-3427
3000 AVIATION WAY
WEST COLUMBIA, SOUTH CAROLINA 29169-2190

October 16, 1984

MR HERB FENGLE
FEDERAL AVIATION ADMINISTRATION
AIR TRAFFIC CONTROL TOWER
2821 AVIATION WAY
WEST COLUMBIA SC 29169

Dear Herb:

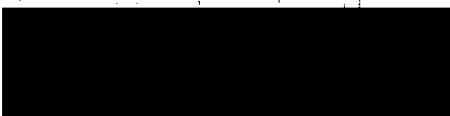
The purpose of this letter is to provide the Columbia Air Traffic Control Tower with permission to allow 180° turns by aircraft less than 12,500 pounds on Runway 11/29 and Runway 5/23.

Please exercise care to ensure that aircraft above the weight limit listed above are not allowed to make 180° turns on either of the Runways.

Sincerely,



Robert H. Waddle, A.A.E.
Executive Director



bs

xc: Bob Patterson
Charles Taylor

ATTN: MARK George

A modern aviation facility governed by the RICHLAND METROPOLITAN AIRPORT COMMISSION

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NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety

Subject: Accident / Incident Investigation Support Request
To: Federal Aviation Administration, Manager, Recommendation and Quality Assurance Division, AAI-200

From: NTSB, Name and Office: Dan Bartlett, AS-30

Request Number: 09-051 **Date:** February 3, 2009

Event: 4 Fatal, 2 Injuries N999LJ/LR60, IFR, Saturday, September 20, 2008 at 0356Z, crashed on departure from runway 11 at Columbia, SC (CAE) enroute to Van Nuys, CA. While still on the runway, one of the pilots said roll the equipment, we're going off the end. The tower personnel noticed sparks from the aircraft. The aircraft damaged the localizer and approach lights to runway 29. The airport was initially closed, this was the only available runway due to construction. WX: wind 060@8, visibility 10, sky clear. Air traffic services normal.

DESCRIPTION OF SUPPORT REQUESTED

Per the CAE Airport/Facility Directory (AFD) and Jeppesen Charts for Columbia Metropolitan Airport, SC, all 180 degree turns on grooved surfaces are prohibited.

1. Request a copy of published ATC directive(s) current at the time of the accident directing air traffic controllers to avoid/prevent 180 degrees turns on grooved surfaces of the airport.
2. Request documentation of training related to same.

Approved

Signature redacted

NTSB Contact / Telephone

Dan Bartlett, 202-xxx-xxxx

----- For Federal Aviation Administration Use -----

Date Received _____

AAI-200 Log Number _____

To: _____

Date Forwarded: _____

From: Manager, Recommendation and Quality Assurance Division, AAI-200

The above request has been received from the NTSB. Your support in providing the data not later than ten working days or as soon as possible is appreciated.

Please refer any questions on this matter to Mx. xxxxxxxx at xxx-xxx-xxxx.

Date returned to AAI-200: _____

Received by _____ **on** _____

RESPONSE TO NTSB 09-051 N999LJ ACCIDENT CAE 9/20/08

Per the CAE Airport/Facility Directory (AFD) and Jeppesen Charts for Columbia Metropolitan Airport, SC, all 180 degree turns on grooved surfaces are prohibited.

- 1. Request a copy of published ATC directive(s) current at the time of the accident directing air traffic controllers to avoid/prevent 180 degrees turns on grooved surfaces of the airport.**
- 2. Request documentation of training related to same.**

There are no ATC directives instructing air traffic controllers to avoid/prevent 180 degree turns on grooved surfaces of the airport.

Information contained in the Airport/Facility Directory (AFD) is included in the initial, generic training provided to air traffic controllers. However, because the AFD is a publication directed primarily to the piloting community, the information contained therein is generally not included in either national or local ATC directives.

REC_ID	OPER_ID NO REMARK	SUP_OPER_ID	TAB_NAME
671409	-5 7 SGFNT ASPH DETERIORATION ON TWY P.	1158494	AIRPORT
671410	-5 6 NOISE ABATEMENT PROCEDURE: NO TURNS BLO 1000 FT FOR TURBINE ENGINE ACFT UNLESS DIRECTED BY ATC.		0 AIRPORT
671411	-5 5 SPORTS COMPLEX WITH NUMEROUS FLOOD LGTS APRXLY 6500 FT FROM APCH END RY 11.		0 AIRPORT
671412	-5 4 BIRD ACTIVITY ON & IN VCNTY OF ARPT.	439804	AIRPORT
671413	-5 3 PPR AMGR BFR ACFT TRNSPG XPLOS LANDS AT CAE. OBTAIN PMSN DURG BUS HRS 0830-1700 MON-FRI EXCP HOLS 803-822-5000.		101417 AIRPORT
671413	101417 3 PPR FROM AMGR FOR ALL ACFT TRNSPG EXPLOSIVES. OBTAIN LNDG PMSN DURG BUS HRS 0830-1700 MON-FRI EXCP HOLS CALL 803-822-5261.		439805 AIRPORT
671413	439805 3 PPR FROM AMGR FOR ALL ACFT TRNSPG EXPLOSIVES. OBTAIN LNDG PMSN DURG BUS HRS 0830-1700 MON-FRI EXCP HOLS CALL 803-822-5050.		590907 AIRPORT
671414	-5 2 OPERATION OF ULTRALIGHT VEHICLES PROHIBITED.		0 AIRPORT
671415	-5 1 FEE FOR COMMERCIAL ACFT OVER 15000 LBS.		0 AIRPORT
732687	-5 1 ARPT COMMISSION.	1822646	AIRPORT_CONTACT
732687	1822646 1 AIRPORT COMMISSION.		0 AIRPORT_CONTACT
732688	-5 1 ALSF2 ALSO OPERS AS SSALR.		0 RUNWAY_END
732689	-5 1 TORA - 8000 FT; TODA - 8000 FT; ASDA - 7000 FT; LDA - 7000 FT. ASDA HAS ADDNL 1000 FT FULL STRENGTH STWY; LDA HAS ADDNL 1000 FT FULL STRENGTH STWY FOR ROLLOUT.		439814 RUNWAY_END
732690	-5 1 TORA - 8000 FT; TODA - 8000 FT; ASDA - 8000 FT; LDA - 7000 FT.		439815 RUNWAY_END
732691	-5 1 ARPT EXISTED PRIOR TO 1958.		0 AIRPORT
732692	-5 1 TPA FOR PROP ACFT IS 1000' AGL; TPA FOR TURBO PROP IS 1800' AGL.		0 AIRPORT
1640544	338973 8 180 FT FLAGGED/LGTD CRANE LCTD 4094 FT NNE & 287 FT CRANE LCTD 2938 FT FROM THLD RY 11 0500-1700.		707054 AIRPORT
1673739	439812 1 RY 05 ASDA HAS ADDNL 1000 FT FULL STRENGTH STWY.		830888 RUNWAY_END
1673739	830888 1 RY 05 ASDA HAS ADDNL 1000 FT FULL STRENGTH STWY.		830890 RUNWAY_END
1673740	439813 1 RY 05 LDA HAS ADDNL 1000 FT FULL STRENGTH STWY FOR ROLLOUT.		830891 RUNWAY_END
1717973	590908 9 ACFT LNDG WITH EXPLOSIVES OBTAIN PPR FM ARPT OPS 803-822-5050.		0 AIRPORT
1719657	601964 1 RY 05 NON-STD GRADING EXISTS IN THE FIRST 2000 FT OF RY 05 SAFETY AREA.		3274988 RUNWAY_SURFACE_TYPE
1776521	830938 1 ASDA HAS ADDNL 1000 FT FULL STRENGTH STWY.		0 RUNWAY_END
1776522	830939 1 LDA HAS ADDNL 1000 FT FULL STRENGTH STWY FOR ROLLOUT.		0 RUNWAY_END
2350328	7251216 10 ALL 180 DEGREE TURNS ON GROOVED SURFACES PROHIBITED.		0 AIRPORT

25 rows selected.

```
SQL> SELECT O.OPER_ID, O.OPER_TYPE, O.TABLE_NAME, O.TRANS_ID, TO_CHAR(T.TRANS_DATE,'DD-MON-YYYY, HH24:MI'), T.USER_ID
2 FROM OPERATION O, TRANSACTIONS T
3 WHERE O.TRANS_ID=T.TRANS_ID AND O.OPER_ID =
4 7251216;
```

OPER_ID O	TABLE_NAME	TRANS_ID	TO_CHAR(T.TRANS_DA	USER_ID
7251216	1 AIRPORT_REMARK	7251215	05-NOV-2008, 13:52	THARRIS

Excerpt from email by NTSB Survival Group Chairman:

[I have found that] 1) the remark about the 180 degree turn was never in the airport master record (Form 5010) until November 2008; and 2) the remark has been in the A/FD continuously since January 2003, and there is evidence that has been in there as far back as 1992.

From: xxx@faa.gov
Sent: Wednesday, March 18, 2009 1:26 PM
To: [NTSB Survival Group Chairman]
Cc: xxx@faa.gov
Subject: RE: Help

XXX

Each day we receive the National Flight Data Digest (NFDD) from the National Flight Data Center (NFDC). Included in this publication are all of the operational flight data related to the total National Airspace System (NAS) in the 50 states and territories, involving airports, navigational aids, communications, etc. The NFDD is disseminated to the military, general aviation user groups and official government users such as NACO, which is responsible for aeronautical charts and related publications.

Any aeronautical information added to our publications must go through NFDC and be published in the NFDD before it can be added to our products. Since the NFDC is the central repository for all aeronautical data for the FAA, they would likely have the complete history file for all changes to the Columbia Metropolitan Airport.

A search of our records indicates that the remark in question was first added in NFDD 160 dated 8/20/80. In researching the files for the Southeast A/FD for those books that are available to me at this time, I can confirm that the remark has been published in every volume of the SE A/FD since 22 Jan 2003. There are two volumes that are not available in our in-house archive 3 Sep 2003 and 27 Oct 2005 therefore we are unable to verify the remark in these two editions. I also found the remark in a printed copy of a Southeast A/FD, effective 15 Oct 1992.

Email from NTSB Survival Group Chairman to FAA, March 18

Is there any easy way to search for this electronically in the old A/FDs? My question is: how far back does this remark go? If possible, it would be nice to know when it first showed up. Also, where does the A/FD information come from? Since this remark has not historically been in the 5010, it seems that the A/FD information does not originate there. Am I wrong?

-----Original Message-----

From: xxx@faa.gov]
Sent: Tuesday, March 17, 2009 12:55 PM
To: xxx@faa.gov
Cc: [Survival Group Chairman]; xxx@faa.gov
Subject: Re: Help

xxx

In researching the printed copies of A/FD we were able to confirm that the remark "All 180 degree turns on grooved surfaces prohibited" was published in the 31 Jul 2008 to 25 Sep 2008 edition of the Southeast A/FD.

If you need any additional information, please contact me.

FAA/ATO-W/AVN/NACO
Airport Mapping Team
1305 East-West Highway
AVN-510, SSMC#4, Sta. 5200
Silver Spring, Maryland 20910

From: [Survival Group Chairman]
Sent: Monday, March 16, 2009 9:10 AM
To: [IIC]
Subject: FW: Help

Attachments: CAE_Remarks.txt

These are the results from a query of the FAA databases on 5010s. They are showing no entries in the remarks section about the turn until November 2008, which is almost certainly in error. It shows up coincidentally in too many other places for this to be true. I have my doubts about FAA being to untangle this in my lifetime, so I will probably rely on historic records from [Airport Manager] that indicate it was in place prior to the accident. We do know that it was not in the AFD at the time of the accident, but it was in the 5010. MOUs and LOAs being researched. I will let you know.

-----Original Message-----

From: xxx@faa.gov
Sent: Friday, March 13, 2009 2:47 PM
To: xxx@faa.gov
Cc: [Survival Group Chairman]; xxx
Subject: Re: Help

Something does not add up. I searched all the electronic airport inspection submissions to the FAA HQ ATO NASR database (NASR) done by ASO-600 safety certification inspectors as far back as the first electronic inspection submittal in June 2003, and there was no sign of any remark either added or deleted that read "All 180 degree turns of grooved surfaces prohibited." I can provide documentation if needed.

I searched the Air Traffic, Aeronautical Information Services (AIS) DocuShare library (an eLibrary) and documents go back to around 1992. I saw no sign of this remark. There were old Airport Master Records (FAA Form 5010-1) dated in the 1990's, none of which contained the remark. There was one Form 5010 dated 1997 and signed by you which did not contain the remark. There was one remark about a 180 FT Crane. That is the only remark that had "180" on it prominently. I can provide documentation if needed.

I consulted with AIS lead FAA IT xxxxx, the Air Traffic resident expert on the NASR database, and he did a search of his NASR database. NASR goes back to 1999. Before 1999 he had the GIM database, and at conversion in 1999 from GIM to NASR (due to Y2K concerns) the NASR database was the first database capable of tracking metadata. His search of the metadata revealed no sign of this remark either added or deleted from 1999 until 05 November 2008, when xxxxxx first published the remark. This was the first time this remark appeared.

Below is his response, cut and pasted from his email message to this one, in Verdana 10-pt font, so as to keep all research efforts together. In addition, see xxx's attachment below "CAE_Remarks.txt"

By way of this email message I will also ask the specialists in the FAA's National Aeronautical Charting Office (NACO) Data Evaluation Section (the AFD specialists) to research this for you as well.

The attached includes all the remarks that have ever existed for CAE airport since 1999. It includes remarks that have been modified over time (each successive version can be seen), and remarks that have since been deleted.

The remark in question is the last. It is a general remark, added by THarris on 5 Nov 2008. It has not been modified or deleted since that time.

It was NFDDed in NFDD 217 of 2008

SOUTH CAROLINA NFDD 217 - 19
11/07/2008
COLUMBIA
COLUMBIA METROPOLITAN AIRPORT (CAE) 22209.A
LATITUDE - 33-56-19.8 N LONGITUDE - 081-07-10.3 W
RMK ALL 180 DEGREE TURNS ON GROOVED SURFACES PROHIBITED.
ADDED

AIS Automation, ATO-R

xxx AND xxx

Please read this email message, research any documentation you can find on the remark ""All 180 degree turns of grooved surfaces prohibited." and respond to all addressees. Thank you.

Federal Aviation Administration
Airport Engineering Division AAS-100
800 Independence Ave SW
From: xxx@faa.gov
To: xxx@faa.gov

Cc: xxx@ntsb.gov
03/13/2009 11:32
Subject: Help

xxx - I may have mentioned this to you before but there was an aircraft accident in Columbia, SC, last September. There is a long time standing NOTAM that reads: All 180 degree turns of grooved surfaces prohibited. At the time of the accident it wasn't shown on the AFD. The NOTAM was still active, the 5010 data base had the information but it was not in the AFD.

Are there historical records of old AFD information? This has become a part of the NTSB investigation. Can anyone tell us why it was suddenly dropped from the AFD? When it was dropped?, etc. If you can't answer these questions, can you please let me know who can.

Team Leader, Airport Certification & Safety Airports Division, FAA Southern Region