

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, DC 20594

October 10, 2017

Security Videos

Specialist's Factual Report
By Bill Tuccio, Ph.D.

1. EVENT

Location:	San Juan, Puerto Rico
Date:	June 3, 2017
Aircraft:	Piper PA-23-250, N21WW
Operator:	Air America Inc.
NTSB Number:	ERA17FA195

2. GROUP

A group was not convened.

3. SUMMARY

On June 3, 2017, about 1418 Atlantic standard time, a Piper PA-23-250, N21WW, operated by Air America Inc., was destroyed during impact with water and a reef, and a subsequent postcrash fire, shortly after takeoff from Luis Munoz Marin International Airport (TJSJ), San Juan, Puerto Rico. The commercial pilot sustained minor injuries, two passengers were seriously injured, and one passenger was fatally injured. The on-demand air taxi flight was conducted under the provisions of 14 *Code of Federal Regulations* Part 135. Visual meteorological conditions prevailed and an instrument flight rules flight plan was filed for the planned flight to Benjamin Rivera Noriega Airport, (TJCP), Isla de Culebra, Puerto Rico.

4. DETAILS OF INVESTIGATION




On August 14, 2017, the National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following five security videos on a DVD.



4.1. Recorder Description

The proprietary security cameras recorded in color of varying quality and resolution. There was no sound. Table 1 shows the five camera angles, the video system names assigned to the cameras, and the camera number used for reference in this report. Camera 1 was not pertinent. The quality of Camera 3 was poor and its vantage point did not add any additional information, so its content is

not described in this report. Attachments 1 and 2 contain relevant parts of the video recorded by Camera 4 and 5.

Table 1. Security camera summary.

Camera Number	Video System Camera Name	Exemplar Image
1	C1014 Terminal to Ramp (C1014 INT) – 1444 (image redacted)	
2	D111 Roof Top Gate D4 PTZ	
3	D140 (ER3.1) Roof Top Admirals Club PTZ	

Camera Number	Video System Camera Name	Exemplar Image
4	D180 End of Runway #8 PTZ - 1653	
5	Tower Cam North (ER1.4) PTZ	

4.2. Timing and Correlation

The times used in this report are expressed using each camera's video timestamp; except camera 2, which had one hour subtracted to align with the hour timestamp of Cameras 4 and 5. Timestamp synchronization was evaluated by comparing common events recorded by all three cameras. Camera 2 and Camera 5 were synchronized to within 1-second (after Camera 2 was corrected for the one-hour time difference). Camera 2/5 and Camera 4 were synchronized to within 3 seconds; due to video resolution and camera vantage points, it was not possible to apply a correction to further synchronize Camera 2/5 and Camera 4.

4.3. Summary of Recording Contents

4.3.1. Camera 2

Figure 1 shows a time-lapse, annotated view of the aircraft path as recorded by Camera 2.

Figure 1. Camera 2 time-lapse imagery of accident flight.

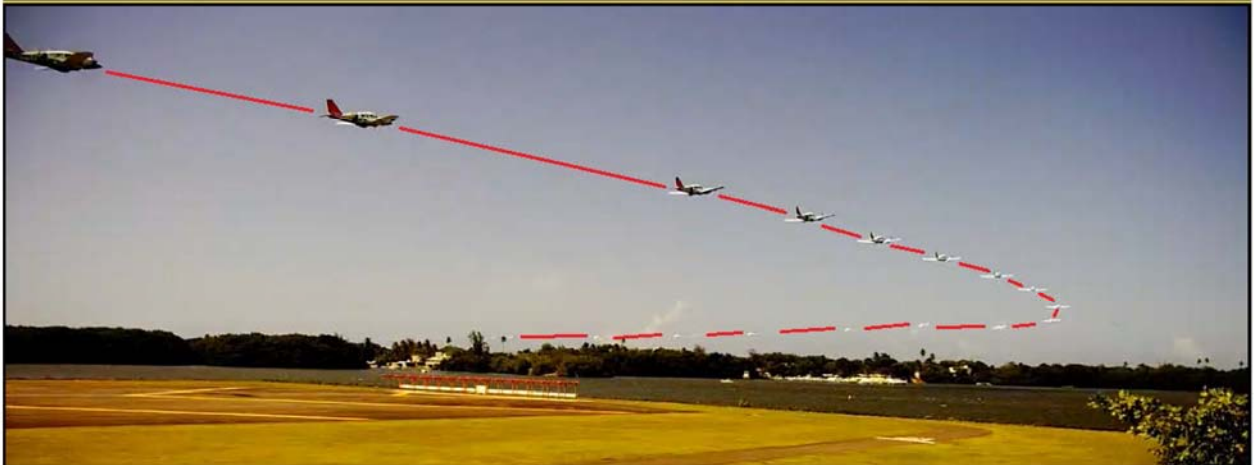


- At 14:14:18, N21WW entered the field of view taxiing towards the departure runway.
- At 14:14:49, N21WW entered the runway from the taxiway without stopping.
- By 14:15:02, N21WW had begun a rolling takeoff (that is, a rolling transition from taxi to takeoff) from the intersecting taxiway.
- By 14:15:40, N21WW had lifted off the runway; due to the video resolution and distance from the camera, an exact time of liftoff could not be determined.
- For additional details refer to other cameras.

4.3.2. Camera 4

Figure 2 shows a time-lapse, annotated view of the aircraft path as recorded by Camera 4.

Figure 2. Camera 4 time-lapse imagery of accident flight.



- At 14:16:01, N21WW was over the end of the runway, about 3 to 4 wingspans above the ground. The gear appeared retracted and the flap position could not be determined.
- By 14:16:06, it was evident N21WW was not gaining altitude and may have been losing altitude.
- By 14:16:17, N21WW entered a shallow left turn, while still not gaining altitude and possibly losing altitude.
- By 14:16:39, N21WW had circled to a position consistent with a left downwind from the departure runway at a low altitude, lower than earlier parts of Camera 4's recording. During the turn from crosswind to downwind, the video recording appeared to have shown white emissions from the back of the plane (such as smoke or vapor trails/condensation) from behind the aircraft; however, these apparent emissions may have been video distortion from a cloud behind the plane (and thus may not have been real).
- At 14:16:43, N21WW was no longer visible, as its distance and low altitude put it below the field of view of the camera.

4.3.3. Camera 5

Figure 3 shows a time-lapse, annotated view of the aircraft path as recorded by Camera 5.

Figure 3. Camera 5 time-lapse imagery of accident flight.



- At 14:15:00, the aircraft was aligned with runway and began its takeoff roll.
- At 14:15:58, the aircraft appeared to be over the yellow chevron pavement markings that are visible in Camera 4.¹
- At 14:16:42, the aircraft was flying at a low altitude, in the vicinity of a left downwind for runway 8.
- At about 14:16:45, the aircraft position became obscured by trees relative to the vantage point of Camera 5.
- At 14:17:07, a plume of water was visible in the water, followed by fire and smoke.

¹ FAA Advisory Circular 150/5340-1L, "Standards for Aircraft Markings", section 2.10 states, "The chevron marking identifies paved blast pads, stopways, and EMAS (engineered materials arresting systems) in relation to the end of the runway."