

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division

Washington, D.C. 20594

July 7, 2006

Video/Image Factual Report

NTSB Accident Number

DCA06MA010

By Doug Brazy

A. ACCIDENT

Location:	Miami, FL
Date:	December 19, 2005
Time:	1439 Eastern Daylight Time
Aircraft:	Grumman G-73T Turbo Mallard, registration: N2969
Operator:	Flying Boats, Inc.

B. GROUP

N/A

C. SUMMARY

On December 19, 2005, about 2:39 p.m. eastern standard time, a Grumman G-73T Turbo Mallard seaplane, N2969, operated by Flying Boats Inc. DBA Chalks Ocean Airways, as Flight 101, experienced an in-flight breakup and crashed near Miami, Florida. The flight had just departed from the Watson's Island seaplane base (X44) and was en route to Bimini, Bahamas. Witnesses, photos and video, and examination of the wreckage indicate that the right wing separated in flight, and an ensuing fire, prior to the seaplane descending into the water near a rock jetty. The 2 crewmembers and 18 passengers, including 3 infants, were fatally injured. The flight was operating under the provisions of 14

Code of Federal Regulations Part 121. Visual meteorological conditions prevailed at the time of the accident.

The Vehicle Recorder Division received copies of two separate videos recorded from personal video cameras, one digital surveillance video recording from a U.S. Coast Guard security camera, and eight digital still images recorded from three different cameras.

The first video was recorded from the deck of a cruise ship, located across the Main Channel from the Watson Island Seaplane Base. It contains footage of the accident airplane arriving and departing from the Seaplane Base's water entry ramp and footage of the airplane taxiing eastward down the Main Channel. The recording does not show the accident.

The second video was recorded from a beach located north of the accident site. It contains the airplane's descent and impact into the ocean after the wing separation. The wing separation from the airplane is not shown.

The digital surveillance video was recorded by a U.S. Coast Guard station camera located near east end of the Main Channel. This video shows the accident airplane airborne as it passes over the harbor and towards the ocean. It disappears from view and a bright flash and black smoke can be seen a few seconds later.

One digital still image shows the accident airplane in the water during its takeoff roll (or preceding taxi). This photo was taken from a vehicle traveling on the MacArthur¹ Causeway. A second digital image, also photographed from the MacArthur Causeway, shows the airplane shortly after liftoff above the channel. The six other images are of the accident aircraft on a previous date. The accident is not depicted in any of the images.

¹ Reference Figure 1 for locations

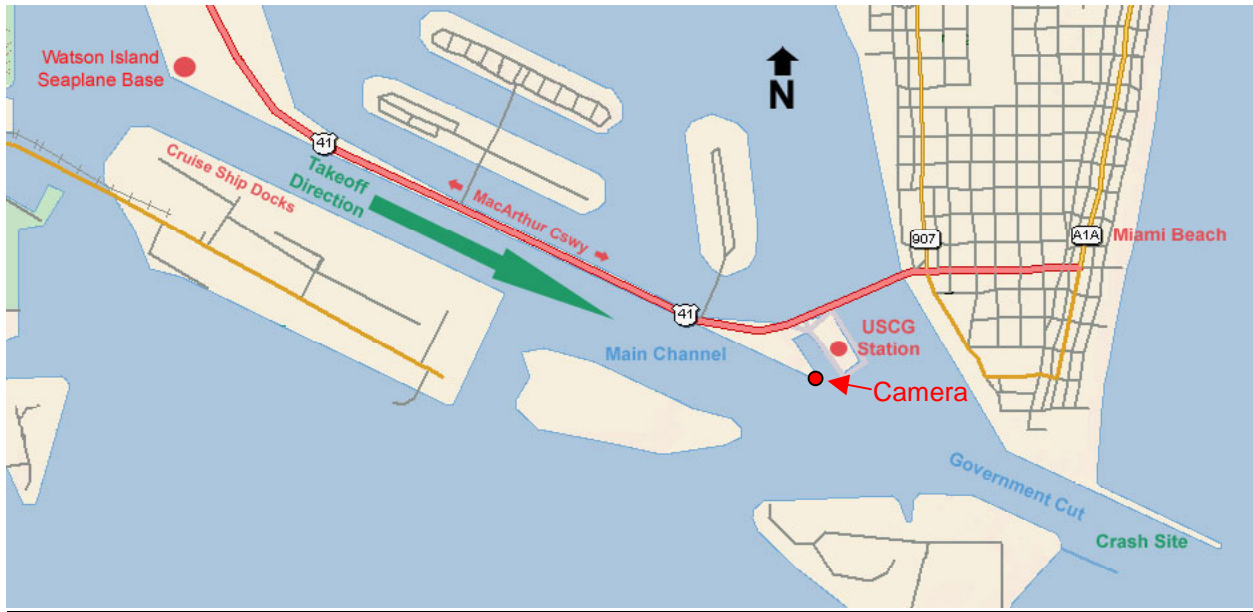


Figure 1 – Map of Locations²

D. DETAILS OF INVESTIGATION

Video Recordings Received:

Recording 1 – VHS copy of handheld video camera recording taken from cruise ship deck.

Tape labeled “CASE: 05-45223 TAKE OFF VIDEO”

NTSC video

Duration: 2 minutes 7 seconds

Recording 2 – VHS copy of handheld video camera recording taken from a beach north of accident site.

Tape Labeled “CHALKS SEAPLANE CRASH”

NTSC video

² Map extracted from Delorme Topo USA 5.0 and edited using Adobe Photoshop

Duration: 29 seconds

Recording 3 – Digital video file from U.S. Coast Guard Surveillance system camera located near west end of Government Cut.

Filename: 01_20051219143803_040_MARK.avi

Format: AVI, Microsoft MPEG-4 Video Codec V2

Image size: 320 x 240 Pixels

Frame Rate: 6 frames/Sec

Still Images Received:

Image 1 – Digital Image of Accident Airplane in Water (during taxi or takeoff roll)

Filename: IMG_2176.JPG

Excerpted information from embedded metadata (also called “EXIF” data – Exchangeable Image file Format data):

Camera make/model: Canon PowerShot A70

Camera date/time: 2005:12:19 / 15:37:33

Shutter 1/60

Aperture: F 4.8

Image Size 2048x1536 pixels

Image 2 – Digital Image of Accident Airplane above Water

Filename: Chalk's Airplane taking off (2) 12-19-05.jpg

(EXIF data missing from image file)

Images 3-8 – Digital Images of Accident Airplane on Previous Date

Filenames: Bahamas 001-005,010, 011.jpg

Excerpted EXIF data:

Camera make/model: Sealife DC500

Camera date/time: 2005:12:03 (times range from 14:05 to 15:15)

Shutter/Aperture:varies

Image Size 2560x1920 pixels

Recording 1

An observer was on the deck of a cruise ship docked in the Main Channel opposite the Watson Island Seaplane base. The recording captured the accident airplane's (N2969) arrival to and departure from the Watson Island Seaplane Base. The accident was not captured. The video portion of the recording contains erratic pan, tilt, and zoom motions consistent with a handheld camera. Audio is recorded and captures ambient noise around the camera. Music and voices are heard for the recording's duration. The only airplane noise heard is the sound of the engines after it departs the seaplane base.

Summary of Content

Initially the accident airplane can be seen taxiing in the water towards the water entry ramp at the seaplane base. The airplane is moving away from the camera location and the view is of the rear of the airplane. A flashing light similar to a strobe can be seen on the tail, and both propellers are spinning. At 18 seconds elapsed time (ET)³, the recording is interrupted (recording was stopped for an unknown amount of time, and started again). The next view begins with the airplane on land facing the ramp. The front of the airplane can be seen and the camera location appears to be the same as before. The airplane is stationary on the ramp with both propellers spinning. The flashing strobe light on the tail is seen as well as two flashing lights (one on the leading edge of each wing), located just outboard of the engines. A person is seen behind the airplane,

³ Elapsed times are from the beginning of the video recording.

crossing from right to left, to move a ladder. The airplane starts to roll forward at approximately 40 seconds ET. It proceeds down the ramp and the nose gear enters the water at 55 seconds ET. The airplane travels away from the ramp and towards the camera [Reference Figure 2]. The outboard pontoons can be seen lightly skimming the water surface. The airplane is seen bearing slightly to the left as the recording is interrupted again at 1 minute and 21 seconds ET.



Figure 2 - Accident airplane departing Watson Island Seaplane Base

The next view begins with the airplane seen moving away from the camera location. It is traveling eastward down the Main Channel creating a larger wake path than the previous view. Both propellers are spinning and the tail strobe light can be seen. At 1 minute and 40 seconds ET, the airplane yaws to the left, and turns back to the right about 10 seconds later. Beyond the channel and airplane, a park can be seen as well as a road with numerous moving vehicles. As the airplane continues to travel away from the camera location, the view begins to become obscured by a light pole and another

unknown object. The recording is interrupted again at 2 minutes and 4 seconds ET, when the view skips to a shot of a deck of a cruise ship. The airplane is no longer visible. The sky is overcast. The recording ends at 2 minutes and 7 seconds ET.

Recording 2

An observer on a beach north of the accident site captured the accident airplane's descent and impact into the ocean with a video camera. The first view of the airplane occurs after the wing had separated from the fuselage. The video portion of the recording contains erratic pan, tilt, and zoom motions consistent with a handheld camera. Audio is recorded and captures mostly static-like disturbances similar to wind and ocean wave noise. Indiscernible voices can be heard as well as sirens after the accident occurs. No noticeable sound from the airplane is captured.

Summary of Content

The recording begins with a still image of four surfers in the ocean. The camera location appears to be a beach and the sky is overcast. At 7 seconds ET, the still image becomes 'unfrozen' and motion begins. The surfers are moving in the water. At 8.5 seconds ET the recording is interrupted, and the new view shows the accident airplane in the center of the view in an approximately 35 – 45 degree nose down attitude [Reference Figure 3].



Figure 3 – First Video Frame of Accident Airplane, Time 8.5 seconds ET

There is no obvious smoke or debris coming directly from the airplane; but, trailing behind the airplane, in the upper right hand corner of the view, is a cloud of fire and black smoke. In the foreground, a beach, water with numerous swimmers, and a jetty can be seen. Both the airplane and cloud of fire and smoke follow a similar trajectory and impact the water, behind the jetty. The airplane impacts at 9.16 seconds ET [Reference Figure 4] and the cloud of fire and smoke impacts at 10.2 seconds ET [Reference Figure 5]. The cloud lands at a location slightly behind the airplane's impact point.



Figure 4 – Airplane Impact, Time 9.16 seconds ET



Figure 5 – Cloud Impact, Time 10.2 seconds ET

A plume of back smoke can be seen from the impact site to the upper right hand corner of the window. At 14 seconds into the recording the view zooms in slightly and zooms back out 10 seconds later. Many birds can be seen crossing the view from right to left during this time. About 28 seconds into the recording, an interruption occurs, and the view skips to show a view down a jetty made up of large rock boulders. There is a wooden pier that parallels the rock jetty to the right and numerous people can be seen on the rock jetty. The recording ends after approximately 29 seconds of recorded audio and video.

Recording 3

The U.S. Coast Guard provided the NTSB with a digital surveillance video recording from a camera located near the west end of Government Cut.⁴ The view is fixed and has no zoom. In the lower left corner of the view is a text/data stamp that reads 'C01(GovtCut-1)2005/12/19-14:38:03'. In the upper left corner of the view, another text stamp reads 'CONTINUOUS.' These stamps remain constant, except for the incrementing time of day. The final time displayed is '14:38:42'. No audio is recorded.

Summary of Content

The recording begins with a view of the Main Channel and Government Cut. A medium sized boat can be seen crossing the channel as well as a much larger ship farther away in Government Cut. Several high-rise buildings can be seen to the left of the waterway.

⁴ Reference Figure 1 for location

The accident airplane enters the view from the left at approximately 1 second ET and travels away from the camera at an angle. The airplane is too far away to be seen at 11 seconds ET, about the time it reaches the center of the view. At about 20 seconds ET a flash is seen in the area that the airplane was last seen [Reference Figure 6], directly above the waterway.



Figure 6 – Flash Marked by Arrow

At 21 seconds ET black smoke begins coming from the flash and the smoke trail falls towards the water over the next few seconds. The smoke trail disappears behind a ship located in the Channel, 4 seconds later [Reference Figure 7]. The smoke continues to billow up from the impact site until the recording ends after approximately 39 seconds of recorded video.



Figure 7 – Smoke Trail

Still Image 1 – Digital Image of Accident Airplane in Water

The NTSB received a digital still image [Reference Figures 8 and 9] from an observer, via email. The observer was traveling in an automobile on the MacArthur Causeway and captured the accident airplane while it was in the water prior to takeoff. According to the photographer, the photo was taken at 2:34 pm.

In the image, the accident airplane can be seen in the Main Channel between the MacArthur Causeway and the cruise ship dock. Comparing the background and foreground of the photo with satellite imagery confirms that the airplane is in close proximity to the seaplane base. Both propellers appear to be in motion. A bright streak located near the right engine is observed and is likely

the flashing light located outboard of the right engine, as in the video recording (in Figure 2). In the foreground trees, a guardrail, and a road can be seen. In the background, the cruise ship terminal and several high-rise buildings are seen.



Figure 8 - Still Image 1, Original



Figure 9 - Still Image 1, Enhanced and Zoomed

Still Image 2 – Digital Image of Accident Airplane at takeoff

The NTSB received a digital still image [Reference Figure 10] from an observer, via email. She was also traveling in an automobile on the MacArthur Causeway and captured the accident airplane just above the water. According to the photographer, the photo was taken at approximately 2:30 pm. The type of camera is unknown.

In the image, the airplane can be seen traveling above the water of the Main Channel just after liftoff. In the background are the docks of the Port of Miami. Numerous cargo containers and heavy lift cranes are observed. The sky is overcast.



Figure 10 - Still Image 2, Original



Figure 11 - Still Image 2, Enhanced and Zoomed

Still Images 3-8 – Digital Images of Accident Airplane on Previous Date

A series of digital images were received from a passenger who had flown on N2969 on December 3, 2006, sixteen days before the accident. The photos were of the accident airplane parked on the ground at an unspecified location as well as of the cockpit area as viewed through the cockpit doorway. File size and file name for each image is listed below in Table 1.

Image Name	File Name	File Size
Still Image 3	Bahamas 001.JPG	1.17 MB
Still Image 4	Bahamas 002.JPG	1.18 MB
Still Image 5	Bahamas 004.JPG	1.19 MB
Still Image 6	Bahamas 005.JPG	1.19 MB
Still Image 7	Bahamas 010.JPG	1.06 MB
Still Image 8	Bahamas 011.JPG	1.05 MB

Table 1 – Still Image File Info

Still Image 3 [Reference Figure 12] captures the accident airplane parked on the apron at an unspecified location. The right side of the airplane is seen. The engines are not running. Two people can be seen on the left side of the aircraft near the rear door. A ladder is in position next to the airplane and a small cart is under the right wing. In the immediate foreground, a ladder and a cart are seen to the left. In the background trees and a car can be seen. It is during the day and the sky is clear with a few clouds.

Still Image 4 [Reference Figure 13] also captures the airplane on the apron at an unspecified location. The right-rear of the airplane can be seen. There is one person in a pilot's uniform standing next to a ladder on the left side of the airplane. A woman is seen walking towards the airplane. A wheelchair is next to the ladder and a cart is under the right wing. It is daytime and the sky appears clear.

Still Image 5 [Reference Figure 14] is a view of the cockpit taken from the cabin. The left seat is occupied and the right seat is unoccupied. The visible gauges indicate both engines are running.

Still Image 6 [Reference Figure 15] is another view of the cockpit taken from the cabin. Both seats are occupied and the gauges indicate the engines are running.

Still Image 7 [Reference Figure 16] is a view out of the front windscreen, through the cockpit, from the cabin. The right seat is occupied and the left seat is out of view. The pilot in the right seat has his or her hand on a lever that is mounted on the ceiling. Outside of the airplane, a large resort, a bridge, and cruise ship docks with six cruise ships can be seen. The airplane appears to be airborne.

Still Image 8 [Reference Figure 17] is also a view out of the front windscreen similar to Still Image 7. The cruise ship docks and four cruise ships are seen. A water taxi is also present. The location of the airplane is lower than in Still Image 7, and could be on or near the water surface.



Figure 12 – Still Image 3



Figure 13 – Still Image 4



Figure 14 – Still Image 5



Figure 15 – Still Image 6



Figure 16 – Still Image 7



Figure 17 – Still Image 8

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