



National Transportation Safety Board Aviation Accident Final Report

Location:	FLUSHING, NY	Accident Number:	NYC97FA062
Date & Time:	03/25/1997, 0510 EST	Registration:	N117FJ
Aircraft:	Grumman American G-1159	Aircraft Damage:	Substantial
Defining Event:		Injuries:	4 None

Flight Conducted Under: Part 91: General Aviation - Positioning

Analysis

All positions at LaGuardia Tower were combined to the local control position from 0011 EST until after the accident. At about 0430 EST, ground personnel (gnd psnl) in 'Vehicle 1277' (communicating on ground control (GC) freq), were cleared on runway (rwy) 13/31 to perform 'lighting maintenance.' Later, during repair of centerline lights & while N117FJ was inbound to the airport, Vehicle 1277 stalled on rwy 13/31. Psnl of Vehicle 1277 attempted to restart the vehicle, but were unable, so they shut off all vehicle lights to reduce electrical load, & again attempted to restart the vehicle, but to no avail. At 0507 (during darkness), N117FJ made initial call to the tower for landing. The controller (ctlr) acknowledged the call, scanned rwy 13/31, did not see Vehicle 1277, & cleared N117FJ to land on rwy 31. At 0510, psnl of Vehicle 1277 observed N117FJ in the approach/landing phase & radioed GC that they were stuck on the rwy. The ctlr then radioed, 'go-around, aircraft on the runway go-around, aircraft on the runway go-around, seven fox juliet go-around.' Moments later, N117FJ impacted Vehicle 1277. The FAA ATC Handbook stated, 'Ensure that the runway to be used is clear of all known ground vehicles, equipment, and personnel before a departing aircraft starts takeoff or a landing aircraft crosses the runway threshold.'

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the tower controller's inadequate service by clearing the airplane to land on the same runway, where he had previously cleared a maintenance vehicle to perform maintenance to the runway centerline lights. Factors related to the accident were: darkness, partial failure of the runway centerline lights, the electric maintenance vehicle's loss of engine power, and a failure to have adequate emergency back up lighting.

Findings

Occurrence #1: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: LANDING - ROLL

Findings

1. (F) LIGHT CONDITION - NIGHT
2. (F) AIRPORT FACILITIES, IN-RUNWAY LIGHTS - FAILURE, PARTIAL
3. (C) CONTROL TOWER SERVICE - INADEQUATE - ATC PERSONNEL (LCL/GND/CLNC)
4. (F) AIRPORT EQUIPMENT - FAILURE, TOTAL
5. (F) EQUIPMENT, OTHER - INADEQUATE
6. OBJECT - VEHICLE

Factual Information

HISTORY OF FLIGHT

On March 25, 1997, about 0510 eastern standard time, a Grumman American Avn. Corp. G-1159, N117FJ, operated by PAB Aviation Incorporated, was substantially damaged when it collided with an unoccupied maintenance vehicle during the landing roll at the LaGuardia Airport (LGA), Flushing, New York. The two airline transport rated pilots and two dead-heading crew members were not injured. The flight departed Lehigh Valley International Airport, Allentown, Pennsylvania, about 0430, on an instrument flight rules flight plan, destined for LGA. Night visual meteorological conditions prevailed for the positioning flight conducted under 14 CFR Part 91.

During interviews with the crew, they reported that the captain (PIC) was the flying pilot, and the copilot (SIC) was the non-flying pilot. The copilot contacted the LaGuardia air traffic control tower, local controller, about 12 miles from the airport. The controller acknowledged and cleared N117FJ to land on runway 31. The PIC and SIC reported that the visual approach and landing touchdown were uneventful. During the landing roll, while the PIC was applying reverse thrust, the controller instructed the flight to go-around. The SIC then advised the controller that the airplane was on the runway. Shortly thereafter, the PIC observed a vehicle on the centerline of the runway. The PIC's attempts to avoid the vehicle were unsuccessful, and the airplane's right wing and right main landing gear struck the vehicle. When the airplane came to rest, the PIC shut the engines down and the passengers and crew members evacuated. The crew stated that the runway lights were on during the approach and landing, and that they did not observe any lights on the vehicle located on the runway centerline.

A review of the communication tapes and transcript for the LaGuardia air traffic control tower, from 0425 to 0518, revealed that the same controller was working the local and ground control positions. At 0430:23, the controller cleared the accident maintenance vehicle, vehicle 1277, onto runway 13-31 for "lighting maintenance." At 0430:26, vehicle 1277, questioned, "four is still closed, is that correct," to which the controller responded "that's correct." No further transmissions were made to vehicle 1277 from the controller.

At 0506:57, N117FJ contacted the controller and advised that they were inbound. At 0507:03, the controller acknowledged and cleared the airplane to land on runway 31. At 0509:50, another maintenance vehicle, vehicle 51, radioed, "LaGuardia ground, vehicle five one to cross runway three one at the intersection." The controller radioed "five one hold short", and at 0510, vehicle 51 advised, "five one holding." At 0510:27, vehicle 1277 radioed, "uh twelve seven seven we're stuck on the runway, we're stuck on the runway." The controller then radioed at 0510:32, "go-around, aircraft on the runway go-around, aircraft on the runway go-around, seven fox juliet go-around." At 0510:37, the crew radioed "fox juliet's on," and at 0510:56, the controller asked the crew if everything was "ok".

The accident occurred during the hours of darkness at 40 degrees, 46minutes north latitude, and 73 degrees, 52 minutes west longitude.

AIR TRAFFIC CONTROL INFORMATION

In the NTSB air traffic control group chairman's factual report, it stated that all positions at the LaGuardia control tower were combined at the local control position with one

controller making all radio communications. The accident maintenance vehicle, vehicle 1277, had communicated over the LaGuardia ground control frequency when they requested, and were given, clearance onto runway 13-31 to perform maintenance to the runway lights. Vehicle 1277 had also communicated over the ground control frequency when they radioed "uh twelve seven seven we're stuck on the runway, we're stuck on the runway." The controller transmitted over the local and ground control frequencies when he radioed "go-around, aircraft on the runway go-around, aircraft on the runway go-around, seven fox juliet go-around."

In the NTSB air traffic group chairman's factual report, under controller interviews, there was a summary of interview for the controller that worked the accident airplane and vehicle. The interview summary stated that the controller received a local control position relief briefing and went on duty at 0011. He did not recall the specifics of the briefing other than he believed runway 4-22 was closed. The controller was working combined frequencies which included the local control, ground control and class B airspace south.

During the interviews, the term "memory jogger" was used, which the LGA air traffic manager described as a "vehicle strip."

The report further stated:

"While [the controller] was on the local control position, he saw vehicles on runway 4-22. He could not recall if the yellow lights were lit on the vehicles because 'through the course of the night I worked a lot of vehicles.'"

"[The controller used] memory joggers to remind him that a vehicle is on an active runway during peak hours, busy periods and day time. He would use [memory joggers] during a midnight shift [if] "it's a factor," which would be aircraft or heavy aircraft activity. It is possible he would not use it during light traffic. [According to the controller], there [were] no facility orders, procedures, or teaching, regarding the use of memory joggers; it is a technique. He could not recall if he used any memory jogger when [vehicle] 1277 requested to enter runway 31 the morning of the accident, nor could he recall if he saw lights on the...vehicle."

"When he scanned runway 13-31, the runway was clear. He stated that at the time of the accident, 0510, there was no sun, and could not recall if there was a moon or moonlight."

"[The controller] did not experience any radio or radar problems the night of the accident, and stated that the accident airplane was the first arrival since about 0145."

The factual report also contained an additional response section which included questions from the group chairman and responses from the LGA air traffic manager. One question and response from the report stated the following:

Question: "Does the facility have any requirements regarding the use of 'memory joggers' when placing a vehicle on an active runway? If not, why not? If so, where is the requirement documented and request a copy. How is the information disseminated to the controllers?"

Response: "The use of a vehicle strip has always been part of the training process which is taught and utilized by all controllers at LaGuardia tower. Although there is no requirement for written direction, LaGuardia tower established a written directive detailing the use of the memory jogger. The directive will be incorporated in the revised standard operating procedures. (Note: The NOTICE was dated April 16, 1997 and states in part, "in light of recent events, the following procedures will [be] in effect immediately, and will be incorporated in the LaGuardia tower standard operating procedures order. A. The local and ground control

positions shall not be combined prior to 0000. B. All vehicles on active runways will be on the local control frequency. C. Whenever a vehicle is cleared onto an active runway, the "VEHICLE" strip shall be placed in the local control flight strip bay for the affected runway. D. During night operations, when the Port Authority is working on the active runway(s), they will request that the runway edge light be turned off.")

COCKPIT VOICE RECORDER INFORMATION

The NTSB cockpit voice recorder (CVR) group chairman's factual report stated the following:

"The recording consisted of four channels of audio information. One channel contained the cockpit area microphone audio information. One other channel contained the first officer outgoing radio transmission only. There was no readable audio on the other two channels. Incoming ATC and other radio transmissions could only be heard on the cockpit area microphone channel through the cockpit speakers. An electrical noise was heard on both pilot channels that changed in frequency with the increase and decrease in engine RPM. . . ."

The following are excerpts from the CVR transcript:

0510:30: sound of thump similar to aircraft touching down on runway. (heard over cockpit area microphone)

0510:31: go-around, aircraft on runway go-around, aircraft on runway go-around, seven fox juliet go-around. (identified as radio transmission from controller)

0510:37: fox juliet's on. (identified as radio transmission from copilot)

0510:43: sound of impact. (heard over cockpit area microphone)

No transmissions were heard from vehicle 1277, the accident vehicle, or vehicle 51 over the CVR.

AIRPORT OPERATIONS INFORMATION

The airport group chairman's factual report, under interview summary notes, stated the following:

"On March 26, 1997, the airport group interviewed the two...electricians who were operating from the destroyed truck while working on runway 13-31. Following are interview summary notes as compiled by the airport group:

The electricians stated that at 0410, while working on the lighting system on runway 4-22, which was closed for contract maintenance work, they contacted the control tower on ground control frequency to inform them that they were working on the closed runway (4-22). At about 0430 to 0445 they requested, and were given clearance onto runway 13-31 by the tower to perform routine lighting maintenance. At that time, the control tower confirmed that runway 4-22 was still closed. The electricians began working on the runway edge lights, repairing fixtures from the north end of runway 13 moving south. They finished repairing the edge lights at about 0500 and began to move north from the south end of the runway, repairing inoperative centerline lights as they went. At about 0505 they began to repair a centerline fixture [located about 1,800 feet from the runway 31 threshold]. The electricians stated that the truck was parked facing north with headlights, taillights, a 300 watt halogen lamp, and the flashing roof beacons all on. When the lead electrician began to remove the bolts

from the centerline light fixture with the impact wrench [which was powered by the truck], the truck engine stalled. The lead electrician immediately attempted to restart the truck, but was unable to, so he shut off all the vehicle lights to reduce the electrical load, and again attempted to start the truck with the lights off. At that moment the other electrician observed the lights of an airplane on final approach to runway 31, and informed the lead electrician, who immediately radioed the tower that they were still on the runway., Both electricians stated that at that time, they judged the airplane to be very close. The lead electrician then turned on the headlights and evacuated the truck....They estimated that the airplane struck the truck about 2 seconds after they [evacuated]." The report further stated:

"At the request of the airport group chairman, the Port Authority New York and New Jersey police had Port Authority New York and New Jersey maintenance personnel examine [the accident vehicle] and found that the vehicle battery was charged, and 8 gallons of gasoline remained in the fuel tank."

WRECKAGE INFORMATION

Examination of the wreckage revealed that the maintenance vehicle came to rest approximately 2,800 feet beyond the approach end of the runway. The right main landing gear had separated and came to rest about 2,950 feet beyond the approach end of the runway. The airplane came to rest off the right side of runway 31, about 4,050 feet beyond the approach end of the runway.

PILOT INFORMATION

The captain held an airline transport pilot certificate with ratings for single and multiengine land, and instrument airplane. He also held type ratings for the G-1159, L-1329, and LR-Jet. The captain had an approximate total flight experience of 9,900 hours, of which, 8,500 hours were multiengine, and 3,860 hours were in make and model.

The captain was issued a Federal Aviation Administration first class medical certificate in December 1996.

The first officer held an airline transport pilot certificate with ratings for single and multiengine land, and instrument airplane. He also held type rating for the G-1159, DC-3, IA-Jet, HS-125, CV-240, CV-340, CV-440, and G-159. The first officer had an approximate total flight experience of 21,000 flight hours, of which, 19,000 hours were multiengine, and 4,000 hours were in make and model.

The first officer was issued a Federal Aviation Administration first class medical certificate in December 1996

METEOROLOGICAL INFORMATION

The weather at the time of the accident was reported as follows: winds from 060 at 6 knots; visibility 10 miles; ceiling 25,000 overcast; temperature 37 degrees fahrenheit; dewpoint 27 degrees fahrenheit; barometric pressure 30.51" hg.

ADDITIONAL INFORMATION

In the US Department of Transportation, Federal Aviation Administration, Air Traffic Control Handbook, 7110.65J, under section 3-1-5, vehicle/equipment/personnel on runways, it stated:

"a. Ensure that the runway to be used is free of all known ground vehicles, equipment, and personnel before a departing aircraft starts takeoff or a landing aircraft crosses the runway threshold."

WRECKAGE RELEASE

The wreckage was released on March 25, 1997 to a representative of the owner's insurance company.

Pilot Information

Certificate:	Airline Transport	Age:	37, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last Medical Exam:	12/18/1996
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	9900 hours (Total, all aircraft), 3350 hours (Total, this make and model), 7860 hours (Pilot In Command, all aircraft), 122 hours (Last 90 days, all aircraft), 38 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Grumman American	Registration:	N117FJ
Model/Series:	G-1159 G-1159	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	229
Landing Gear Type:	Retractable - Tricycle	Seats:	22
Date/Type of Last Inspection:	Continuous Airworthiness	Certified Max Gross Wt.:	64800 lbs
Time Since Last Inspection:		Engines:	2 Turbo Fan
Airframe Total Time:	6743 Hours	Engine Manufacturer:	Rolls-Royce
ELT:	Installed, not activated	Engine Model/Series:	511-8
Registered Owner:	TREASURE SOLUTIONS	Rated Power:	11400 lbs
Operator:	PAB AVIATION	Air Carrier Operating Certificate:	On-demand Air Taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	LGA, 22 ft msl	Observation Time:	0415 EST
Distance from Accident Site:	0 Nautical Miles	Direction from Accident Site:	0°
Lowest Cloud Condition:	Unknown / 0 ft agl	Temperature/Dew Point:	3° C / -3° C
Lowest Ceiling:	Overcast / 25000 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	6 knots, 60°	Visibility (RVR):	0 ft
Altimeter Setting:	30 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	ALLENTOWN, PA (ABE)	Type of Flight Plan Filed:	IFR
Destination:	(LGA)	Type of Clearance:	IFR
Departure Time:	0446 EST	Type of Airspace:	Class B

Airport Information

Airport:	LAGUARDIA (LGA)	Runway Surface Type:	Concrete
Airport Elevation:	22 ft	Runway Surface Condition:	Dry
Runway Used:	31	IFR Approach:	Visual
Runway Length/Width:	7000 ft / 150 ft	VFR Approach/Landing:	Full Stop

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	2 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	RANDI-JEAN KUKLA	Adopted Date:	09/04/1998
Additional Participating Persons:	WALTER SPRENGER; GARDEN CITY, NY PAUL DOTZLER; FLUSHING, NY WILLIAM A WEST JR.; WASHINGTON, DC ROBERT J ETTINGER; ALLENTOWN, PA		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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