National Transportation Safety Board
Aviation Accident Final Report

Location:	Penn Yan, NY	**Accident Number:**	IAD05LA038
Date & Time:	02/15/2005, 0942 EST	**Registration:**	N327
Aircraft:	Grumman G-21A	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Minor
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The purpose of the flight was for the flight instructor to provide multiengine airplane training, in a late 1930's vintage amphibious airplane, to his brother, a single engine airplane rated private pilot. No published performance data was available for the airplane, and according to the flight instructor, much of what he knew about the performance of the airplane he learned from previous flights. Just after takeoff on the accident flight, and about 600 feet above ground level (agl), and as the pilot was retracting the landing gear and starting a left turn to the crosswind leg of the traffic pattern, the flight instructor retarded the right throttle in order to simulate a failure of the right engine. The pilot executed the procedures for an in-flight engine failure and the instructor looked out of the window to check for traffic in the airport traffic pattern. The flight instructor then heard the pilot state "I am at blue line but losing altitude." The flight instructor continued to scan for traffic and moved the right throttle forward to about the "half throttle" position. The pilot could not recall if he had adjusted either of the power controls after the initial application of power for takeoff. The airplane continued to descend, impacted the ground, and caught fire.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The flight instructor's inadequate planning/decision and his remedial action to conduct or recover from a simulated emergency procedure.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: CLIMB

Findings
1. PLANNING/DECISION - INADEQUATE - PILOT IN COMMAND(CFI)
2. (C) REMEDIAL ACTION - INADEQUATE - PILOT IN COMMAND(CFI)

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING

Findings
3. TERRAIN CONDITION - GROUND

Factual Information

On February 15, 2005, at 0942 eastern standard time, a Grumman G-21A, N327, was destroyed during a forced landing and post-crash fire near Penn Yan Airport (PEO), Penn Yan, New York. The certificated flight instructor and the private pilot receiving instruction received minor injuries. Visual meteorological conditions prevailed, and no flight plan was filed for the local instructional flight, which was conducted under 14 CFR Part 91.

According to written statements, and during telephone interviews, the flight instructor and the pilot stated that the purpose of the flight was for the flight instructor to provide multiengine airplane training to his brother, a single engine airplane-rated private pilot.

The flight instructor and the pilot met at the airport to perform a preflight inspection of the airplane, and verified that it contained 220 gallons of fuel. The pilot reported that he started the engines and allowed them to warm up, then conducted a run-up check of both engines.

The takeoff from runway 19 proceeded normally, and the pilot retracted the landing gear as he started a left turn to the crosswind leg of the traffic pattern, at an altitude about 600 feet above ground level (agl). The flight instructor then retarded the right throttle in order to simulate a failure of the right engine. The pilot performed the procedures for an in-flight engine failure, while the flight instructor guarded the engine controls.

The flight instructor looked out the right window to check for traffic and heard the pilot state, "I am at blue line but losing altitude." The pilot continued to turn the airplane left, as the flight instructor continued to scan for traffic and moved the right throttle forward to about the "half throttle" position. The flight instructor noted that the airplane was at or slightly above best single engine rate of climb speed (blue line speed), and that the airplane was descending rapidly through 400 feet agl.

The flight instructor remembered saying something to the pilot very loudly, but could not recall what he said due to the noise level in the cockpit. He also stated that he did not remember, "feeling, seeing, or hearing" the power return to the right engine. When asked, the pilot could not recall if he had adjusted either of the throttle controls after the initial application of power for takeoff. In addition, the flight instructor could not recall if the pilot had increased power on the left engine at any time during the accident sequence

The flight instructor recalled that the airplane flared before touchdown, but could not remember if he or the pilot was manipulating the flight controls at the time.

The airplane impacted the ground, caught fire, and spun 180 degrees before coming to rest. The flight instructor exited the airplane through the cabin door and the pilot exited through the left cockpit window.

In a written statement and during a telephone interview, a witness traveling northbound on the highway adjacent to the crash site stated that he saw a twin-engine seaplane flying very low and heading in an easterly direction. He saw the airplane make a "hard left turn" about 50 feet prior to reaching the roadway that he was traveling on. The left wing of the airplane impacted the ground, followed by the fuselage. Immediately upon impacting the ground, the airplane caught fire. When asked, the witness described the sound of the airplane's engines as "full loud" and "deafening."

The accident airplane was a 1939 Grumman G-21A "Goose." It had accrued 8,821 total flight

hours at the time of the last annual inspection. Both engines had accumulated 80 total flight hours since the last major overhaul.

The flight instructor held an airline transport pilot certificate with ratings for airplane multiengine land and rotorcraft helicopter. He also held commercial pilot certificate with ratings for airplane multiengine sea, and airplane single engine land and sea. He held a flight instructor certificate with ratings for airplane single and multiengine, and rotorcraft helicopter. At the time of the accident, he reported 17,573 total hours of flight experience, and 46 hours of flight experience in the accident airplane make and model. He also reported that he possessed 30 hours of dual instruction given in the accident airplane make and model.

The pilot held a private pilot certificate with ratings for airplane single engine land and sea, and instrument airplane. At the time of the accident, he reported 1,834 hours of total flight experience, and 24 hours of flight experience in the accident airplane make and model.

Examination of the wreckage was conducted at the scene by Federal Aviation Administration (FAA) inspectors. Photographs of the airplane's throttle quadrant revealed that the right throttle and mixture controls were in the full forward position, the left mixture control was in an aft position, near the rear stop of the quadrant, and the left throttle control was in about the 1/3 throttle open position. The photographs also revealed that the mixture controls used a notching latch-type design that locked the mixture controls in a fixed position.

No published performance data was available for the airplane, and according to the flight instructor, much of what he knew about the performance of the airplane he learned from previous flights.

The weather reported at Penn Yan Airport, at 0946, included winds from 210 degrees at 13 knots, gusting to 18 knots, 10 statute miles visibility, scattered clouds at 2,300 feet, temperature 41 degrees Fahrenheit, dew point 34 degrees Fahrenheit, and an altimeter setting of 30.01 inches of mercury.

Flight Instructor Information

Certificate:	Airline Transport; Flight Instructor	**Age:**	58, Male
Airplane Rating(s):	Multi-engine Land; Multi-engine Sea; Single-engine Land; Single-engine Sea	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane; Helicopter	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Helicopter	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	**Last FAA Medical Exam:**	09/08/2004
Occupational Pilot:		**Last Flight Review or Equivalent:**	11/23/2004
Flight Time:	17573 hours (Total, all aircraft), 46 hours (Total, this make and model), 14304 hours (Pilot In Command, all aircraft), 190 hours (Last 90 days, all aircraft), 108 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Pilot Information

Certificate:	Private	**Age:**	60, Male
Airplane Rating(s):	Single-engine Land; Single-engine Sea	**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 3 Valid Medical--w/ waivers/lim.	**Last FAA Medical Exam:**	11/03/2003
Occupational Pilot:		**Last Flight Review or Equivalent:**	08/03/2003
Flight Time:	1834 hours (Total, all aircraft), 24 hours (Total, this make and model), 1641 hours (Pilot In Command, all aircraft), 16 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Grumman	**Registration:**	N327
Model/Series:	G-21A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	1051
Landing Gear Type:	Retractable - Amphibian	**Seats:**	8
Date/Type of Last Inspection:	02/04/2005, Annual	**Certified Max Gross Wt.:**	8000 lbs
Time Since Last Inspection:	3.5 Hours	**Engines:**	1 Reciprocating
Airframe Total Time:	8825 Hours as of last inspection	**Engine Manufacturer:**	Pratt & Whitney
ELT:	Installed, not activated	**Engine Model/Series:**	R-985-AN14B
Registered Owner:	Jetcraft Corp	**Rated Power:**	450 hp
Operator:	Jetcraft Corp	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	PEO, 990 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	0946 EST	**Direction from Accident Site:**	150°
Lowest Cloud Condition:	Scattered / 2300 ft agl	**Visibility**	10 Miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	13 knots / 18 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	210°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.01 inches Hg	**Temperature/Dew Point:**	5°C / 1°C
Precipitation and Obscuration:			
Departure Point:	Penn Yan, NY (PEO)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	0930 EST	**Type of Airspace:**	Class G

Airport Information

Airport:	Penn Yan Airport (PEO)	**Runway Surface Type:**	Asphalt
Airport Elevation:	990 ft	**Runway Surface Condition:**	Unknown
Runway Used:	19	**IFR Approach:**	Unknown
Runway Length/Width:	5500 ft / 100 ft	**VFR Approach/Landing:**	Forced Landing; Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	2 Minor	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	On-Ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Minor	**Latitude, Longitude:**	42.625278, -77.039444

Administrative Information

Investigator In Charge (IIC):	Robert L Pearce	**Report Date:**	06/08/2005
Additional Participating Persons:	Guido Hassig; FAA/FSDO; Rochester, NY		
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.ntsb.gov/pubdms/.		

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