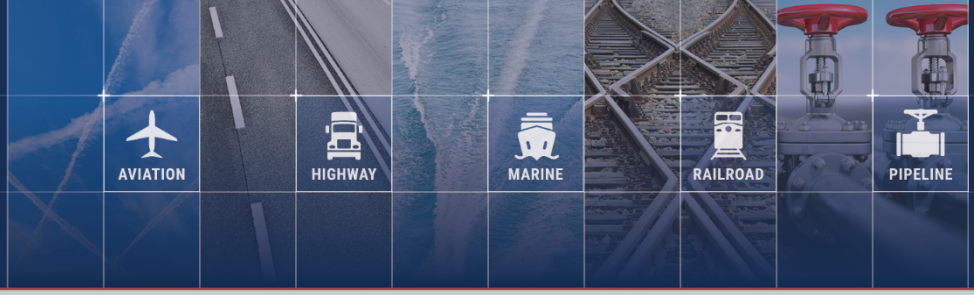

Aviation Investigation Final Report

Location:	Keene Valley, New York	**Accident Number:**	GAA17CA017
Date & Time:	October 6, 2016, 16:40 Local	**Registration:**	N4584H
Aircraft:	Piper PA 17	**Aircraft Damage:**	Substantial
Defining Event:	Ground collision	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that he attempted to hand prop the unoccupied and unchocked airplane, but was unsuccessful. He returned to the cockpit to prime the engine, but then decided to instruct his passenger on how to enter and exit the cockpit, which she then practiced multiple times before exiting the airplane to watch the start procedures again. The pilot further reported that he attempted to hand prop the airplane a second time and the engine started and accelerated to a high revolution per minute (RPM) setting. The pilot was unable to restrain the airplane by holding the right wing lift strut and the airplane made a right circle, entered a wooded area, and impacted trees.

The airplane sustained substantial damage to the wings and fuselage.

The pilot later reported that the airplane was not equipped with a parking brake.

The pilot reported that there were no preimpact mechanical failures or malfunctions with the airframe or engine that would have precluded normal operation.

Federal Aviation Administration's Airplane Flying Handbook, FAA-H-8083-3A, contains a section titled "Hand Propping" which states:

An engine should not be hand propped unless two people, both familiar with the airplane and hand propping techniques, are available to perform the procedure. The person pulling the propeller blades through directs all activity and is in charge of the procedure. The other person, thoroughly familiar with the controls, must be seated in the airplane with the brakes set. As an additional precaution, chocks may be placed in front of the main wheels. If this is not feasible, the airplane's tail may be securely tied. Never allow a person unfamiliar with the controls to occupy the pilot's seat when hand propping. The procedure should never be attempted alone.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
The pilot's failure to use the proper hand propping procedures, resulting in a runaway airplane and an impact with trees.

Findings

Personnel issues	Use of policy/procedure - Pilot
Personnel issues	Decision making/judgment - Pilot
Aircraft	Brake - Not installed/available
Environmental issues	Tree(s) - Effect on equipment

Factual Information

History of Flight

Standing-engine(s) start-up	Ground collision (Defining event)

Pilot Information

Certificate:	Airline transport; Flight engineer	**Age:**	70,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	None
Other Aircraft Rating(s):	None	**Restraint Used:**	None
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	May 4, 2016
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	October 3, 2016
Flight Time:	(Estimated) 8964.5 hours (Total, all aircraft), 5.3 hours (Total, this make and model), 5094.1 hours (Pilot In Command, all aircraft), 5.3 hours (Last 90 days, all aircraft), 5.3 hours (Last 30 days, all aircraft)		

Passenger Information

Certificate:		**Age:**	Female
Airplane Rating(s):		**Seat Occupied:**	None
Other Aircraft Rating(s):		**Restraint Used:**	
Instrument Rating(s):		**Second Pilot Present:**	No
Instructor Rating(s):		**Toxicology Performed:**	No
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N4584H
Model/Series:	PA 17 NO SERIES	**Aircraft Category:**	Airplane
Year of Manufacture:	1948	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	17-9
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	October 1, 2016 Annual	**Certified Max Gross Wt.:**	1150 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	2195.2 Hrs at time of accident	**Engine Manufacturer:**	CONT MOTOR
ELT:	Not installed	**Engine Model/Series:**	A-65-8
Registered Owner:	On file	**Rated Power:**	65 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KSLK,1663 ft msl	**Distance from Accident Site:**	21 Nautical Miles
Observation Time:	07:51 Local	**Direction from Accident Site:**	299°
Lowest Cloud Condition:		**Visibility**	
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	30.27 inches Hg	**Temperature/Dew Point:**	2°C / 1°C
Precipitation and Obscuration:	Moderate - None - Fog		
Departure Point:	GHENT, NY (NY1)	**Type of Flight Plan Filed:**	None
Destination:	Keene Valley, NY (1I1)	**Type of Clearance:**	None
Departure Time:	12:10 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	MARCY FIELD 1I1	**Runway Surface Type:**	
Airport Elevation:	985 ft msl	**Runway Surface Condition:**	Dry
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	44.221111,-73.787498(est)

Preventing Similar Accidents

Manage Risk: Good Decision-making and Risk Management Practices are Critical (SA-023)

The Problem

Although few pilots knowingly accept severe risks, accidents can also result when several risks of marginal severity are not identified or are ineffectively managed by the pilot and compound into a dangerous situation. Accidents also result when the pilot does not accurately perceive situations that involve high levels of risk. Ineffective risk management or poor aeronautical decision-making can be associated with almost any type of fatal general aviation accident.

What can you do?

- Develop good decision-making practices that will allow you to identify personal attitudes that are hazardous to safe flying, apply behavior modification techniques, recognize and cope with stress, and effectively use all resources. Understand the safety hazards associated with human fatigue and strive to eliminate fatigue contributors in your life.
- Understand that effective risk management takes practice. It is a decision-making process by which you can systematically identify hazards, assess the degree of risk, and determine the best course of action.
- Be honest with yourself and your passengers about your skill level and proficiency. Refuse to allow external pressures, such as the desire to save time or money or the fear of disappointing passengers, to influence you to attempt or continue a flight in conditions in which you are not comfortable.
- Be honest with yourself and the FAA about your medical condition. If you have a medical condition or are taking any medication, do not fly until your fitness for flight has been thoroughly evaluated.
- Plan ahead with flight diversion or cancellation alternatives, and brief your passengers about the alternatives before the flight.

See https://www.ntsb.gov/Advocacy/safety-alerts/Documents/SA-023.pdf for additional resources.

The NTSB presents this information to prevent recurrence of similar accidents. Note that this should not be considered guidance from the regulator, nor does this supersede existing FAA Regulations (FARs).

Administrative Information

Investigator In Charge (IIC):	Benhoff, Kathryn
Additional Participating Persons:	Todd P Moses; FAA; Albany, NY
Original Publish Date:	December 15, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=94190

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, "accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties … and are not conducted for the purpose of determining the rights or liabilities of any person" (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB's statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available here.