



# Aviation Investigation Final Report

<b>Location:</b>	Fortuna, California	<b>Accident Number:</b>	WPR11LA487
<b>Date &amp; Time:</b>	August 17, 2011, 15:00 Local	<b>Registration:</b>	N3453K
<b>Aircraft:</b>	Piper J3C-65	<b>Aircraft Damage:</b>	None
<b>Defining Event:</b>	AC/prop/rotor contact w person	<b>Injuries:</b>	1 Serious, 2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The individual attempting to start the engine by turning the propeller (hand prop) reported that, during the first attempt to start the engine, verbal callouts were used. He further reported that the pilot then told him to pull the propeller through three times. The individual said that he then motioned, without a verbal callout to the pilot, that he would pull the propeller through per the pilot's request. The pilot reported that the individual hand-propping the engine pulled the propeller through a second time before he could secure the airplane by turning off the magnetos. As the individual rotated the propeller and reached to grab the other propeller blade, the engine unexpectedly started, which resulted in the propeller striking the individual in the right arm, causing a fracture.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The unexpected engine start during hand propping, which resulted in a serious injury. Contributing to the accident was the lack of communication between the pilot and the individual hand propping the engine.

## Findings

<b>Personnel issues</b>	Use of equip/system - Other
<b>Personnel issues</b>	Lack of communication - Not specified



## Factual Information

### History of Flight

<b>Standing-engine(s) start-up</b>	AC/prop/rotor contact w person (Defining event)
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On August 17, 2011, about 1500 Pacific daylight time, a two seat tandem seating configuration Piper J3C-65, N3453K, was not damaged during an engine start at the Rohnerville Airport (FOT), Fortuna, California. The airplane was registered to and operated by the commercial pilot under the provisions of Title 14 Code of Federal Regulations Part 91. The commercial pilot and his passenger were not injured and one person assisting in starting the airplane sustained serious injuries. Visual meteorological conditions prevailed and no flight plan was filed for the personal flight. The flight had not departed at the time of the accident and had an intended destination of Garberville, California.

In a written statement to the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), the pilot reported that as he was briefing his wife, a non-pilot rated passenger, that he would hand prop the engine while she operated the throttle and brakes, the father of one of his previous students approached him and told him to get inside the airplane and that he would "do the propping." The pilot stated that he was unsure of the individual's experience, but noted that the person's daughter, who he had previously instructed in the airplane, was present. The daughter of the individual hand propping the engine communicated to the pilot "...brakes, throttle cracked, stick back, and mags on," both followed by her father pulling the propeller through. The pilot stated that the engine start was unsuccessful and that before he could turn the magnetos off, the individual motioned towards the propeller and pulled it through despite him yelling "it's hot." The engine subsequently started and the individual was struck on the forearm. The pilot questioned the individual if he was ok and was assured he was and that it was just a glancing blow.

In a statement submitted to the IIC, the non-pilot rated individual, who hand propped the airplane reported that after taking a photo of his daughter, the pilot and the pilot's wife in front of the airplane, the pilot's wife got into the front seat and the pilot climbed into the rear seat. After taking the picture the individual then moved to the propeller, with his daughter positioned outside and on the right side of the airplane. The individual stated that the pilot called out something similar to "let's give it a try" as he relayed to the pilot "brakes on, mags off, clear" prior to pulling the propeller through. The engine did not start and the pilot called out to the individual's daughter to prime the airplane's engine. The individual's daughter then reached into the cockpit area, primed the engine, and moved back away from the airplane. The individual further stated that the pilot told him to "...go ahead and turn it over three times." The individual said that he complied with the pilot's instructions without calling out "brakes on, mags off, clear." The individual said that he pulled the propeller through with his left arm and that while reaching out to grab the other propeller blade with his right arm, the engine started

and struck him in his right forearm. The individual added that at no time while he was pulling the propeller through following the initial attempt to start the engine did the pilot communicate with him.

Several weeks after the accident, the IIC was notified that the individual who was performing the hand propping eventually got an x-ray of his forearm, and it was determined that the bone was broken.

### Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	75, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Glider	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Glider; Sport pilot	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 With waivers/limitations	<b>Last FAA Medical Exam:</b>	June 23, 2011
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	July 19, 2010
<b>Flight Time:</b>	5000 hours (Total, all aircraft), 400 hours (Total, this make and model), 4900 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N3453K
<b>Model/Series:</b>	J3C-65	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	22144
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	February 16, 2011 Annual	<b>Certified Max Gross Wt.:</b>	1220 lbs
<b>Time Since Last Inspection:</b>	98 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	1034 Hrs as of last inspection	<b>Engine Manufacturer:</b>	CONT MOTOR
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	A&C65 SERIES
<b>Registered Owner:</b>	BARON FRED N	<b>Rated Power:</b>	65 Horsepower
<b>Operator:</b>	BARON FRED N	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.92 inches Hg	<b>Temperature/Dew Point:</b>	24°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Fortuna, CA (FOT)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Garberville, CA	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>		<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Rohnerville Airport FOT	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	393 ft msl	<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	None
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	1 Serious	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious, 2 None	<b>Latitude, Longitude:</b>	40.553611,-124.132499(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Cawthra, Joshua
<b>Additional Participating Persons:</b>	Gregory Michael; Federal Aviation Administration; Sacramento, CA
<b>Original Publish Date:</b>	April 20, 2012
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=82985">https://data.nts.gov/Docket?ProjectID=82985</a>

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](#).