



# Aviation Investigation Final Report

<b>Location:</b>	HOUSTON, Texas	<b>Accident Number:</b>	FTW91LA094
<b>Date &amp; Time:</b>	June 9, 1991, 12:00 Local	<b>Registration:</b>	N48JP
<b>Aircraft:</b>	PITTS                      S1C	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

FOLLOWING A SERIES OF AEROBATIC MANEUVERS TO TEST THE EFFECTIVENESS OF NEW TYPE OF COMPOSITE PROPELLER THE AIRPLANE EXPERIENCED A CATASTROPHIC FAILURE OF THE PROPELLER. THE PROPELLER WAS ISSUED WITH A KIT THAT INCLUDED THE MOUNTING BOLTS. THE BOLTS PROVIDED WERE TOO LONG AND BOTTOMED OUT RESULTING IN NO TORQUE BEING APPLIED TO THE PROPELLER. THE PROPELLER WOBBLLED, AND THE PROPELLER LAMINATIONS SEPARATED.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE FAILURE OF THE PROPELLER DUE TO IMPROPER INSTALLATION.

## Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: MANEUVERING

### Findings

1. PROPELLER SYSTEM/ACCESSORIES, BLADE - VIBRATION
2. PROPELLER SYSTEM/ACCESSORIES, BLADE - COMPOSITE MATERIAL
3. (C) PROPELLER SYSTEM/ACCESSORIES, BLADE - DELAMINATION
4. (C) PROPELLER SYSTEM/ACCESSORIES, BLADE - FAILURE, TOTAL
5. (C) MAINTENANCE, INSTALLATION - IMPROPER - OTHER MAINTENANCE PERSONNEL
6. (C) PROPELLER SYSTEM/ACCESSORIES, PROP BLADE RETENTION - IMPROPER

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

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Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT  
Phase of Operation: LANDING - ROLL

Findings

- 7. TERRAIN CONDITION - DITCH
- 8. OBJECT - FENCE

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Occurrence #4: NOSE OVER  
Phase of Operation: LANDING - ROLL

## Factual Information

### Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	40, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea	<b>Seat Occupied:</b>	Unknown
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	March 21, 1991
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	1065 hours (Total, all aircraft), 325 hours (Total, this make and model), 982 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 11 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	PITTS	<b>Registration:</b>	N48JP
<b>Model/Series:</b>	S1C S1C	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>		<b>Serial Number:</b>	072
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	1
<b>Date/Type of Last Inspection:</b>	Unknown	<b>Certified Max Gross Wt.:</b>	1150 lbs
<b>Time Since Last Inspection:</b>	0 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	O-360-A3A
<b>Registered Owner:</b>		<b>Rated Power:</b>	180 Horsepower
<b>Operator:</b>	JOSEPH A. PACTH	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## 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>	3800 ft AGL	<b>Visibility</b>	12 miles
<b>Lowest Ceiling:</b>	Broken / 13000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	12 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	70°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	26°C / 22°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>		<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	11:30 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>		<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>		<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	29.830368,-95.660881(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Ellis, Matthew
<b>Additional Participating Persons:</b>	G. MILLER; HOUSTON , TX
<b>Original Publish Date:</b>	March 31, 1993
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=23341">https://data.ntsb.gov/Docket?ProjectID=23341</a>

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