

National Transportation Safety Board  
Washington, DC 20594

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Brief of Accident

Adopted 07/15/2013

WPR11MA454				
File No. 31519	09/16/2011	Reno ,NV	Aircraft Reg No. N79111	Time (Local): 16:26 PDT

Make/Model: North American/Aero Classics/P-51D  
Engine Make/Model: Ama/Expr / UNKNOWN ENG  
Aircraft Damage: Substantial  
Number of Engines: 1  
Operating Certificate(s): None  
Type of Flight Operation: Air Race/Show  
Reg. Flight Conducted Under: Part 91: General Aviation

	Fatal	Serious	Minor/None
Crew	1	0	0
Pass	0	0	0
Other	10	66	0

Last Depart. Point: Same as Accident/Incident Location  
Destination: Local Flight, NV  
Airport Proximity: On Airport/Airstrip  
Airport Name: Reno/Stead Airport  
Runway Identification: N/A  
Runway Length/Width (Ft): Unk/Nr  
Runway Surface:  
Runway Surface Condition:

Condition of Light: Day  
Weather Info Src: Weather Observation Facility  
Basic Weather: Visual Conditions  
Lowest Ceiling: None  
Visibility: 10.00 SM  
Wind Dir/Speed: 260 / 015 kts  
Temperature (°C): 22  
Precip/Obscuration: No Obscuration; No Precipitation

Pilot-in-Command      Age: 74

Flight Time (Hours)

Certificate(s)/Rating(s)  
Commercial; Multi-engine Land; Single-engine Land; Single-engine Sea; Glider; Helicopter

Total All Aircraft: Unk/Nr  
Last 90 Days: Unk/Nr  
Total Make/Model: Unk/Nr  
Total Instrument Time: Unk/Nr

Instrument Ratings  
Airplane

\*\*\* Note: NTSB investigators traveled in support of this investigation and used data obtained from various sources to prepare this aircraft accident report. \*\*\*

The Safety Board's full report is available at <http://www.nts.gov/investigations/reports.html>. The Aircraft Accident Report number is NTSB/AAB-12/01.

On September 16, 2011, about 1625 Pacific daylight time, an experimental, single-seat North American P-51D, N79111, collided with the airport ramp in the spectator box seating area following a loss of control during the National Championship Air Races unlimited class gold race at the Reno/Stead Airport (RTS), Reno, Nevada. The airplane was registered to Aero-Trans Corp (dba Leeward Aeronautical Sales), Ocala, Florida, and operated by the commercial pilot as Race 177, The Galloping Ghost, under the provisions of 14 Code of Federal Regulations Part 91. The pilot and 10 people on the ground sustained fatal injuries, and at least 64 people on the ground were injured (at least 16 of whom were reported to have sustained serious injuries). The airplane sustained substantial damage, fragmenting upon collision with the ramp. Visual meteorological conditions prevailed, and no flight plan had been filed for the local air race flight, which departed RTS about 10 minutes before the accident.

Updated at Mar 17 2014 9:14AM

Brief of Accident (Continued)

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OCCURRENCES

Prior to flight - Aircraft maintenance event  
Maneuvering-low-alt flying - Aircraft structural failure  
Maneuvering-low-alt flying - Loss of control in flight

FINDINGS

Aircraft-Aircraft structures-Empennage structure-Tab structure (on elevator)-Failure - C  
Aircraft-Aircraft structures-Empennage structure-Elevator/tab attach fitting-Fatigue/wear/corrosion - C  
Personnel issues-Action/decision-Action-(general)-Pilot - F  
Aircraft-Aircraft oper/perf/capability-Performance/control parameters-(general)-Not specified - F

Findings Legend: (C) = Cause, (F) = Factor

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The National Transportation Safety Board determines the probable cause(s) of this accident as follows:  
The reduced stiffness of the elevator trim tab system that allowed aerodynamic flutter to occur at racing speeds. The reduced stiffness was a result of deteriorated locknut inserts that allowed the trim tab attachment screws to become loose and to initiate fatigue cracking in one screw sometime before the accident flight. Aerodynamic flutter of the trim tabs resulted in a failure of the left trim tab link assembly, elevator movement, high flight loads, and a loss of control. Contributing to the accident were the undocumented and untested major modifications to the airplane and the pilot's operation of the airplane in the unique air racing environment without adequate flight testing.