

ADVISORY CAUTIONARY NON-DIRECTIVE

FOR INFORMATION, CONTACT KEN GILLIAM, AAS-300 (423) 741-2656

DATE: 3/2/2006 No. 06-04

TO: Airport Operators, FAA Airport Certification Safety Inspectors

TOPIC: P-23 Aircraft Rescue and Firefighting Vehicle

During a past aircraft accident investigation, the National Transportation Safety Board (NTSB) surfaced a safety issue (non-aircraft accident related) pertaining to the US Air Force P-23 model aircraft rescue and fire fighting (ARFF) vehicle wheel hub/axle assembly. US Air Force actions to address these issues include an engineering analysis, complete redesign of the wheel hub/axle assembly, and extensive laboratory testing.

This Cert-Alert provides a brief history of the P-23 ARFF hub/axle assembly defect and recommended actions.

There are 250 P-23s in the US Air Force inventory. These vehicles were delivered to active duty, Air National Guard, and Air Force Reserve bases between 1994 and 1996. Additionally there are several civilian airport operators who use the P-23s though not for the primary ARFF response vehicle.

An initial hub/axle assembly failure occurred in August 1995 with sporadic failures in 1996 and 1997. Early problems were corrected under the manufacturer's warranty program and were believed to be isolated incidents due to casting anomalies. Failures began to escalate in early 1998. The most notable occurred in February 1998 when a wheel/tire assembly separated from a moving P-23 and rolled into a privately owned vehicle. Analysis and testing indicated that the problem was the result of inadequate design as well as casting and machining defects.

Since March 1998, the US Air Force fleet has been limited to emergency responses and high-hazard standby operations. The US Air Force issued field inspection guidance and restricted speed of the vehicle to 15 miles per hour (MPH) under normal driving conditions and 30 MPH for emergency response when significant pedestrian traffic is present.

The P-23 has eight axle assemblies per vehicle. Fire departments monitor leaking hubs. Axle fluid leakage is a primary indication of a potential crack or seal deterioration until verified through local testing.

Approximately 80% of the failures have occurred at Axle #3, primarily due to the high side forces generated at the third axle while turning.

The US Air Force has made and continues to make every effort for the timely closure is this issue. There is a funded in-place two year plan to complete the hub assembly replacement project. A contract was recently awarded and the manufacturer has begun production of a replacement assembly. The US Air Force estimates a fleet wide hub axle assembly retrofit will be completed by December 2007.

Since this vehicle may also be used by civilian airport operators, we recommended the following action:

- Be aware of the potential hazards existing with the P-23 hub assembly.
- Inspect each of the P-23 hub assemblies after each and every use of the vehicle.
- Maintain a complete record of the inspection results.
- Provide a timely replacement of safe and reliable replacement assemblies of all existing P-23 hub assemblies.
- Ensure required response times can be met with recommended restricted speed limits.

For additional information on where to get the hub replacements done etc. on the P-23s, you can contact:

George F. Hall, DAF HQ AFCESA/CEXF Fire & Emergency Services Operations Manager 139 Barnes Drive Suite 1 Tyndall AFB FL 32403-5619 Tel: DSN 523-6159 COMM (850)283-6159 Fax:DSN 523-6383 COMM (850)283-6383

Corporate Fax: COMM: (775)402-8983 Email: george.hall@tyndall.af.mil

Web Site: www.afcesa.af.mil

Any part 139 airport operator should inform the Airport Certification Safety Inspector if a P-23 vehicle is used as one of the primary response vehicles. The inspector will work with the airport operator to ensure the ARFF response requirement is met in a safe manner.

OSB March 2, 2006

Benedict D. Castellano DATE

Manager - Airport Safety and Operations (AAS-300)

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