

**United States Department of Agriculture
Forest Service**

Aviation Safety Alert

No. 2004-07

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Subject:

M-18 Dromader Throttle Clevis Assembly

Area of Concern:

Fire and Aviation Operations

Distribution:

USFS Aviation Operations

Discussion: On 7/26/04, an M-18 Dromader was dispatched to a fire on the Malheur National Forest near Burns, OR. Following a retardant drop, the pilot was unable to get the engine to respond to throttle inputs. The pilot successfully executed an emergency landing on a sagebrush flat, sustaining damage to the aircraft. The pilot was uninjured. The preliminary investigation revealed that the bolt normally connecting the throttle linkage clevis to the throttle control arm was missing.

On the afternoon of 7/27/04 investigators inspected the throttle linkage assembly on a second Dromader that was sent to replace the mishap aircraft. A nylon lock nut had been installed on the clevis bolt and was loose enough to move on and off the bolt by finger. The attached photos show the repair made by the mechanic which included a drilled bolt and castellated nut with a cotter pin to prevent backing off.

Further review of the engine installation instructions in the PZL M-18 Maintenance Manual revealed that the instructions for connecting the throttle arm to the carburetor were non-specific. The manual simply states that the connection be made with no mention as to what hardware to use. However, the industry standard, found in chapter 7, section 4, paragraph 7-64 of the FAA Advisory Circular AC43.13-1B, is that nylon locking nuts should not be used with rotating components or assemblies. Nylon and/or fiber nuts are highly susceptible to wear from repetitive use and from high heat applications.

Recommendation: The FAA has been contacted to suggest that the manufacturer issue a Service Bulletin on this issue and establish a set procedure for attachment of the clevis bolt assembly. In the interim, it is recommended that Maintenance Inspectors inspect all M-18 Dromader engines for this discrepancy. Assemblies that are found to be installed with nylon locking nuts should be immediately replaced and a SAFECOM filed to document the finding.

This Safety Alert has been coordinated with the Department of the Interior Aviation Management directorate.

/s/ Ron Hanks - USFS National Aviation Safety and Training Manager

/s/ Pat Norbury – USFS National Aviation Operations Officer



Nylon locking nut



Castellated nut with cotter pin