SERVICE LETTER NO. 72-1

DATE: January 13, 1972

SUBJECT: Propeller Care and Operation Limits

SERIALS AFFECTED: All Model AA-1 and AA-1A Aircraft

TIME OF COMPLIANCE: Immediately

General

A few field reports have been received concerning propeller blade tip failures. Typical cause of failure is attributed to metal fatigue which is most commonly caused by continued operation with nicks, scratches, gouges, etc., in the blade. It must be pointed out that any operation of a propeller in this condition is detrimental to the service life and in severe cases can lead to failure in a very short time. Damage of this nature which is not removed immediately can cause metal fatigue in the areas directly adjacent to the damaged area. This will remain and weaken the blade even though the original damage has been removed.

In cases where an aircraft must be flown with minor blade nicks etc., to reach a maintenance facility, it should be flown at a low RPM cruise.

Maximum RPM Operation Limitation

The AA-1 and AA-1A Owner's Manual specify that the maximum RPM for engine operation is 2600 RPM. This maximum must not be exceeded, since operation above this established limitation will increase vibrational stress levels on the propeller blades, as well as increase engine temperatures which may lead to substantial engine damage.

Propeller Care

a. Inspect blades for damage on each pre-flight inspection. Check entire blade area, especially leading edge and thrust side for signs of erosion, scratches, nicks, cracks, etc. Damaged areas act as stress-risers and should be removed immediately by filing and polishing. Remove metal and smoothly finish surfaces as specified in applicable propeller service manual, aircraft service manual or FAA Advisory Circular AC43.13-1. This work can normally be performed by an A & P mechanic without removing propeller from engine. However, if propeller has extensive damage, it should be reconditioned by an FAA approved repair station.

b. Keep blades clean - a crack can't be seen if covered by dirt or other foreign matter. Waxing blades can help prevent erosion damage.

c. Avoid engine run-up in areas where loose rocks, gravel, etc. can be encountered.

d. Do not move the aircraft by pushing or pulling on the propeller blades - they were not designed to be used as handles.

Very truly yours,