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NOTIFICATION NO. CN-1-13

Sept 27, 2013

TO: ALL AIRCRAFT OWNERS AND OPERATORS USING CONTINENTAL O-200 ENGINES AND SENSENICH C72AE PROPELLERS

SUBJECT: MAGNETO FAILURES / PROPELLER HARMONICS

PROPELLER MODEL(S): SENSENICH 2EK/C72AE, 2EL/C72AE GROUND ADJUSTABLE COMPOSITE PROPELLERS

AIRCRAFT MODEL(S) AFFECTED: ALL AIRCRAFT USING CONTINETAL O-200 ENGINES AND SENSENICH C72AE PROPELLERS

DISCUSSION:

Sensenich has been made aware of random magneto failures on Continental Motors Inc (CMI) O-200 series engines that CMI has attributed to operation with the Sensenich composite C72AE propeller. These failures appear to be intermittent and CMI reports that the magneto failures are a result of a 6^{th} order vibration that CMI attributes to a vibrational resonance of the engine/propeller combination. While the Sensenich composite propeller is not experiencing any problems related to the resonance referred to by CMI we do acknowledge that the propeller and engine are not mutually exclusive and must ultimately be considered as a system. It is unclear at this time if these issues affect all composite propellers used on CMI four cylinder engines or if it is specific to one particular manufacturer's propeller model.

Sensenich has traditionally approved propellers for use on aircraft engines based on a vibration survey of the propeller and endurance testing per 14 CFR part 35 or ASTM F2506. Vibration surveys record what is happening in the propeller as a result of operation on a particular engine and this data is then used to determine the airworthiness of the propeller on that particular engine configuration. All propeller/engine combinations exhibit vibrational harmonic interaction. It is not possible to design a propeller that will not exhibit vibrational harmonics within the operating envelope when run on an internal combustion engine. The Sensenich C72AE propeller has been vibration tested in accordance with ASTM F2506 and has been determined airworthy for use on the CMI O-200 series engines. Sensenich has not historically determined the airworthiness of the entire propeller, engine, airframe combination but has provided data, typically to the airframe manufacturers, in support of those efforts.

As a result of these magneto failures CMI is requesting that Sensenich discontinue recommending and selling composite propellers for use on CMI four cylinder engines. Although the vibration survey has demonstrated the C72AE propeller to be airworthy when operated on the CMI O-200 series engines and there are numerous installations that have successfully logged in excess of 300 hours without magneto failure, it cannot be shown with certainty that the C72AE propeller is not causing the issues with the CMI magnetos. For these reasons and in the interest of aviation safety, Sensenich has decided to temporarily suspend sales of the C72 series propeller. If at a later date the CMI O-200 series engines can be proven compatible with the C72AE propeller then sales of the C72AE propeller will continue.

ADDITIONAL INFORMATION:

Sensenich is currently in the testing phase of an additional composite propeller, the C76, designed for use on the CMI O-200 engine. The C76 propeller has exhibited significantly different vibratory characteristics from the C72AE propeller and the vibration survey of this propeller on a CMI O-200 engine is scheduled to be completed by early October of this year. Pending successful completion of the vibration survey and related endurance testing per ASTM 2506, Sensenich will release the propeller for service.

Although Sensenich designs propellers for aircraft engines and airframes based on horsepower, rpm, and aircraft speed, the suitability for any particular propeller for an application is the responsibility of the aircraft manufacturer or aircraft owner.

If you have any questions related to the information disclosed in this letter or to discuss any propeller options available for your application during this time please contact Sensenich directly.