

# SENENICH PROPELLER MANUFACTURING COMPANY, INC.

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## SERVICE BULLETIN #R-16 August 1, 1988

**TO:** FAA APPROVED PROPELLER REPAIR STATIONS

**SUBJECT:** IMPROVED PROPELLER BLADE-ANGLE DISTRIBUTION

**PROPELLER MODEL AFFECTED:** 69CK SERIES

**AIRCRAFT MODEL AFFECTED:** CESSNA 150 SERIES with SENENICH PROPELLER

An improved blade-angle distribution for SENENICH 69CK series propellers installed on CESSNA 150 series aircraft, has been developed. It has been found that incorporating the revised angle distribution makes possible a reduction of 2 inches in propeller pitch, improving takeoff and climb without experiencing a reduction of cruise performance. Test data shows that, with a "50" pitch (*52 pitch is standard on CESSNA 150 airplanes*) and the revised blade-angle distribution, time to lift-off may be reduced by about 15%; rate-of-climb may be increased by a factor of about 9%; and the airplane upon which the prototype propeller was tested showed an 85 knot cruise at 10 rpm less than was required with the standard propeller. (*For those interested in "why" a revised blade-angle distribution and a decrease in the pitch of a propeller at the 3/4 radius blade station could improve takeoff and climb and not affect cruise, more accurate knowledge of the natural flow in front of the aircraft cowling makes it possible to design a propeller to waste less energy*)

This revision in blade-angles may be incorporated by FAA approved propeller repair stations when any propeller of the 69CK series is reconditioned (*overhauled*). Incorporation of the blade-angle distribution (*shown on page 13 of SENENICH repair manual SPRM 590*), dated 1 August 1988, shall be indicated by addition of a suffix "L" after the propeller pitch identification on the hub face (*with steel stamp*) and on the identification decal (*with ink pen*). All new and reconditioned propellers obtained from the SENENICH facility will incorporate the revised blade-angle distribution and have an "L" suffix included after the pitch identification. An example of the model designation of a propeller which incorporates the revised blade-angle distribution is "69CK-0-50L". This propeller is 69 inches diameter and 50 inches pitch, incorporating the "L" revision to the blade-angle distribution.