

NICKS IN ALUMINUM PROPELLERS

Why they need to be fixed.

A nick in the leading or trailing edge of an aluminum propeller blade causes a stress concentration which may eventually cause a crack. As the crack progresses it increases the concentration of stress, eventually causing the blade to fail. When a blade or even several inches of a blade breaks off, the resulting imbalance will usually rip the engine off its mounts and cause the engine to depart the aircraft.

Who can fix them.

Minor repairs, such as removal of minor nicks, and scratches, can be accomplished only by an FAA-certificated mechanic using the practices and techniques specified by AC20-37D and the propeller manufacturer's service

data.

How they are fixed.

First the damage is removed using a small fine cut file, then it is faired in. Next, emery cloth is used to remove all traces of the repair. Finally, the area should be closely examined to make sure that all of the damage has been removed. There are limits to the size of repair that can be done in the field by an A&P. See the Advisory Circular referenced below.

Additional resources:

AC No: 20-37D

<http://home.anadolu.edu.tr/~mcavcar/hyo403/ac20-37d.pdf>

AC 43-13-1B Section 4 "Repair of Metal propellers"

http://www2.tech.purdue.edu/at/courses/at308/Technical_Links/Ac43-13-1B/CH8_4.pdf

Also check with the aircraft and propeller manufactures.