

## **To overhaul or reseal..... That is the question**

From: McCauley Propeller Systems

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In these times of belt tightening and dwindling budgets the question arises, whether to overhaul or just reseal that prop. The short answer is Overhaul That Propeller. To understand why, an understanding of the tasks and how they differ is necessary.

An overhaul is a reconditioning of the propeller to keep it in airworthy condition. First, the propeller is completely disassembled and cleaned. All seals, gaskets, and hardware are replaced. The wear areas on the remaining internal parts are measured to make sure they are still within service limits. Plated parts are replated for corrosion protection and in some cases the plating will bring them back up to new production specifications. Also, all remaining parts will have Non-Destructive Inspections performed to check for hidden damage or cracks. The blades will have all the nicks and dings repaired and the surfaces will be ground to return them to the proper aerodynamic shape. The blades will also be measured to make sure the width and thickness remains within the serviceable limits. Since all the parts have either been inspected, measured or replaced the propeller should come out of the overhaul looking and performing as good as a brand new propeller.

A reseal on the other hand is just as stated. The propeller is disassembled, cleaned and only the seals are replaced. Parts typically are not measured and only a visual inspection for obvious damage is accomplished. Since the parts are not measured and no non-destructive testing is completed, a part that is cracked, damaged or worn beyond limits could be returned to service. This could potentially affect the propeller integrity and lead to a failure, cause premature wear on other internal parts and may affect the overall reliability in operation. In the long run a reseal may not be the economical alternative it was thought to be.

Overhaul requirements are both flight hour and calendar based. The hourly time limit is based on operational hours and was defined mainly due to component wear. The more the propeller is operated the more wear is experienced in the contact areas. Evaluation of blade damage, prop balance and blade track are also factors. The calendar time limit is based on the years the assembly has been exposed to the elements. This recommendation speaks directly to corrosion (both internal and external), lubrication, and seal integrity. Exceeding either the hourly time or calendar time limits is not recommended and could result in an unsafe condition.

In addition to the safety benefit of timely propeller overhauls there are warranty considerations. The McCauley warranty period is 3 years, but McCauley will also cover the cost of any parts requiring replacement due to a manufacturing defect if found at or before the first recommended overhaul interval. McCauley recommended TBO's can be found in McCauley Service Bulletin SB137AE which is available for download at [www.mccauley.textron.com](http://www.mccauley.textron.com). With proper maintenance and timely overhauls the McCauley propeller will provide years of reliable performance. To receive additional information on propeller overhauls please contact the nearest McCauley Authorized Service Facility or McCauley Propeller Customer Service at 1-800-621-7767.