

Editor's Note: This Warbird Note has not been completed by Mr. Sohn. Phrases in [brackets] have been added by the editor.

A subject that may be a "sacred cow" with several people came up during a discussion this afternoon. I thought it might be of some interest to discuss how different people view the use of this procedure and how their perceptions may influence their viewpoints. Some perceptions may be valid and some not, let's discuss them in turn and see where we end up.

First of all, I don't think much serious disagreement exists with the need for pre-oiling of an engine if you're hoping to get anywhere near the projected hours between overhauls we've been told were possible / probable. We touched on failure to do this in WARBIRD NOTES # 3 as being a possible cause of master rod failure. This is especially true nowadays where we usually see a low amount of time being put on an engine compared to the time the military or airlines used to accumulate in the old days. Even back then, very detailed requirements were specified after overhaul or for preserving and then returning to service engines that were to be unused for a period.

One question asked is "does the oil pressure generated by this feather pump pre-oiling furnish lubrication to the rear bearing". To answer that we'll need to look at a schematic of a [specific] engine. When using this procedure we've seen about 50# indicated on a B-25 engine after the prop traveled through the its full cycle reaching its unfeathered position.

Another question asked is "what's the prop doing during this process?" If you refer back to WARBIRD NOTES # 5 you'll see that as the feathering pump builds up oil pressure it initially moves the blades to feather. As you continue holding it down more pressure builds up and somewhere around 600 # it unseats the distribution valve in the prop dome. At this point, the pressure is re-directed to the forward side of the piston within the dome, moving the blades towards unfeather. They will continue to move towards the low pitch stops until bleed holes drilled in the [dome pressure relief valve of the distributor valve assembly] are uncovered, dumping the pressure and blade movement ceases. As you continue holding the feather button down the resultant oil under pressure is directed back through the prop shaft to the internal engine passages, ultimately ending up in the crankcase.

Finally, we could address one last perception, to me the most important. We all want to furnish clean oil to the bearings of our engines, right? That's why we install filters on smaller engines where it's practical and when it's not we sure try to prevent any foreign material from entering the lubrication system. While reading this are you by any chance drinking a cup of coffee? Good, go ahead and finish it and then look at the bottom of the cup. See any sediment or grounds from just this one filling of coffee? It was filtered to some degree, wasn't it? Now, let's say that you didn't wash this cup for many years but just kept refilling it with coffee. Where does the feathering system get its supply of oil? Yup, that's right. From the bottom of the tank so as to always be available as a last resort for this task. Don't you think you might want to contemplate for a minute or so how much foreign material and sediment is at the bottom of that standpipe before purposely forcing it through the bearings of an engine you intend to fly afterwards? Of course, you must balance this against the observation that you are doing the same thing every time you check the feather pump before takeoff, just not as long or in as high a quantity. Guess all aviation is a compromise, right?