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P-Ponk gear modification comments

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About the P-Ponk Mod...

The current debate over the P-Ponk mod for the landing gear box is interesting. The Pro side of the debate is that the mod actually strengthens the gear box area, and it relieves the strain from the top of the single bolt that holds the gear leg in the gear box. The Con side is, the mod makes the gear box so strong that when a groundloop occurs that the damage is so severe that major gearbox rebuilding is a necessity.

I agree with both sides. I have the mod on my Birddog for the reasons shown in the attached photo. Even a new bolt will fail, and it doesn't make any difference how often you change it, the bolt head is still the main thing holding your gear leg in the airplane. With the P-Ponk mod installed the gear leg is more securely held in position, and if you groundloop your Birddog severely enough you will tear up lots of things, including the gear box. Not much will save the sheet metal in your Birddog if you are unfortunate enough to groundloop. There are different types of groundloops. The nasty destroy-the-entire airplane type, and the benign ho-hum-gee-that-was-exciting-how the hell did you do that? type that does no damage what so ever.

The P-Ponk mod was designed to do two things.

1. Relieve the strain on the bolt head that holds the gear leg in the gear box.
2. Strengthen the gear box area so gentle groundloops are not catastrophic to the airframe.

It does both intended jobs very well, and that is why I installed it on my own Birddog. If you groundloop the Birddog at 35 mph, no matter what you system you use to hold the gear leg in the gear box, you are going to have substantial damage to your Birddog. If you groundloop at speeds less than 35 you will have varying degrees of damage to the airframe depending on numerous factors, i.e. did the wings touch the ground, did the gear leg come loose and fold under the airframe, etc.

Even with the Geisse anti-groundloop landing gear axles installed on the Birddog you can groundloop the Birddog and destroy the airframe. We had this happen to one Birddog earlier this year. A groundloop resulted and the Birddog attacked a boulder on the side of the runway. The Birddog wrapped itself around the rock. The axles help prevent groundloops, but they don't stop all of the damage that can occur from outside forces or other objects.

The pilot is the main groundloop preventor in all cases, and like a fellow Birddogger has told me, "you must think about the landing before you land, not after the groundloop." Good food for thought. I continue to promote the P-Ponk mod just because of all the photos I've seen of Birddogs that have lost their legs due to bolt-head failure. Groundloops can be prevented by knowing how to properly land the Birddog by the full-stall and wheel landing techniques, and when to use each

technique. Knowing your own personal limits on crosswinds...how much wind can you comfortably land in? Proper flight control usage during the landing roll. Remember to fly the Birddog all the way to the wheel chocks on the ramp, also remember that your Birddog is not done flying until you have it anchored to the earth with very stout ropes. It even flies then, as proven this summer in Wichita when every Birddog there jumped its chocks during the Thursday morning "surprise thunderstorm." Most importantly know that your landing gear is properly aligned. This takes some time, but is easily done with simple tools. Just follow the instructions in the maintenance manual, and remember to load the aircraft to gross weight while doing the alignment.

Remember this one thing, historically most Birddog groundloops happen when the wind is calm or blowing 3-5 knots or less. We work our butts off when the wind is howling across the runway, and this is how we should approach every landing in the Birddog. Be ALERT and fly the airplane.

Minard Thompson (AKA Mr. Birddog)

Hello Birddoggers,

There has been much talk lately about the p-ponk STC mod to the fuselage gearbox. The question is to ponk or not to ponk... The answer to this must be made by, you the owner / operator. All I'm writing about is my own personal experience as a FAA certified mechanic & Bird Dog restorer. In my many years of doggin' I've seen quite a bit, some of which I wouldn't believe unless I were there to have seen it for myself.

Keep in mind that the objective of the P-Ponk mod is to capture the attaching end of the gear leg and box it in so as to transfer the load away from the single attachment bolt. This came about due to concerns about the single attaching bolt put there by the factory. In the case of an "A" model it should be an AN7-20A, or in the case of an "E" model it should have been an NAS147-37 bolt. A brief history of these 2 bolts: (AN7- tension strength 13,600 lbs., shear strength 11,250 lbs. NAS147- tension strength 17,100 lbs., shear strength 14,300 lbs. In either case you have to exert almost 9 G's to break these bolts.).

The complaint was that the single bolt was stretching or getting bent and breaking. This became evident when an extreme adverse load was put on the gear. In the many birds I have worked on over the years I have seen both types of gear boxes, stock & ponk modified, it would appear that the ponk modified box had the gear leg tied in so well, that when things went wrong they really went wrong, instead of just the leg coming up through a \$50.00 floor board, it was captured so well that it did severe damage to both of the main gear box bulkheads, not to mention how it twisted the main box castings. I have also seen stock gear boxes, some had the leg snapped off flush with the leg saddle (where the wedges are), but yet the attaching bolt was not damaged, nor were any of the gear box parts or bulkheads, I have also seen a gear box where the bolt did fail, the end of the leg came up through the floor board, the rest of the box itself had little damage. Keep in mind also that when one thing is beef up, the beef transfers the load somewhere else, what's the next weak link?? More bulkhead damage?? More skin damage??

As far as I'm concerned if the unit was properly maintained to begin with, you wouldn't have these problems. Keep in mind guys, most of these birds are 40 50 years old.... (Older than me). How long do you want that \$2.50 bolt to last?? When

was the last time it was changed?? Let's not knock the bird, but instead, let's pay attention to maintenance. In my shop when it comes to dogs, my practice is if history is unknown then we change the bolt, if the bolt has more than 500 hours time in service, we change the bolt, during restoration we change all of the bolts... I hope this has been helpful in some way. You decide. By the way please call (978) 462 0966 for parts sales.

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