

From: Lucian \*\*\*\*\*  
Sent: Thursday, March 10, 2011 11:50 PM  
To: dave@u-nav.com  
Subject:Re: UNAV3500

Dave,

I have looked at the DIY/hobby type autopilots as well, but just reading through the literature on these I quickly realized that their designers lacked the much needed practical experience. Unfortunately, from the outside, flying UAVs looks easier than it is. I just experienced a classic case of this with one of the companies I contract to here. I designed and built a 5m wingspan, 100kg class UAV for them and I also do the test flying for them. They have recently decided that it was too expensive to get me to fly for them everytime so they wanted me to train one of their own people to fly. I put together an extensive training program that would take at least 10-12 months of intensive training to complete (their candidate has never flown anything in his life). This was a big shock as they thought I could teach the guy in 4-5 weeks, because, "how difficult could this be".

One of the companies in Johannesburg has tried the Cloudcap Piccolo on one of their small UAV projects, but after a long struggle they gave it up. Another local UAV manufacturer tried Micropilot on one of their mini UAV projects and that was a total disaster, after months of testing and 27 firmware updates from Micropilot they also gave it up and have decided to stick with their big 250kg and 400kg aircraft. I was involved in a project with the NSSL in Norman, OK years back to build a glider to return weather instruments and I used a PDC-10 with a Garmin Etrex for nav, a Futaba PA-2 for levelling and a PDC20 to control speed through the elevator. This worked quite well, but unfortunately politics eventually sank the project. For this reason I decide to try U-NAV again, and I am glad I did.

I was out of the country for nearly 3 weeks, just after I got the <3500> package, so thats why I only got around to flying it now. I planned my installation carefully and set everything up as suggested in your manual. I eventually went out to the field on Tuesday morning. My first flight was a trim flight, and then it was time to try the autopilot. Roll control was perfect from the go, but there was a bit of a pitch oscillation and the throttle was more active than I thought. First set was reducing gains on the throttle to get that smoother, and then I started adjusting gains and rates on the pitch to smooth that out. By the 5th flight it was flying perfectly..... all in a days work. That tells me this is an impressive autopilot!!!!

I would like to eventually start offering these systems to the local stock and game farmers for counting their animals and for security purposes, so I hope that we will be able to improve the turn around time on US export licenses. I am also hoping, although this year might be a bit difficult, to enter the Outback Amateur UAV challenge with one of my aircraft and a 3500FW autopilot.... maybe next year. For now, I will use the UAV for demonstration purposes and game counting on the local farms.

Lucian