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Date Released: 11-May-2016  
Subject: Best Practice Takeoff Procedure  
Effectivity: All ALTAs  
Require Action: None

## INTRODUCTION

This Service Bulletin (SB) is being issued to clarify the proper ALTA takeoff procedure. This SB is being issued all ALTA operators.

## BACKGROUND

Recently, Freefly has investigated an unstable takeoff caused by improper throttle input prior to takeoff.

The ALTA's flight control loops keep the aircraft level during flight by correcting for pitch and roll disturbances. The control loop integrators are initiated by the flight control firmware 5 seconds after the throttle stick is raised above idle. This gives time for the pilot to advance the throttle stick from idle to hover prior to the integrators initializing.

If the throttle stick is advanced above idle (but below hover position) while the ALTA is on the ground, it is possible for the control loop integrators to become active while the ALTA is in contact with the ground. If this occurs, the flight controller will attempt to maintain level attitude by commanding differing motor speeds, but the reaction force from the ground prevents actual aircraft motion. This can lead to an unsafe takeoff condition when the pilot does eventually advance the throttle to hover because the motors may be at different speeds from one another, resulting in uncommanded pitch or roll movement.

## RECOMMENDATIONS

It is best practice to arm the motors with the ALTA in Manual Mode, confirm control inputs are correct, and advance the throttle stick directly from idle to hover when ready to take off.

If the throttle is advanced past idle but below hover for a long period of time with the machine on the ground, return the throttle to idle to reset the integrators and return the motors to constant idle speed before taking off. Refer to the ALTA Flight Manual for additional detail and procedures <http://freeflysystems.com/software-manuals>.

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