

Brigham Young University AUVSI Capstone Team (Team 45)

Preflight Checklist v0.2

ID	Rev.	Date	Description	Author	Checked By
PF-001	0.1	11-03-	Wrote check-	Andrew Torgesen	Brandon McBride
		2018	list based on		
			google sheet		
			and research		
PF-001	0.2	01-07-	Updated	Andrew Torgesen	Tyler Miller
		2019	checklist based		
			on team feed-		
			back		



1 Purpose

The purpose of this artifact is to keep an up-to-date, standard protocol for ensuring safety and good performance for test flights in hardware. It is important that all test flights are run systematically, and according to the procedures and timelines outlined in this document.

2 Checklist

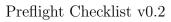
Day Before							
\square Check that the launch file does what it needs to with the plane grounded							
\Box Ensure that the ROSbag records the data you want							
\Box Charge airplane LiPo(s)							
\square Charge RC transmitter battery							
□ Parameter check							
□ Check WiFi config							
\Box Check disk space on Odroid							
Hardware Packing List							
□ Plane							
□ Wings w/ bolt attached							
\Box Wings w/ bolt attached							
□ Wings w/ bolt attached □ Airplane batteries							
 □ Wings w/ bolt attached □ Airplane batteries □ RC transmitter 							
 □ Wings w/ bolt attached □ Airplane batteries □ RC transmitter □ RC transmitter batteries 							
 □ Wings w/ bolt attached □ Airplane batteries □ RC transmitter □ RC transmitter batteries □ 2+ sets of props 							
 □ Wings w/ bolt attached □ Airplane batteries □ RC transmitter □ RC transmitter batteries □ 2+ sets of props □ Fiber tape 							



□ Safety glasses					
□ Screwdriver					
☐ Table (optional)					
\square Targets (optional)					
Comms Packing List					
\square Router + power cable					
\Box Litebeam + 2 ethernet cables					
\square A/C POE adapter					
\square Extra ethernet cable					
□ Car power adapter					
\square 3-plug extension cable					
Flight Checklist: Before Launching					
Before Powering Motor:					
□ Start network					
\Box Attach wings and check bolt tightness					
\square Attach props and check tightness					
□ Strap down battery					
□ Connect battery monitor					
\square Check plane CG					
□ Connect battery					
☐ Ensure network connection					
\square Launch ROS (through <i>screen</i> , if possible)					
\square Ensure GPS Fix (≥ 3 satellites)					
□ Calibrate Sensors					
\square IMU: rosservice call /calibrate_imu					



\Box A	Airspeed: rosservice call /calibrate_airspeed								
	\square Barometer: rosservice call /calibrate_baro								
	$\hfill\Box$ Check attitude estimation (except for yaw–if wrong, update ins offset)								
	Check airspeed								
	Check GPS								
□ Check	RC								
\Box Ensure RC transmitter is emitting enough power (> 10 mW , 1 W i tion)									
	Vire wiggle test								
	Check control surface direction								
	□ Ailerons								
	□ Elevators								
	\square Rudder								
After Power	ring Motor:								
\square Check	arm/disarm								
☐ Throt	tle test								
\square Check	prop direction								
\square Check	RC override								
□ RC Ra	ange Test (100ft, just do this once per setting config change)								
\overline{FLY}									
Flight Che	ecklist: After Landing								
□ Kill R	OS								
□ Backu	p ROSbag								
□ Clean	shutdown								
□ Unplu	g battery								





\square Gather all items		
Post-flight		
$\hfill\Box$ Set battery to storage voltage		