

Brigham Young University AUVSI Capstone Team (Team 45)

Preflight Checklist v0.1

ID	Rev.	Date	Description	Author	Checked By
PF-001	0.1	11-3-	Wrote check-	Andrew Torgesen	Brandon McBride
		2018	list based on		
			google sheet		
			and research		



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

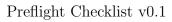
Day Before							
\square Check that the launch file does what it needs to with the plane grounded							
\Box Ensure that the ROSbag records the data you want							
\Box Charge airplane LiPo(s)							
\square Charge RC transmitter battery							
□ Parameter check							
□ Check WiFi config							
\Box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



□ Batter	y monitor						
□ Safety	☐ Safety glasses						
□ Screwe	lriger						
□ Table	(optional)						
☐ Target	s (optional)						
Comms Pa	cking List						
□ Router	+ power cable						
☐ Litebea	am + 2 ethernet cables						
\square A/C P	OE adapter						
□ Extra	ethernet cable						
□ Car po	ower adapter						
☐ 3-plug	extension cable						
□ UART	cable						
Flight Che	cklist: Before Launching						
Before Powe	ring Motor:						
□ Start r	network						
☐ Attach	wings and check bolt tightness						
□ Attach	props and check tightness						
☐ Strap o	down battery						
□ Conne	ct battery monitor						
\square Check	plane CG						
\square Connec	ct battery						
□ Ensure	e network connection						
□ Launch	n ROS (through <i>screen</i> , if possible)						
□ Ensure	e GPS Fix (≥ 3 satellites)						



□ Calibrate Sensors					
\square IMU: rosservice call /calibrate_imu					
\square Airspeed: rosservice call /calibrate_airspeed					
\square Barometer: rosservice call /calibrate_baro					
$\hfill\Box$ Check attitude estimation (if wrong, update in s offset)					
☐ Check airspeed					
\square Check GPS					
\square Check RC					
\square Ensure RC transmitter is emitting enough power (> $10mW$)					
☐ Wire wiggle test					
\square Check control surface direction					
\square Ailerons					
□ Elevators					
\square Rudder					
After Powering Motor:					
□ Check arm/disarm					
☐ Check prop direction					
□ Check RC override					
□ RC Range Test (100ft)					
FLY					
Flight Checklist: $After\ Landing$					
□ Kill ROS					
\square Backup ROSbag					
□ Clean shutdown					
□ Unplug battery					





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