Flight Director Checklist

NS-~~004~~ 61

Launch Location = _____

Launch Date = ~~December 6, 2016~~ December 4, 2016

Attempt Number = _____

Payloads:

Command	~4.1 lbs
Hermes	~ 3.5 lbs

Comments:

The Purpose of this launch is to test Hermes

One Month in Advance:
- ✓ Vehicle Rental ~~(check that outlets work)~~
- ✓ Helium Ordered
- ✗ HAM Radio Club notified about using UMD's call sign

Launch Week

Pre-Flight Planning Checklist
- ✓ Send the launch announcement email (probably didn't happen)
- ___ Create Zello station
- ✗ Print waivers
- ✓ Preliminary weather check
- ✓ Preliminary ground track check
- ✓ Payloads determined and ordered
- ✓ Vehicles identified and configured for tracking

Pre-Flight Systems Checklist
- ✓ BLT Bucket (check Inventory) ✓
- ✓ Inflation Bucket (check Inventory) ___
- ✓ Recovery Bucket (check Inventory) ✓
- ✓ Launch Kit (check Inventory) ✓
- ✗ ✓ Balloons (2)   Size of balloon 1 ~~1000 g~~ 1600g   Size of balloon 2 1600 g
- ✓ Batteries (check if charged)
- ✓ Bow Saw
- ___ Clean Up Bucket (Broom, Dust Pan, Garbage)
- ✗ ✓ Extension Pole
- ✓ Functioning Radios and GPS
- ✓ Helium
- ✓ gates
- ✓ Machete
- ✗ ✓ Parachute and Ring + Assembled Command Module kit ✓
- ✓ Payloads
- ✓ Phone Chargers
- ✓ Power Inverter   ✓ Main tracking power Supply
- ✓ Scythe
- ___ Soldering Iron & wire
- ✓ Sling Shot
- ✓ Spare LVCs

- ✓ Cor fix kit   ✓ Power Strip

* EDB, RapTech Dozuingus thics
   (TPS Proposed)

__✓__ Radios/GPS
__✓__ Tie in complete   Exempt payloads: __Hermes__
__✓__ Tarp (Big and Small)
__✓__ Tracking Antennas
____ Tree Climbing Gear
__✓__ Van Keys
__✓__ Walkie-Talkies (& /3)
__✓__ Wi-Fi hotspot
__✓__ 900s Ground station
__✓__ Van checklist

FAA Notification Checklist

____ File NOTAM (6 hours prior)
____ Call NOTAM desk (866-225-7410 ext 9) to get NOTAM number:
      NOTAM # _____
____ Call Washington Center (2 hours prior): 703-771-3470
____ Call HGR Tower 301-797-2039 at 7am

Radios + Callsigns Checklist

Command Module: __W3EAX - 8   W3EAX - 12__
Main tracking van: __W3EAX - 10__
Second tracking van: _____
Specific payloads: _____
_____
_____

Others:
_____

PRE-LAUNCH MEETING / PRE-LAUNCH DAY

____ Launch Confirmation/Postponement Email
Pre-Launch Meeting
- Everyone should have signed a waiver: new ones collected, sign-In sheet for other visitors

- Launch time goal: _____

- Assign/prepare for jobs (BLT, Comms, Nav, etc.)

- Chase Vehicles will need to leave semi-immediately be ready to leave within 5-10 minutes of launch

- Everyone helps clean up, so we can get out efficiently

Final Checks

☑ Waiver Check
✓ Weather Check
✓ Ground Track Check
✓ Zello Check

Launch Day

On launch pad
_✓_ Parachute to Balloon lanyard configured
_✓_ Parachute and Ring assembled
_✓_ Command Module in place
_✓_ Payload string lined up and assembled
_✓_ Harmless payload stickers on each payload
_✓_ Payload string weighed: Necessary Free Lift = _____
_✓_ Antennas in place
_✓_ No sharp edges or weak links

Pre-Inflation Checklist
_✓_ Helium Tanks uncovered and regulator hooked up
_✓_ **Hook lanyard from parachute around balloon neck before connecting to inflation tube!**
_✓_ Instructions and Gloves to BLT anchors
_✓_ Instructions given to tether handlers & tether in place
_✓_ Full payload string laid out and ready to go
_✓_ Balloon in BLT ready to go

Inflation

BLT Instructions: (Always use BLT!!!)
_✓_ Lay out BLT with inside facing up (Velcro side down). Immediately fold together to prevent moisture from getting inside the BLT.
_✓_ When ready for inflation, Place balloon in the center with the neck facing one open end.
_✓_ Fold around the balloon, the Velcro seem should be towards one side so it doesn't end up on the top when fully inflated
_✓_ Designate people to hold BLT down. (At least 4 people)

Start inflating at max flow rate
Inflation Complete: Measure Total Free Lift = _____

Pre-Release Checklist
_✓_ Check payloads are ready
_✓_ Good final communications check
___ Balloon necks Secured
___ Sip knot ___ Fold ___ Duck tape

___ Zip tie · ___ Duck tape

Countdown & Release

☑ All Payloads turned on
☑ Raise Stack above pad in full flight configuration
☑ Telemetry and Downlink good
☑ Tether handlers ready
☑ Countdown from 10
☑ Release

Release Time Mark = 8:49

Initial Heading of Flight = SW

Post launch (during chase)

Max. Alt Approx 77-80th ft (offical :   )

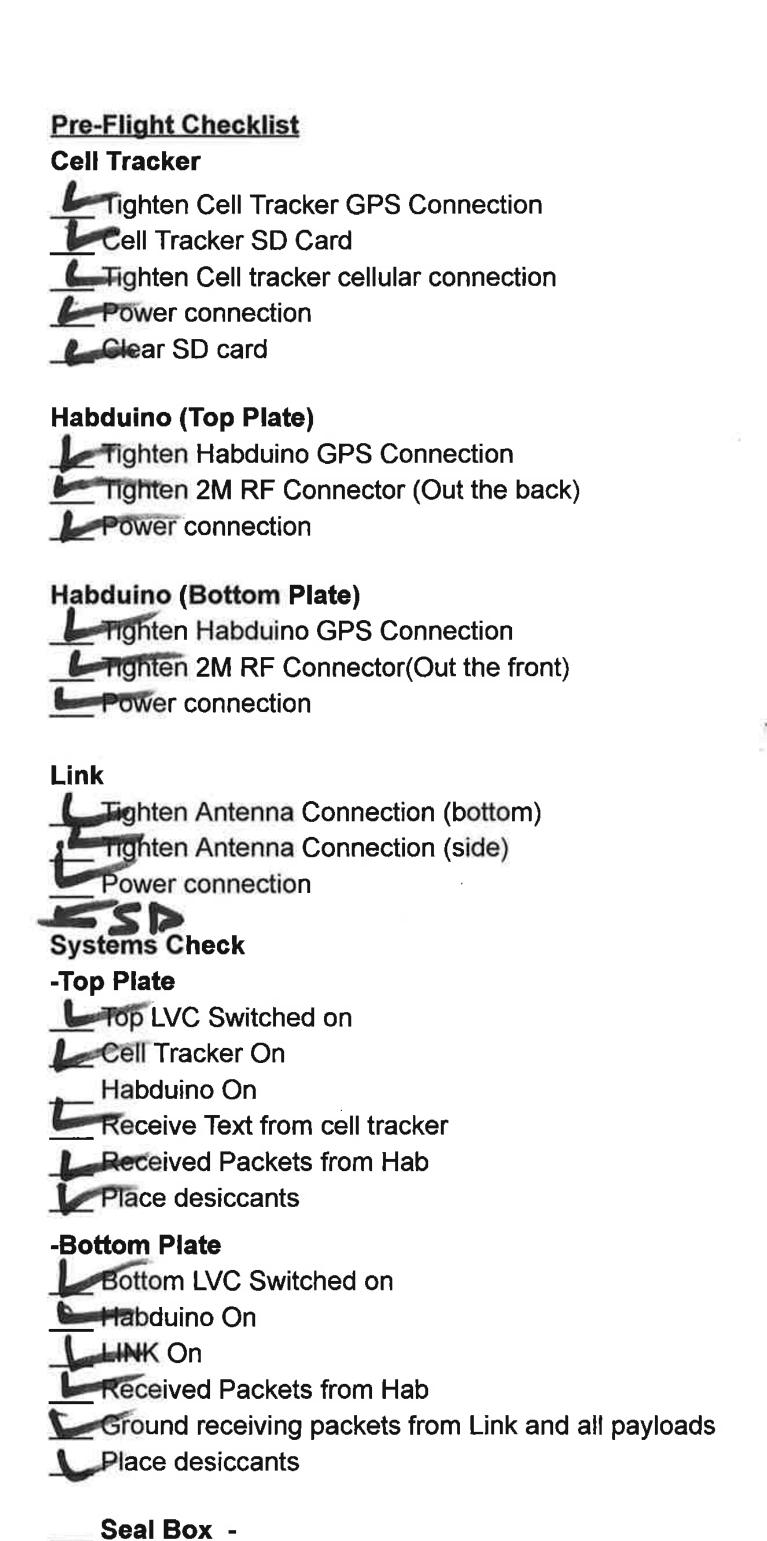- Possible balloon slipped out of Dicttope/Slipknot system
  - Use zip ties!!
- Cmd & Link worked well

- Hermes got good telemetry on the ground until the entire
  Payload fell apart (near max altitude?).
    - Recommendation: No more tupperware
      Container payload Structures.

Pre-Flight Checklist
Cell Tracker

_✓_ Tighten Cell Tracker GPS Connection

_✓_ Cell Tracker SD Card

_✓_ Tighten Cell tracker cellular connection

_✓_ Power connection

_✓_ Clear SD card

Habduino (Top Plate)

_✓_ Tighten Habduino GPS Connection

_✓_ Tighten 2M RF Connector (Out the back)

_✓_ Power connection

Habduino (Bottom Plate)

_✓_ Tighten Habduino GPS Connection

_✓_ Tighten 2M RF Connector(Out the front)

_✓_ Power connection

Link

_✓_ Tighten Antenna Connection (bottom)

_✓_ Tighten Antenna Connection (side)

_✓_ Power connection

_✓_ SD

Systems Check
-Top Plate

_✓_ Top LVC Switched on

_✓_ Cell Tracker On

_____ Habduino On

_✓_ Receive Text from cell tracker

_✓_ Received Packets from Hab

_✓_ Place desiccants

-Bottom Plate

_✓_ Bottom LVC Switched on

_✓_ Habduino On

_✓_ LINK On

_✓_ Received Packets from Hab

_✓_ Ground receiving packets from Link and all payloads

_✓_ Place desiccants

_____ **Seal Box -**

Command Module Checklist
NS-_61_

L-1day:

Link

☑ Confirm ground system software is installed

    ☑ COSMOS

    ☑ VirtualSerialPortEmulator

☑ Run Link test suite, confirm all tests pass

☑ Run test suites for all payloads flying, confirm all tests pass

☑ Confirm Link battery is charged, serial number: _BH-002_, voltage: _12.55_ V

Habduino (Top Plate)

☑ Confirm habduino battery is charged, serial number: _BW-002_, voltage: _8.34_ V

☑ Turn on radios, confirm they get GPS lock, confirm APRS packets are sent

Habduino (Bottom Plate)

☑ Confirm habduino battery is charged, serial number: _BW-003_, voltage: _8.35_ V

☑ Turn on radios, confirm they get GPS lock, confirm APRS packets are sent

Cell Tracker

☑ Confirm cell tracker battery is charged, serial number: _BW-002_, voltage: _8.34_ V

☑ Turn on cell track, confirm it gets GPS lock, confirm text messages are sent

___ Confirm positions are logged to SD

Equipment

___ Confirm command kit is packed with:

    ☑ Spare battery, serial number: _BW-001_, voltage: _8.33_ V (2S)

    ☑ Test battery, serial number: _BH-001_, voltage: _12.51_ V

    ___ Spare habduino

        ___ Turn on radios, confirm they get GPS lock, confirm APRS packets are sent

    ___ Spare empty micro SD card

    ☑ MicroSD to SD card adaptor

    ☑ USB-A to USB-B cable

    ☑ USB-A to micro-USB cable

    ☑ Spare GPS antenna

    ☑ Spare mounting screws (x9)

    ☑ Spare habduino antenna (x2)

    ☑ Spare LVC

    ___ Wrench (for SMA connectors)

    ☑ Screwdriver (for balloonduino screw terminals)

    ☑ Screwdriver (for mounting screws)

    ☑ Desiccants