

# Flight Director Checklist

NS-60

Launch Location = Clearspring Park

Launch Date = Sunday November 13, 2016

Attempt Number = 1

<u>Payloads:</u>	w/ duct tape margin	reported
<u>Cmd</u>	~ 3.9 lbs	3.9
<u>Aerodynamic Stabilization</u>	~ 2.1 lbs	4.9
<u>HEAR SOS</u>	~ 1.65 lbs	1.5
<u>Decent Velocity</u>	~ 1.4 lbs	1.3
<u>MARS I</u>	~ 0.2 lbs	
<u>FLI</u>		
<u>MARS II</u>	~ 0.53 lbs	
<u>GLIDR</u>	~ 1 lb	
<u>{ Tyron ?</u>	~ 1 lb	
<u>{ Hermes ?</u>	~ 1 lb	

Comments:

AERASS  
 HEAR SOS  
 Decent Velocity  
 Tyron  
 Hermes

Mars I  
 FLI  
 MARS II  
 GLIDR

Max Alt  
 approx. 86,600 ft  
 Actual: 86,994.75 ft

## 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
- Create Zello station UMD NS-60
- 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) - *Bring small BLT*
- Inflation Bucket (check Inventory)
- Recovery Bucket (check Inventory)
- Launch Kit (check Inventory)
- Balloons (2) Size of balloon 1 1600g Size of balloon 2 1600g
- Batteries (check if charged)
- Bow Saw(s)
- Clean Up Bucket (Broom, Dust Pan, Garbage)
- Extension Pole
- Functioning Radios and GPS
- Helium
- Ligates
- Machete
- Parachute and Ring + Assembled Command Module kit
- Payloads
- Phone Chargers
- Power Inverter
- Scythe
- Soldering Iron & wire
- Sling Shot
- Spare LVCs
- Pack of Fuses*

- Radios/GPS
- Tie in complete      Exempt payloads: Aero Stab, Hermes, Glider
- Tarp (Big and Small)
- Tracking Antennas
- Tree Climbing Gear
- Van Keys
- Walkie-Talkies Y3
- Wi-Fi hotspot
- 900s Ground station

### 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: \_\_\_\_\_
- Main tracking van: \_\_\_\_\_
- 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

Main

Power: Dale fulltime

Secondary

Michael Walker  
Lorenzo - chase  
Luke?

Struggle

Tyler fulltime

## 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 seam 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

~~GLIDER~~ /FLP  
GLIDER<sup>^</sup> ground station ready

— ease  
**Countdown & Release**

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

Release Time Mark = \_\_\_\_\_

Initial Heading of Flight = \_\_\_\_\_

**Post launch (during chase)**

# Command Module Checklist

NS- 60

## Pre-Flight Checklist

### Cell Tracker

- Cell Tracker GPS Connection
- Cell Tracker SD Card
- Cell tracker cellular connection
- Power connection

### Habduino (Top Plate)

- Habduino GPS Connection
- 2M RF Connector (Out the back)
- Power connection

### Habduino (Bottom Plate)

- Habduino GPS Connection
- 2M RF Connector (Out the front)
- Power connection

### Link

- Antenna Connection 1
- Antenna Connection 2
- Power connection

## 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
- Link system is lock (Verify with ground)
- Place desiccants

Seal Box -

if all steps are checked do the following

**REMOVE BEFORE FLIGHT™**