# Launch Director Checklist
## NS-79

Launch Location: Harpers Ferry Middle School

Launch date: 9/29/18

**Payload Lineup:**

| Payload Name | POC Name | Passed Inspection | Inspector Initials |
|---|---|---|---|
| Command Module | Blaire W. | | |
| Bits/ Panoramic | Jonathan M. | | |
| SPIDER | Rachel C. | | |
| DANY | Tyler B. | | |
| Glen-Ely | Tyler B. | | |
| | | | |
| | | | |
| | | | |
| | | | |

**Balloon Size(s):** 600

**Callsigns:**

KC3HOB-10, KC3FXX-5

## L-3 Day Checklist
___ Verify all payloads have submitted launch readiness forms


## L-2 Day Checklist
___ Conduct ground track meeting
___ Print van inspection forms
___ Create van position roster


## L-1 Day Checklist
___ Pick up vans
___ Conduct van inspections (attach checklists)
    ___ Van 1 (Callsign: _____)
    ___ Van 2 (Callsign: _____)
    ___ Van 3 (Callsign: _____)
    ___ Van 4 (Callsign: _____)
___ Inspect all payloads against payload requirements document
___ Charge batteries
    ___ Portable car battery
    ___ Wi-fi hotspot (AT&T)
    ___ Wi-fi hotspot (Sprint)
___ Verify AT&T hotspot is paid
___ Inventory launch supplies (checklists in respective boxes)
    ___ BLT Bucket
    ___ Inflation Bucket
    ___ Recovery Bucket
    ___ Launch Kit
    ___ Main tracking box
    ___ Launch Solder Kit
___ Verify completion of Command Module L-1 day checklist (attach checklist)
___ Pack (attach checklist)

## L-0 Pre-Departure Checklist

☑ Conduct head count against van roster
☑ Signed waivers from all participants
☑ Verify all convoy vehicles have Zello
☑ Radio check

## L-0 Launch Site Checklist

### Launch/Inflation Setup Checklist

_____ Pre-launch setup meeting (See PAO)
☑ Tarp setup (indicate (full) or half configuration)
☑ Place BLT in optimal launch location
☑ Indication direction of payload string from balloon
☑ Parachute-to-balloon lanyard configured
☑ Parachute and ring untangled
☑ Command Module in place
☑ Harmless payload stickers on each payload
☑ Payload string lined up and assembled

### Pre-Inflation Checklist

☑ *Hook lanyard from parachute around balloon neck before connecting to inflation tube*
N/A Tethers in place
N/A Brief 2 tether handlers (See PAO)
☑ Did Dr. Bowden call the tower? (See Dr. Bowden)
☑ Balloon in BLT ready to go (See BLT Engineer)

### Pre-Release Checklist

☑ Check payloads are ready
☑ Final communications check

## Countdown & Release

____✓ Inform payload PoCs to hold payloads above the launch pad

__NA__ Tether handlers ready

____✓ Slowly raise payload string

__—__ Measure Total Free Lift = _____ (optional)

____✓ Countdown from 10 (Final Countdown Song Optional)

____✓ Release!

Release Time Mark = ___9:52:24___

## L-0 Post-Launch Checklist

____ Ensure all materials are stowed in correct boxes/kit

____ Stow all materials in lab

____ Ensure vans are cleaned out

____ Download APRS logs from aprs.fi and upload to server

____ Remind payload designers to upload data to server

# Command Module  Checklist
## NS-_79_

### 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~~

### 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/Aprs.fi
- ~~Ground receiving packets from link and all payloads~~
- ✓ Place desiccants

- ___ **Seal Box**

*Texts to : Shailesh Blaire*


# Command Module 2 Checklist
## NS-_79_

**L-1day:**

# Command Module 1 Checklist
## NS-_79_

**L-1day:**

~~Link~~

___ ~~Confirm ground system software is installed~~
    ___ ~~COSMOS~~
    ___ ~~Virtual Serial Port Emulator~~
___ ~~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: _____ , voltage: _____ V~~

**Habduino (Top Plate)**

___ Habduino serial number W3EAX-14
___ Confirm habduino battery is charged, serial number: BW-011 , voltage: 8.35 V    FV: 6.67 V
___ Turn on radios, confirm they get GPS lock, confirm APRS packets are sent

**Habduino (Bottom Plate)**

___ Habduino serial number W3EAX-12
___ Confirm habduino battery is charged, serial number: BW-012 , voltage: 8.34 V    FV: 7.69V
___ Turn on radios, confirm they get GPS lock, confirm APRS packets are sent

**Cell Tracker**

___ Confirm cell tracker battery is charged, serial number: -011 , voltage: _____ 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: BW010 , voltage: 8.31 V
    ✓ Spare habduino
        ___ Habduino serial number W3EAX-10
        ___ 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 mounting screws (x9)
✓ Spare habduino antenna (x2)
___ Spare LVC rip
✓ Wrench (for SMA connectors)
✓ Screwdriver (for balloonduino screw terminals)
✓ Screwdriver (for mounting screws)
___ Desiccants rip            **Page Turn Over-->**

**Habduino (Top Plate)**
___ Confirm habduino battery is charged, serial number: _____, voltage: _____ V
___ Turn on radios, confirm they get GPS lock, confirm APRS packets are sent

**Cell Tracker**
___ Confirm cell tracker battery is charged, serial number: _____, voltage: _____ V
___ Turn on cell track, confirm it gets GPS lock, confirm text messages are sent
___ Confirm positions are logged to SD

## Launch Day

**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

**Systems Check**
___ Top LVC Switched on
___ Cell Tracker On
___ Habduino On
___ Batteries Secured
___ Receive Text from cell tracker
___ Received Packets from Hab
___ Place desiccants

___ **Seal Box**

*Buke Dessicant*

# Packing Checklist
## NS-79

### Launch Equipment
- [x] (Balloons) —> in NBRF
- [x] Helium tanks
- [x] Tarp (Big and Small)
- [x] Parachute and Ring
- [x] (Command Module kit)
- [x] Broom
- [x] Square Plywood Bases
- [x] Scale for Measuring Payloads
- [x] BLT Bucket
- [x] Inflation Bucket
- [x] Launch Kit
- [x] Main tracking box
- [x] Launch Solder Kit

### Recovery
- [x] Bow Saw
- [x] Extension Pole
- [x] Scythe
- [x] Sling Shot
- [x] Recovery Bucket

### Payloads
- [x] Car battery
- [x] (Battery box)
- [x] (Battery Charger)
- [x] (Payloads)
- [ ] Spare LVCs

✓ Tyler's Weather Ground Station

Tracking/Communications
___ ✓ ___ (Tracking Laptop(s))
✓ Tracking Antennas
✓ 900s Ground station
✓ Radios
___ ✓ (Walkie-Talkies)
___ ✓ (Wi-Fi hotspot(s))
___ ✓ (Power Inverter)
___ ✓ (Power Strip(s))
✓ Car magnets