

# HARBOR



*High Altitude Reconnaissance Balloon for Outreach and Research*

## Flight Checklist – Visible InfraRed Imaging System (VIRIS)

VERSION: HARBOR Timer

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Flight Number : \_\_\_\_\_ Launch Time : \_\_\_\_\_  
Flight Date : \_\_\_\_\_ Flight Duration : \_\_\_\_\_  
Flight Locale : \_\_\_\_\_ Max ALT : \_\_\_\_\_  
Datalog File : \_\_\_\_\_ Target Distance : \_\_\_\_\_

### PRE-FLIGHT

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- Purchase 4 AA Lithium Batteries
- Recharge all batteries (Extended and Standard) packs for cameras
- Turn the ON/OFF switch to the **OFF** position on black AA battery case.
- Insert 3 AA Lithium Batteries in the battery pack holder
- Unlock SD card and delete previous picture files on each card (DCIM Folder)
- Ensure that "Remote\_timer.bas" is contained on each SD card under Scripts file (CHDK/SCRIPTS/Remote\_timer.bas)
- Remove and **LOCK** each SD card (this will ensure that SDM system will boot when camera is turned on)
- Insert a freshly charged extended battery into each camera
- Turn on cameras and ensure that the time and date are accurate on each model. If not, set them to correct date and time. (Push "MENU", "Left", Push "Down" till you find DATE and TIME)
- Turn OFF cameras and insert IR labeled SD card into red camera, remaining card into silver camera
- Tighten eye bolts on the camera mounts after desired position is fixed using a 7/16" wrench
- Attach each camera in labeled position to the mount with supplied rubber spacer and thumb bolt tightly

### FLIGHTLINE

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- Check camera mode switch on back and ensure that it is in picture mode, not AUTO or MOVIE for each camera.
- Place camera(s) system in blue styrene box with cameras facing hole cutouts.
- Place clear plastic strip (6.25" x 1.75") behind cameras and position such that it covers the back buttons on camera.
- Take the 3 biggest pieces of foam and place into corner behind red camera
- Take the 3 smallest pieces of foam and place into corner behind silver camera

- Position timer circuit behind cameras and center between foam pieces.
- Turn on cameras by holding the on/off button until the lens opens and extends into cutouts of the blue box
- Ensure that lens have fully extended without obstruction.
- "Harbor Timer" script will autoload and start.
- Ensure that the script has loaded and started by visual inspection. Soft beeps are another indicator that script is running.

**\*\*Caution: Do not to touch the shutter button on cameras as this will cause the script to stop.**

- Attach cameras to the timer circuit and black battery case by inserting a USB cable end into the each camera's USB port
- Turn the ON/OFF switch on black battery case to the **ON** position.
- Place Battery pack behind timer circuit.
- Adjust USB wiring and needed to close box. Make sure there is no loose connections.
  - Cameras should be taking pictures
- Place on blue top and secure using two Velcro straps.
- Attach the box using the eye bolts to the balloon tether line with camera lens pointed away from the line

## POST-FLIGHT --- ---

- Undo the Velcro straps of the blue insulation box and remove top
- Turn ON/OFF switch on black battery pack to **OFF** position
- Disconnect USB cable from both cameras.
- Remove battery pack, timer circuit with wiring, and foam
- Remove camera system
- If script is still running, push the shutter button **once** on each camera to abort/interrupt the script (In lower left hand corner the words **\*\*INTERRUPTED\*\*** should appear)
- Once script is interrupted, push the "DISP" button **once** and then "ON/OFF" button to turn off cameras.
- If the camera doesn't turn off, repeat previous two steps.

## DATA RECOVERY --- ---

- Remove cameras from mount and remove respective SD cards from them.
- Unlock** each SD card
- Recover the picture files under the DCIM folder on each SD card
- Make a backup of all pictures