

# HARBOR

*High Altitude Reconnaissance Balloon for Outreach and Research*

## Flight Checklist – LEGO Experiment (ADE)



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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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- Purge previous datalog files from NXT memory
- Load latest software to NXT. *SOFTWARE*: \_\_\_\_\_
- Insert 6 fresh AA batteries into NXT.

### FLIGHTLINE

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- Zip tie TARGET panel to box lid
- Zip tie ULTRASONIC SENSOR to box lid, facing TARGET
- Measure distance from ULTRASONIC SENSOR to TARGET
- Connect cable from NXT PORT 4 to ULTRASONIC SENSOR
- Run SOFTWARE Program.
- CLOSE ENCOUNTERS tone should play when program starts
- Flip BUTTON PROTECTION BAR and secure with RED PINS
- Connect Booster Bob in g-Couch to left side of NXT. *CLOSE VISOR*.
- Deposit NXT in flight module (Secure?)

### POST-FLIGHT

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- Release Red Pins and open BUTTON PROTECTION BAR.
- If program is still running, ABORT by pressing DK GREY BUTTON.
- Disconnect from ULTRASONIC SENSOR.

### DATA RECOVERY

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- Recover Data File with NXT-G; listed under OTHERS in MEMORY.
- Datalog format 2 COL: Time in (ms) up to 1,026,203; Range in (cm) to target
- Debrief Bob.

**NOTES:**

LEGO == Lego Explorer for Geophysical Observations  
NXT1.1 (BRICK = VOYAGER)

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LEGO-ADE == "Air Density via Echolocation"  
Uses ultrasonic sensor rangefinding to determine air density.

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