# Con-Ops Script

## Ground

1. Verify that all subsystems work
   1. Run CPTs
2. Power on the following power domains:
   1. EPS
   2. BDot
   3. PPT
   4. Estim
3. Send reset mission command
4. Power down

## Orbit

1. COM1 powers up
   1. Validate telemetry comes back
   2. Validate that commands go up
      1. Turn on a subsystem (depending on where in the script this step falls)[[1]](#endnote-1)
         1. EPS
         2. BDot
         3. Estim
         4. COM2
   3. Calculate percentage of rollcall packets lost (based on how many subsystems are on
2. Dist powers up
   1. Verify that battery voltage is at an acceptable level.
   2. Verify Undervoltage state is normal
3. EPS powers up
   1. Verify that Coulomb Counter voltage on Batt board is above 5.2V (battery not in undervoltage)
   2. Verify that solar panels are charging by checking to see if:
      1. the voltage of the panels is at the operating point of 15 volts or 13 Volts for the center panel.
      2. The current makes sense in relation to the voltage of the battery. If the battery voltage is high, the current should be low. If the battery voltage is not close at its maximum, then the current should be high (~1 amp). It’s bad news if battery voltage is low, and current is low.
4. BDot powers up
   1. BDot automatic detumble (10 min)
5. BDot detumbles or enters sleep mode
   1. Check if BDot thinks it is tumbling
   2. Check BDot state (SLEEP indicates it didn’t detumble)
      1. Look at angular rates (by mag readings, dipoles and variance)
      2. If the rates increased, consider polarity override protocol
   3. Sanity check BDot magnetometer readings
      1. Confirm that BDot mag readings are in the range of [X1,X2]
6. Run BDot again if tumbling and correct polarity (extend time)
   1. Repeat a, b from above
7. Turn on Estim
   1. Make sure that all rollcall gets down (bus isn’t choked)
   2. Sanity-check Sensorproc magnetometer readings (range: [,])
   3. Check all 3 magnetometers against each other to determine if one is broken
   4. Choose a magnetometer for BDot to use
8. Turn on COM2
9. Wait for COM2 pass
   1. Send known payload
10. Turn on RAHS
    1. Put COM1 into camera mode
    2. Send a picture (via COM1)
    3. Wait for a COM2 pass
    4. Send picture with COM2
11. Power off RAHS
12. Power on PPT
13. Fire PPT
    1. Turn off everything we can get away with (TODO)
    2. Check health of all subsystems
       1. Check resets
       2. Make sure BDot can detumble/magnetometer gives sensible results
14. Fire PPT multiple times
    1. Repeat all above substeps after consecutive fires
15. EOL

1. NOTE: after sending commands that would also be sent from the autosequencer, the queued command should be cleared using an autosequencer function [↑](#endnote-ref-1)