**Flight Test Matrix**

The Flight test Matrix provides detailed descriptions of all procedures to be performed by Mission Specialists during the entire flight. Unlike the Flight Test Procedures flowchart, which lists general items (e.g. “start experiment software”, this chart should contain all procedures in explicit detail (e.g. instead of “start experiment software”, you’d break that down into “Open experiment.py, Type START, Hit ENTER”). The chart should contain every step required, in case someone less experienced with experimental procedures needs to operate the experiment (e.g. a backup mission specialist), or the experimenter is disoriented during flight.

You should add to this chart the amount of parabolas needed to meet your Mission Objectives. Early cancellation due to motion sickness or longer than expected time requirements between parabolas could lead to the completion of as few as 6 or 7 parabolas. Please organize your experiment accordingly to ensure maximal data collection in the first 6 parabolas. If your experiment does not require level flight time between parabolas, remove these rows. If level flight time is required between certain parabolas, be sure to modify the length of time at level flight required. Include as many details as possible in the “Procedure” column. An example is shown in italics.

**Table 1:** Flight Test Matrix Template

| **Stage** | | **Location** | **Length (mm:ss)** | **Procedure** |
| --- | --- | --- | --- | --- |
| Boarding (Pelican case is already secured within Falcon 20) | | Campaign site Tarmac | 5:00 |  |
| Taxi | | Airport | 5:00 |  |
| Takeoff | | Airport | 5:00 |  |
| Transit to Research Airspace | | | 15:00 |  |
| **Acclimatization Parabola** | 2g | Research Airspace | 0:20 | *No tasks* |
| µg | 0:20 | *- Press START button upon visual confirmation of 0g status*  *- Monitor experiment functions via Dashboard*  *- Once timer has reached 15 s, push FILL button to stop reaction* |
| 2g | 0:20 | *No tasks* |
| Level flight | 3:00 | *- Record FILL STATUS to confirm successful trial* |
| **Data Parabola 1** | 2g | Research Airspace | 0:20 |  |
| µg | 0:20 |  |
| 2g | 0:20 |  |
| Level flight | 3:00 |  |
| **Data Parabola 2** | 2g | Research Airspace | 0:20 |  |
| µg | 0:20 |  |
| 2g | 0:20 |  |
| Level flight | 3:00 |  |
| **Data Parabola 3** | 2g | Research Airspace | 0:20 |  |
| µg | 0:20 |  |
| 2g | 0:20 |  |
| Level flight | 3:00 |  |
| **Data Parabola 4** | 2g | Research Airspace | 0:20 |  |
| µg | 0:20 |  |
| 2g | 0:20 |  |
| Level flight | 3:00 |  |
| **Data Parabola 5** | 2g | Research Airspace | 0:20 |  |
| µg | 0:20 |  |
| 2g | 0:20 |  |
| Level flight | 3:00 |  |
| **Data Parabola 6** | 2g | Research Airspace | 0:20 |  |
| µg | 0:20 |  |
| 2g | 0:20 |  |
| Level flight | 3:00 |  |
| **Data Parabola 7** | 2g | Research Airspace | 0:20 |  |
| µg | 0:20 |  |
| 2g | 0:20 |  |
| Level flight | 3:00 |  |
| **Data Parabola 8** | 2g | Research Airspace | 0:20 |  |
| µg | 0:20 |  |
| 2g | 0:20 |  |
| Level flight | 3:00 |  |
| **Data Parabola 9** | 2g | Research Airspace | 0:20 |  |
| µg | 0:20 |  |
| 2g | 0:20 |  |
| Level flight | 3:00 |  |
| **Data Parabola 10** | 2g | Research Airspace | 0:20 |  |
| µg | 0:20 |  |
| 2g | 0:20 |  |
| Transit to YOW | | | 15:00 |  |
| Landing | | Ottawa Int’l Airport (YOW) | 5:00 |  |
| Taxi | | Ottawa Int’l Airport (YOW) | 5:00 |  |
| Disembark (Pelican case stays mounted in Falcon 20) | | Campaign site Tarmac | 5:00 |  |