# Mission Overview Document

## Shop to Trailer

1. Disassemble into parts
   1. Foam packing
   2. Package safely
2. Load all equipment for launch
3. Double-check everything is secured to trailer

## Arrival

1. Setup launch rail
   1. Setup bunker/ground control area
2. Unpack parts
   1. Remove foam packaging
3. Begin assembly
   1. Propulsion section
   2. Recovery section
   3. Double-check for completion (horizontal)
   4. Avionics system powerup
4. Raise launch rail
   1. System check (vertical)
   2. Gyroscope calibration
   3. Avionics system checks
5. Reduction to trained/necessary personnel
   1. Flush propellant system
      1. Avionics propellant system functional check
   2. Attach propellant lines
   3. Check propellant tanks
6. Start propellant filling
   1. Evacuate all personnel to bunker
   2. Fill fuel tank
   3. Fill inert gas tank
   4. Fill oxygen tank
   5. Avionics propellant pressure sensor check
7. Engine start procedure
   1. Initiate computerized start sequence (avionics countdown takeover)
      1. Begin propellant pump for ignition
      2. Propellant pressure sensor check
8. Launch
   1. Monitor telemetry data for unexpected values on any system
   2. Autonomous systems have full control
      1. Once assured that the vehicle will reach 100km, shut down engine
      2. Transition to recovery mode at apogee
9. Recovery
   1. Autonomous systems have full control
      1. Once vehicle reaches apogee start recovery procedure
   2. On landing:
      1. Inspect rocket with drone to ensure safe to approach
      2. Propellant tank temperature monitoring to estimate remaining fuel pressure
   3. If safe:
      1. Disassemble into parts
      2. Collect winnings (not optional, even if not winner)