Slocum Deployment (coastal focus long format)

1. Was software image applied to glider during checkout?
    a. SBD, MBD, TBD set accordingly
    b. Core mission MA files should be set correctly for test mission
    c. Confirm log folder is clear (of at least SBD's)
2. status.mi
    a. Mission completed normally and confirm GPS hit achieved
3. Vehicle Sanity Check
    a. Battery level
    b. Vacuum level (> 7 in Hg)
    c. Confirm 'boot app' with 'boot' command
    d. How is the clock, did you sync_time the day before? If not get a 3 minute GPS hit (callback 3) and issue a sync_time
4. Stage 1 deployment (glider in water)
    a. With or without float
        i. Typically float is used when glider is shipped and deployed in a new area or uncertain ballast
        ii. Floats are not used when confident of ballast
    b. zero_ocean_pressure
    c. run odctd.mi
        i. confirm abort is for overdepth
        ii. confirm boat witnessed submergence and reemergence
        iii. note abort time and mark (this will become deployment start time)
        iv. note GPS location and insert into GE or SFMC. Create spatial awareness of glider's location and first waypoint
    d. Boat side (if possible) (not essential)
        i. Transfer DBD and MLG's unless directory is full
5. Stage 2 deployment (Test Mission)
    a. Test Mission Parameters
        i. Runs for < 20 min
        ii. Lightly samples all data on science bay, only CTD is included in the SBD & MBD
        iii. Mission completes to gliderDOS
        iv. Backup timer of 30 minutes
    b. Confirm goto_l10.ma makes sense given GPS mission above
    c. Run Test Mission
    d. Transfer SBD, MBD, and TBD via iridium from the test mission. If unsure of the data file check c:\logs\sys.log
    e. Data analysis (depending on tool used, glider Plot or matlab scripts)
        i. Flight Dynamics
            1. Note average roll of vehicle, across up's and downs
            2. Note dive and climb pitch angles

a. Should at least be positive on climbs and negative on dives
b. Not to exceed 35 degrees, if so take note, usually a glider should step up to right pitch angle, not overshoot
c. Pitch not responsive?

3. Note if vehicle tracks a heading to within +- 40 degrees
    a. Note if heading is tracked consistently port or starboard to intended
    b. If heading tracks about 0 error, fin should also cross over 0 point, confirm this
4. Altimeter
    a. Confirm that we are seeing bottom (if possible, bottom < 80 m away)
    b. Any false hits or bottoms?
    c. Strong return on bottom > 2,3 m_water_depth's updated on the dive

ii. Ballast considerations
1. Dive and climb time should be equal given equal magnitude pitch on dive and climbs.
2. Plot of water density can help decipher results

iii. Pressure / Depth Checks
1. CTD and glider pressure should agree (TBD data + MBD data)
2. Confirm glider not impacting bottom
3. Confirm if glider is breaching or near surface, note approximate climb depth.
4. Note if glider appears 'out of the water' or negative depth

iv. Science Checks
1. Temperature, salinity, density sanity check
2. Other data exists?
    a. Optode phases
    b. All necessary optical channels
3. Timestamp check – Make sure both pressure sensors line up and no lag or missing data. If missing data possible science computer overload

f. Note surfacing GPS and mark in GE, waypoint location still OK?

6. Stage 3 Deployment (Final Mission)
    a. Make necessary MA adjustments
        i. goto still pertinent?
        ii. adjust no_comms to 1 hour missions with backup set to 1 hour past eventual surfacing interval (ie: 4 hours for 3 hours)
        iii. yo10.ma
            1. adjust dive_to depth if glider was seeing bottom satisfactorily
            2. adjust climb_to depth if glider was breaching
        iv. if glider is not obtaining proper pitch angles quickly, make adjustment of doubling u_pitch_max_delta_battpos (usually .02 to .04)
        v. Correct any SBD, MBD, TBD file errors
    b. Run final mission