



Work Instruction

Document No.: 8304-61104	Title: CSG Locating & Recovery
Author: L. Morgan	ECR: XXXX-XXXX
Revision: 1-01	Effective Date: 2012-06-08

Scope
The recovery team will follow the protocols listed below to promote consistency of operation.

Purpose
Tasks planned for recovery will focus on the safety of personnel foremost and locating and securing equipment carefully. The work instruction outlines steps to locate and recover a glider onto a vessel.

Reference Documents
CSG Field Operations Procedure

Required Records
Recovery Field Log

Required PPE
Personal floatation device (work vest), hard hat, clear communication with vessel captain and crew, and full understanding of the use and plan for glider recovery and lifting onto vessel.

Required Tools & Equipment
See *CSG Field Equipment Work Instruction*.

Instructions	
Step	Instruction
1	Communicate with the current glider pilot regarding the recovery cruise plan well before departure time. General timing and glider surfacing frequency should be clearly communicated and agreed upon (generally every hour to every fifteen minutes as conditions warrant).
2	Obtain approximate glider location directly from pilot (text, cell, email) or from glider call ins directly via email or computer.
3	Communicate glider location to captain of vessel.
4	When recovery vessel starts approach to glider location (roughly an hour from glider), it should be piloted to remain on the surface. Ensure this is done on the Dock Server side via communication with the pilot.
5	Ensure FreeWave antenna is mounted, 'Bell' alarm is in line and activated, and FreeWave transceiver is connected to the computer. Computer should be running glider terminal or a terminal emulator.
6a	Listen for FreeWave alarm (nominal range is 2 miles). Once FreeWave communication is stable and if glider is already on surface and out of the mission and sequence, type command & proceed to #7, if not go to 6b <ul style="list-style-type: none"> • <code>callback 30</code>
6b	In the event that the dock server pilot has not done so yet, type <ul style="list-style-type: none"> • <code>ctrl^c, ctrl^c</code> (twice to exit mission and sequence) • <code>put u_max_time_in_gliderdos 7200</code> (set for a long time) • <code>callback 30</code>
7	To get updated glider position via FreeWave connection, either type <ul style="list-style-type: none"> • <code>report ++ m_gps_lon</code> and <code>report ++ m_gps_lat</code> OR • <code>get m_gps_lon</code> and <code>get m_gps_lat</code>
8	Update glider position for vessel approach as needed. Be on the lookout for yellow fin of glider. Once the glider is in sight proceed with recovering the glider safely.

9	Formulate a recovery plan either using the recovery nose release or the lifting cleat. Communicate with the vessel captain and crew as to the safest approach and method of recovering the glider. Avoid excessive wash on the glider, as it can cause the glider to become unstable.
10	SAFETY CONSIDERATIONS: <ul style="list-style-type: none"> • At no time should the operations proceed if not safe to do so. • Work with the captain & crew of the vessel for identifying & using vessel equipment safely. • Ensure those involved know roles, how the lifting device is utilized, & any safety concerns.
11	To release the nose for recovery, type <ul style="list-style-type: none"> • put c_recovery_on 1
12	During lifting be careful of wings and glider sections to keep from impact. Once on deck, unscrew wings. Take standard photos if safe to do so or when dockside, <ul style="list-style-type: none"> • Follow <i>CSG Standard Images Work Instructions</i>. • Secure glider for transit.
13	Ready glider for power down, type the following commands <ul style="list-style-type: none"> • report clearall (turns lat/lon reporting off, if turned on) • put c_air_pump 0 (deflates air bladder) • put c_de_oil_vol -500, (or larger for deep glider only, should be to store retracted at -260) • report ++ m_de_oil_vol (monitor to ensure reached -260 before powering down) • report clearall • exit (begins power down process)
14	Remove power when prompted (replace GREEN plug with RED plug).
15	Notify pilot on shore that glider is recovered.