HYSWEEP Water Column Logger - Beta Guide

Introduction

The HYSWEEP Water Column Logger reads network data in real time and logs to disk files. A traditional sonar display monitors the data and allows points of interested to be targeted.

Currently (5/2014) supports Reson Seabat 7K and R2Sonic systems.

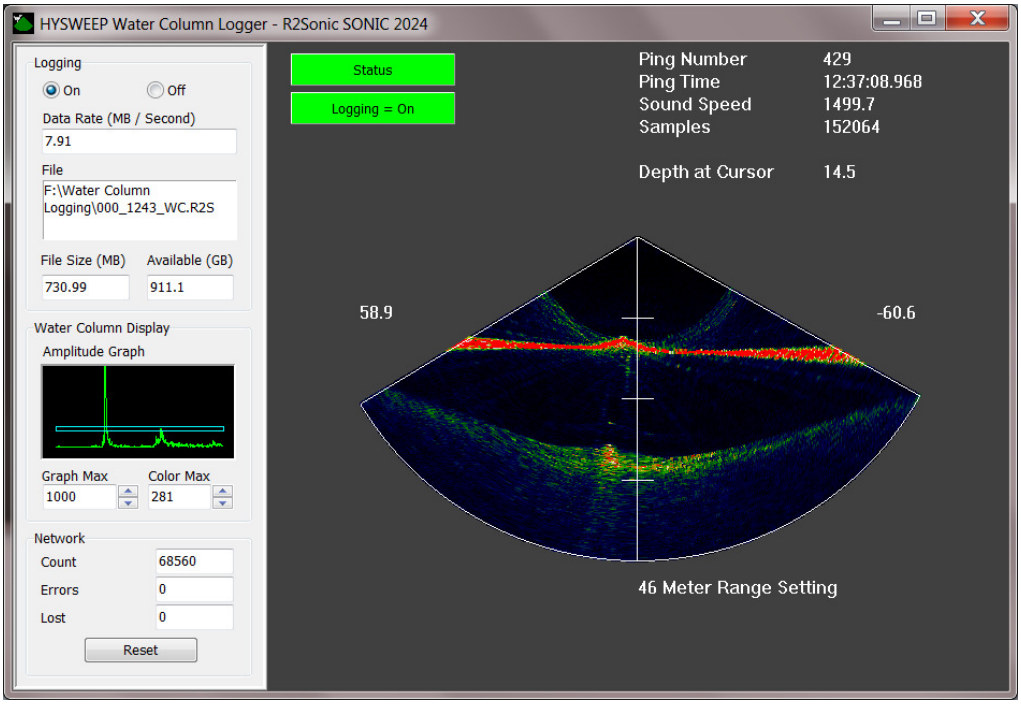

Figure 1: Water Column Logger display, showing R2Sonic WC data.

Computer Requirements

This is a large data application requiring a serious computer.

- Multi-core processor. (Intel core i7 or similar).
- 1 Gbps (Giga bits per second) Ethernet network adapter.
- Large disk capacity. One terabyte or larger is recommended. You can get by with less if willing to frequently offload files.

Program Files

The water column logger is called wcHysweep.exe. It goes in the "\Hypack 2014\" folder. HYSWEEP survey and hardware 14.0.7 or later are required.

Hardware Configuration

Requires minimal configuration. Just check the box for Water Column Logging.

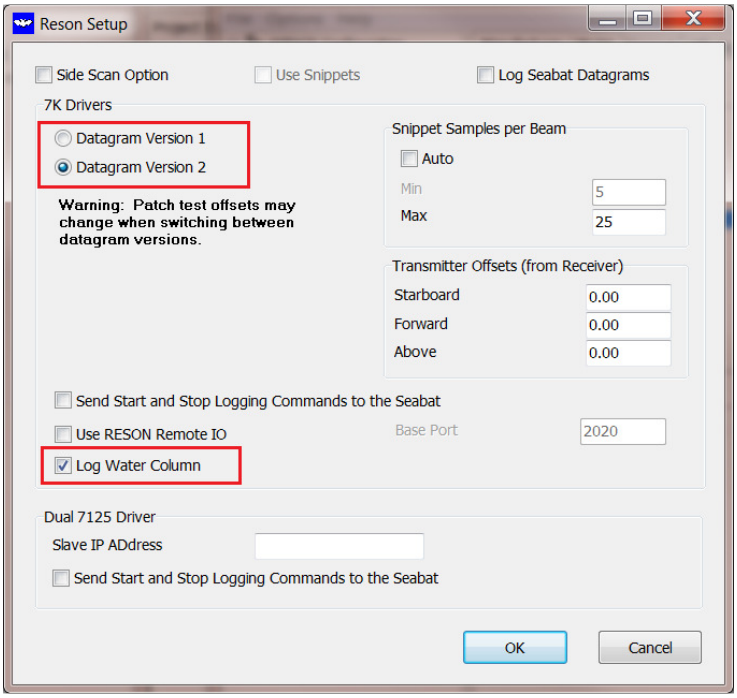

Figure 2: Configuration for Seabat 7K sonar. Note that version 2 datagrams are required.

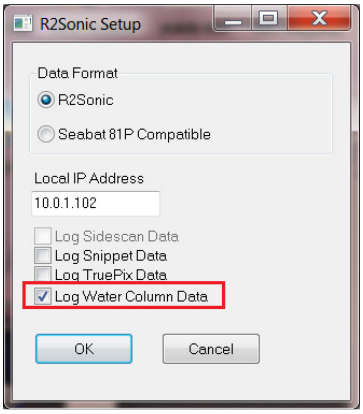

Figure 3: Configuration for R2Sonic sonar. The R2Sonic needs to output Magnitude data, not Magnitude + Phase.

Survey

The Water Column Logger starts automatically with HYSWEEP survey.

Display Setup

Use the left side panel (figure 4) to configure the sonar display.

- Amplitude Graph: Nadir beam amplitude time series.
- Graph Max: Use up/down to scale the amplitude graph.
- Color Max: Set color saturation value. Can also be set by clicking in the amplitude graph.
- Dot Size: Of each amplitude pixel.
- Soundings: Check this to overlay digitized soundings.

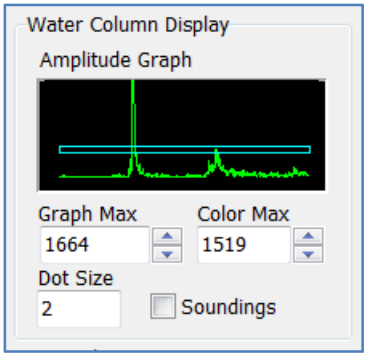

Figure 4: Sonar display configuration

Logging Setup

Click “Logging Setup” (figure 5).

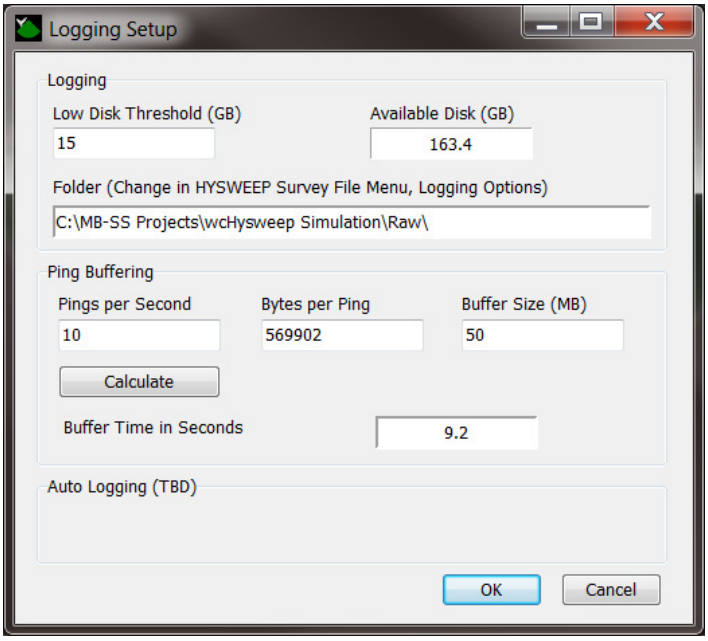

Figure 5: Logging setup form.

- Low Disk Threshold (GB): Sets an alarm limit.
- Available Disk (GB): Currently available disk space.
- Folder: Folder for water column logging is selected in HYSWEEP survey.

Ping Buffering.

A nice feature of the HYSWEEP Water Column Logger is the ability to buffer substantial amounts of data. So when an object of interest shows on the sonar display, there is no need to start logging in a panic to capture it.

- Pings per Second: Enter sonar ping rate.
- Bytes per Ping: Enter the bytes of data per ping. If you don’t know, the program fills it automatically while running.
- Buffer Size: Enter buffer size in megabytes. Default is 100 MB.
- Calculate: Click to calculate buffering time in seconds from ping rate, bytes per ping and buffer size.

Auto Logging

Automatically starts logging when water column data exceeds thresholds. To Be Determined.

Status Information

A prominent indicator shows logging system status. Green = OK. Pay attention when the indicator turns yellow or red. These are the primary alarm conditions.

- Network Initialization Error (100xx): Failure to connect to the sonar system. Network troubleshooting is required. Like, can you network ping the sonar from the HYPACK computer? Are IP addresses and subnet masks set properly? That sort of thing.
- Network Receive Error (100xx): Error in receiving water column data. This shouldn't occur if the connection is OK - troubleshooting required.
- Network Messages Lost = nnn: Count of lost water column datagrams. Some lost datagrams are acceptable but if this count becomes large it's likely your data files will be somewhat less than useful.
- Sonar Device is Disabled: Use the hardware program to enable the water column sonar.
- Sonar Timeout: No data from sonar. Is it pinging?
- Navigation Timeout: No data from navigation system. HYPACK and HYSWEEP survey need to be running to route navigation data through shared memory to the WC Logger.
- File Open Error: Bad news. Don't trust the disk you are using.
- File Write Error: Ditto.
- Cannot Access Logging Folder: This can happen when logging to a portable drive and the drive isn't plugged in.
- Low Disk Limit: Available disk is less than the threshold set up Logging Setup. You need to off load some files.

Logging Data

Manual Mode

Data is logged when two conditions are met.

1. HYPACK and HYSWEEP survey are logging and,
2. Logging is "On" in the Water Column Logger.

Logging On / Off is there to avoid filling the disk with useless data. That is, when there is nothing of interest in the water column, which is likely most of the time.

Automatic Mode

To be determined.

File Format

Network datagrams are written to *.7K (Seabat) or *.R2S (R2Sonic). File names are suffixed with _WC to distinguish them from files logged for snippets, which use the same file types.

Post processing will merge the water column files with HYSWEEP HSX files.

Targeting

Double click the sonar display to mark a HYPACK target.