

Guide to NOAA Ship Hi'ialakai Multibeam Data Acquisition

06/03/05

Survey Department Pre-sail Checklist

Supplies-Check that all office supplies are in plentiful number and properly stowed. This includes but is not limited to Printer materials, (paper, ink), blank cds, dvds, plotter supplies, spare keyboards, mice, monitors, etc. (Most of this is kept in ample supply at all times.)

Survey Files-All files pertinent to the planned survey area. Coverage grids, up to date raster charts, tide zone files, predicted tide files, new survey log. If possible new survey plans should be created prior to departure, and certainly before arrival at the survey area.

Software and licensing information-Ensure that backups exist for all necessary programs. This should include all survey programs such as ISS, SIS, Saber, Caris, Nobeltec, Velocwin, and all Seabird Files. There should also exist backups for all base programs such as Windows, Linux, Snagit, device drivers, etc. Check that all updates are installed and that all licensing is current and will remain current for the duration of the voyage. And ensure that all dongles are onboard and either installed or ready for installation.

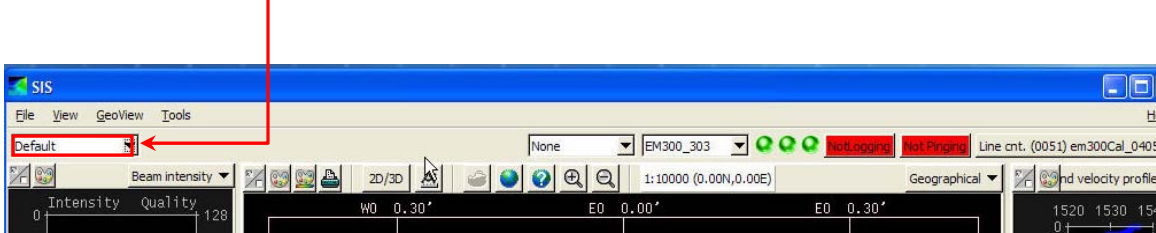
Cable Connections-Working with the ships ET check that all necessary cable connections are in place for system function and data management. These are too numerous to list and any problems should be apparent when testing the systems in the next section. The primary reason for including this step is in the event of new systems being installed for a particular cruise. I.E. a new processing station, or a possible GPS feed needed for tracking non-ships equipment deployment. It may also be needed if maintenance was performed on any given system during the inport.

Turn on all systems and ensure proper working order-This includes the multibeam systems themselves, CTDs (including the Oceanographic Winch), DGPS, ADCP, TSG, POS/MV, Trackpoint and data processing computers.

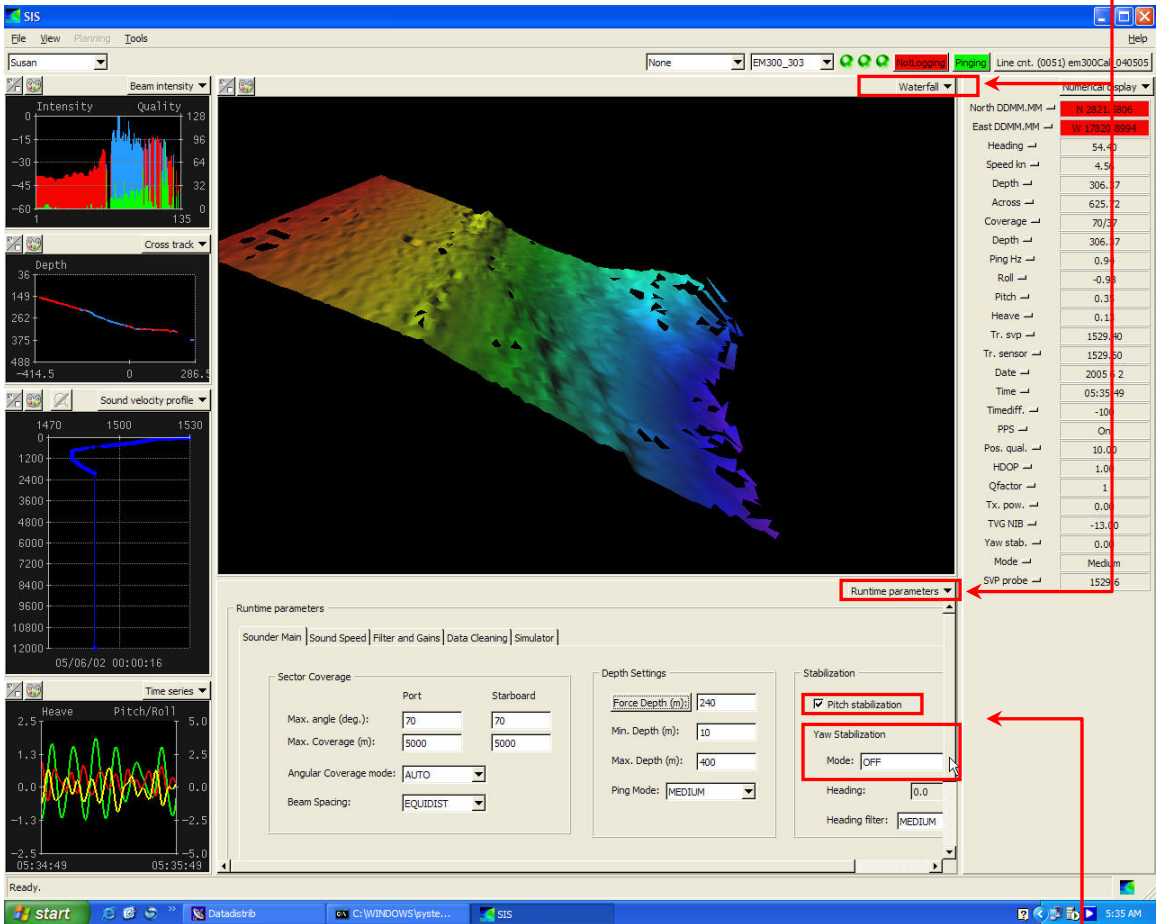
Note-In the case of the TSG. Check with the Chief Engineer that all is well with the pump. The TSG system should not be activated in port. This is to prevent intake of unwanted foreign debris.

- If using the EM3002, make sure that that it is selected by clicking it in the drop down menu in the middle of the top screen bar.

Change default screen display by selecting a choice from the drop down menu at the far upper left corner of the screen.

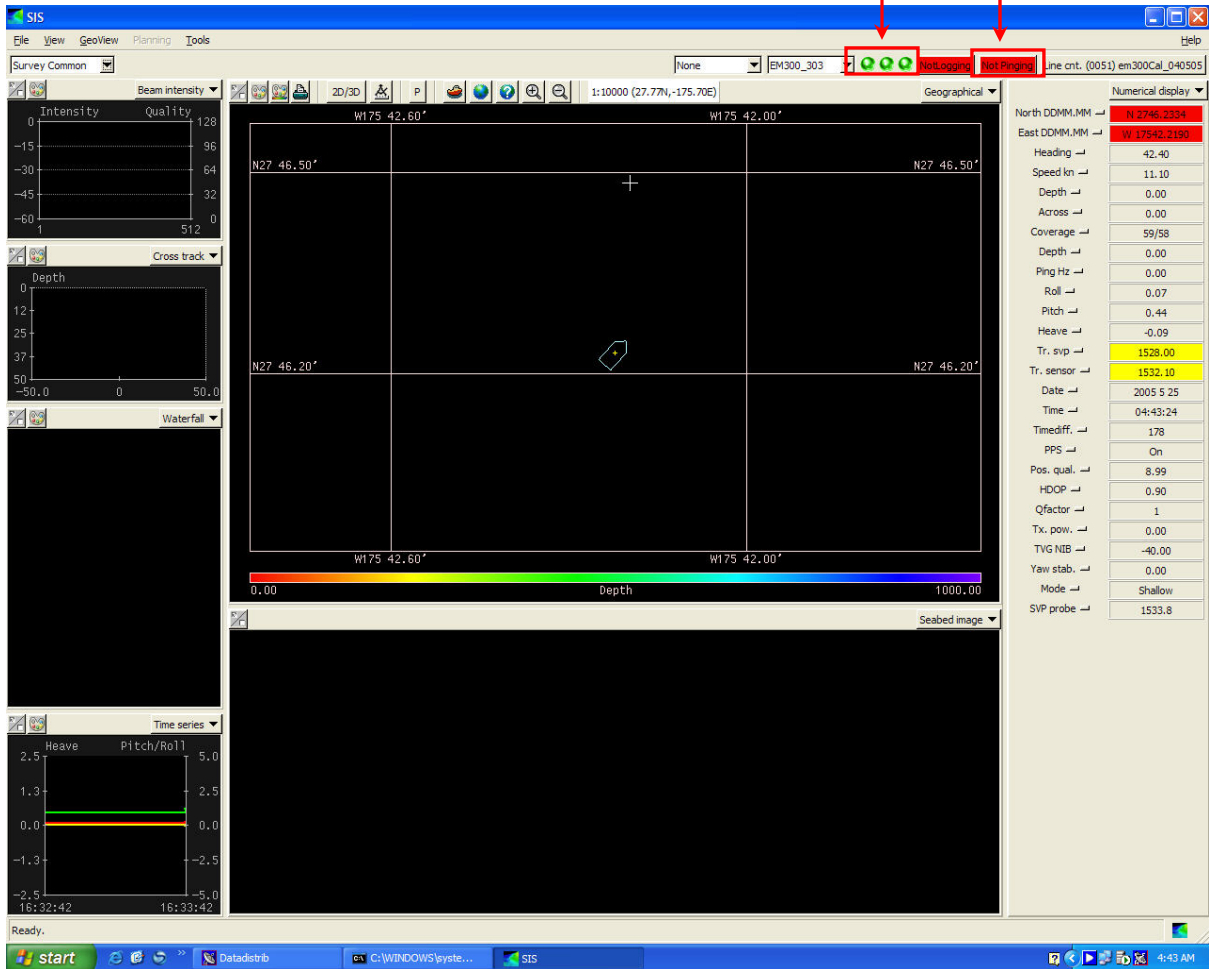


Modify standard display so top window is in the Waterfall mode, lower display in the Run Time Parameters mode.



Make sure **Pitch Stabilization** is on, and **Yaw Stabilization** is off.

When the system is ready, the **pinging button** will be highlighted in red. The three lights at the top of the window should be green.



2. Start POS/MV –

(Position and Orientation System for Marine Vessels Position Marine Vessel) The ISS200 system uses the input from the POS/MV to correct for vessel motion.

Double click on POS icon



If POS is operating correctly, all buttons should be green.

The screenshot shows the 'POS MV Controller' software window. The interface is divided into several sections:

- Status:** POS Mode: **Nav: Full**; IMU Status: **Ok**; GPS Status: **C/A**; GAMS: **Ready Offline**.
- Accuracy:** A vertical column of five green circular indicators next to the labels: Attitude, Heading, Position, Velocity, and Heave. A red box highlights these indicators, with a red arrow pointing to them from the text above.
- Attitude:** Roll (deg): **0.267** Accuracy (deg): **0.024**; Pitch (deg): **-0.136** Accuracy (deg): **0.024**; Heading (deg): **39.303** Accuracy (deg): **0.486**.
- Position:** Latitude: **27°46'37.54" N** Accuracy (m): **3.956**; Longitude: **175°41'50.57" W** Accuracy (m): **3.956**; Altitude (m): **-2.449** Accuracy (m): **6.029**.
- Velocity:** North (m/s): **4.375** Accuracy (m/s): **0.062**; East (m/s): **3.760** Accuracy (m/s): **0.057**; Down (m/s): **0.050** Accuracy (m/s): **0.082**.
- Dynamics:** Angular Rate (deg/s) and Accel. (m/s²) for Longitudinal, Transverse, and Vertical axes.
- Events:** A table with columns for Event, Time, and Count. It shows Event 1, Event 2, and PPS.

At the bottom of the window, there is a status bar with the following information: 5/25/2005, 4:46:10 UTC, 219:42:39 POS, PC Card: Idle, and Monitor.

3. Start the ISS200 system.

Turn on computers (bottom two monitors)

Log on as Administrator to run survey system

User: Administrator
Password: *****

When prompted, enter the following passwords to log onto servers:

\\hii1\datasets:
Password: *****

\\ahi10\pibhmc:
Password: *****

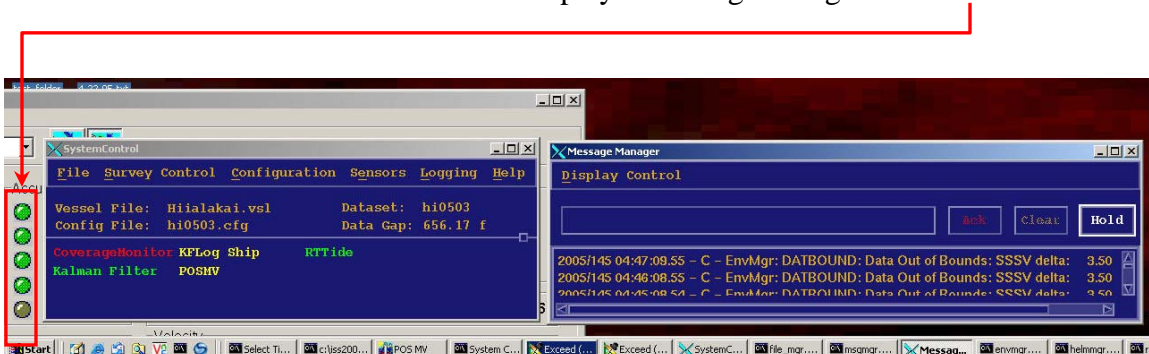
\\ahi10\dar:
Password: *****

Start up ISS2000 system

Start → **Programs** → **ISS 2000** → **Survey Control**

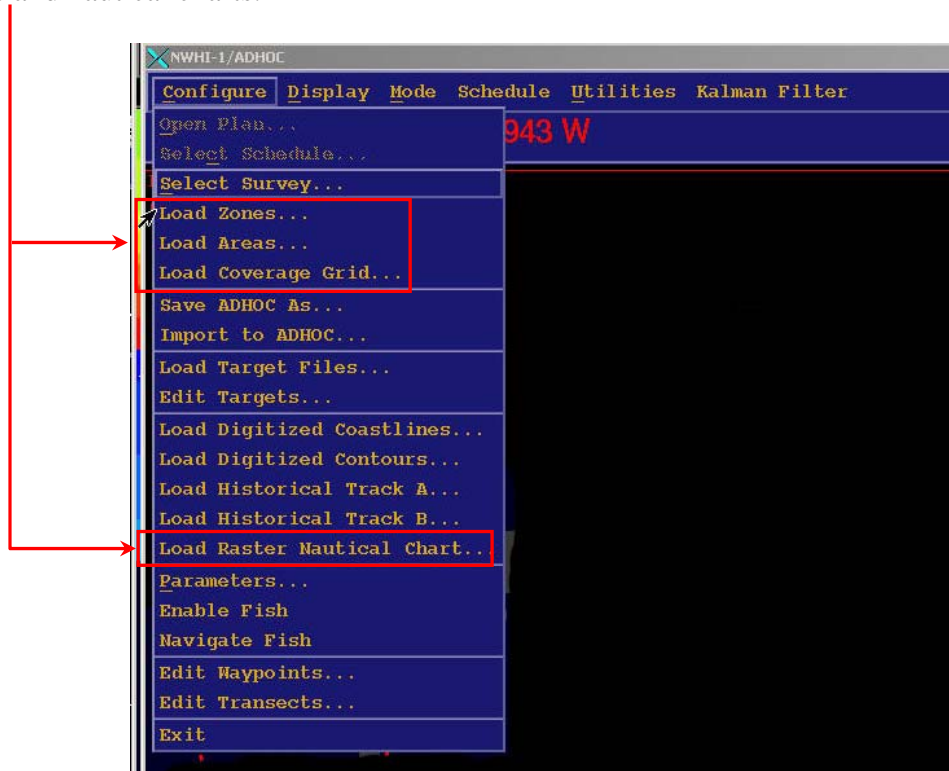
Arrange windows as desired. Move NavMgr window so it fits entirely on right hand screen.

HINT: Position POS window under ISS displays so that green lights are visible.



Load data into NavMgr.

Move cursor to NavMgr window, and click on Configuration. Load zones, areas, coverage grids and nautical charts.

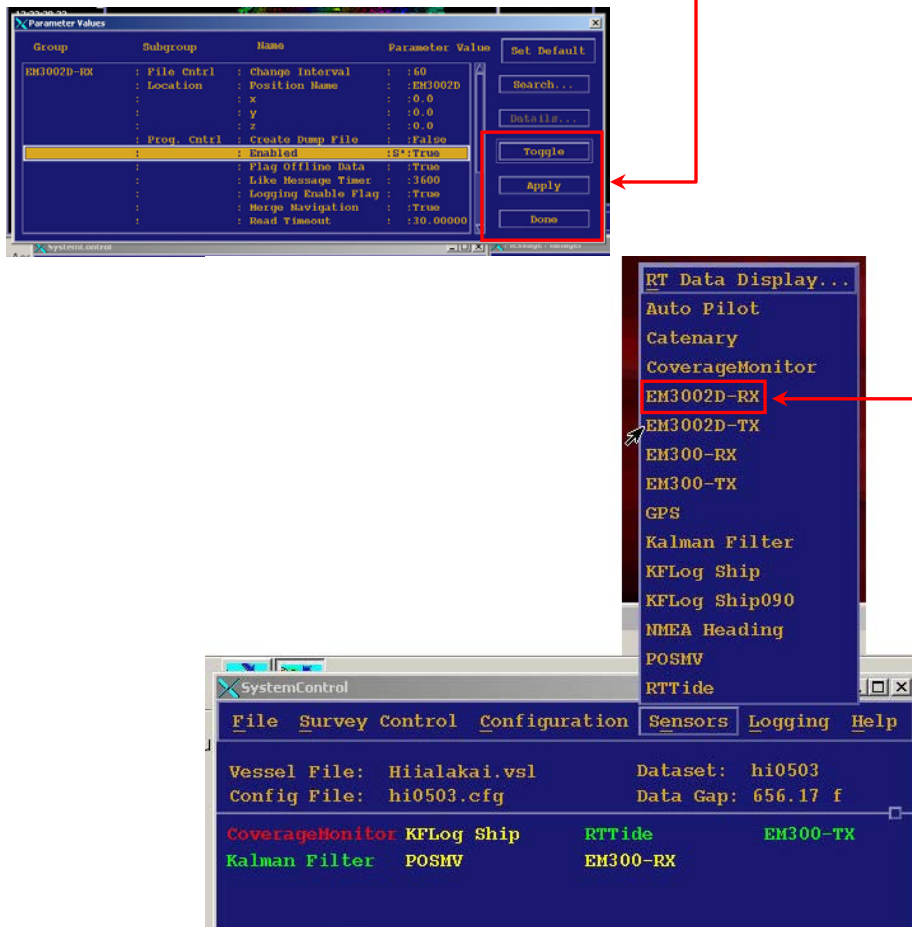


Enable sonar sensors

Move back to left hand screen and turn on sensors – both receiving (RX) and transmitting (TX).

Go to **System Control** window, click **Sensors**, click appropriate sensor(s).

Highlight **Enable**, click the **Toggle** button so Parameter Value goes to True. Click **Apply** and then **Done**.



Repeat for each sensor to be used. If using both sonar, make sure both transmitting and receiving are enabled for each sonar.

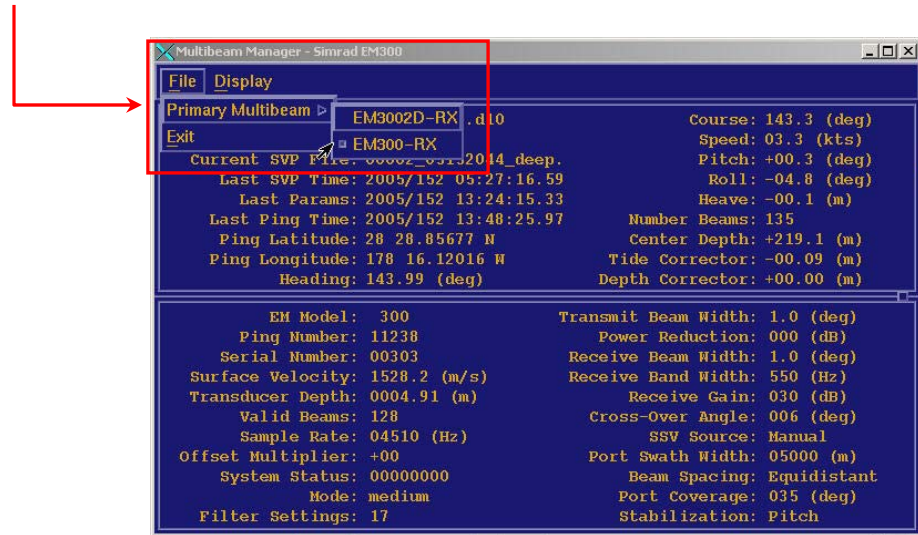
EM3002D-RX – Enable – Toggle – Apply - Done

EM3002D-TX – Enable – Toggle – Apply - Done

EM300D-RX – Enable – Toggle – Apply - Done

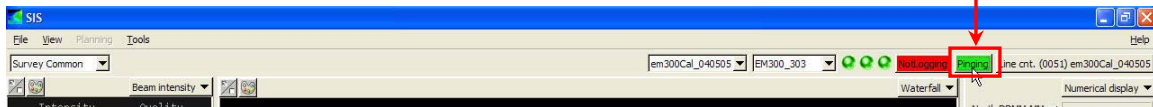
EM300D-TX – Enable – Toggle – Apply - Done

Set primary sonar from Multibeam Manager window (this is what feeds into coverage monitor). Select **File, Primary Multibeam**, and either EM3002D-RX or EM300-RX



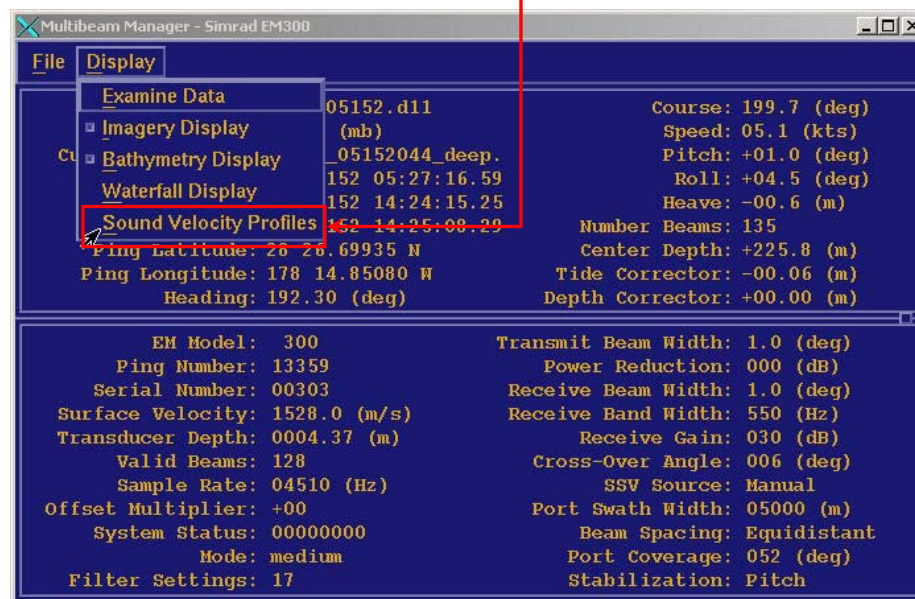
Start pinging.

On SIS display screen, click pinging button.

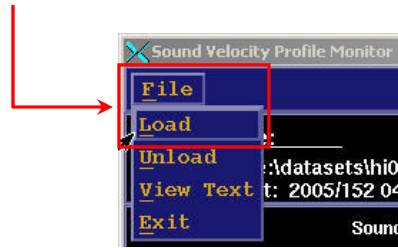


Load SVP.

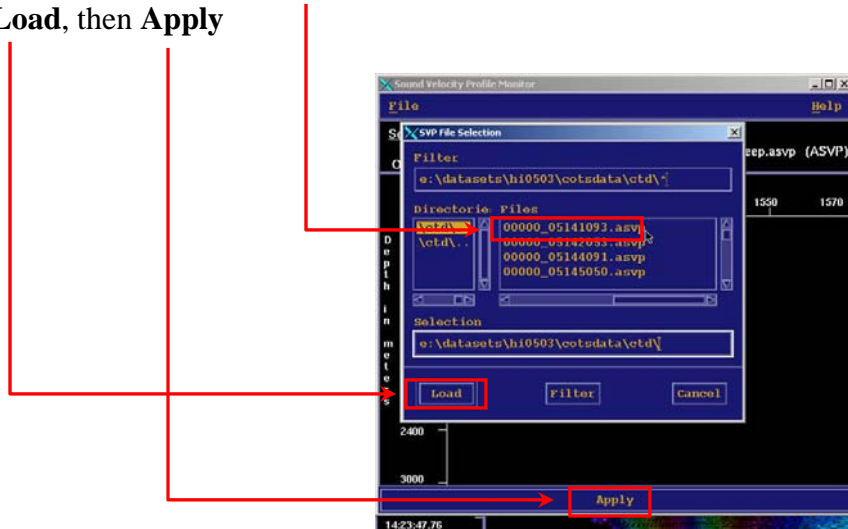
From Multibeam Manager, select **Display**, then **Sound Velocity Profiles**



From the Sound Velocity Profile Monitor, select **File**, then **Load**



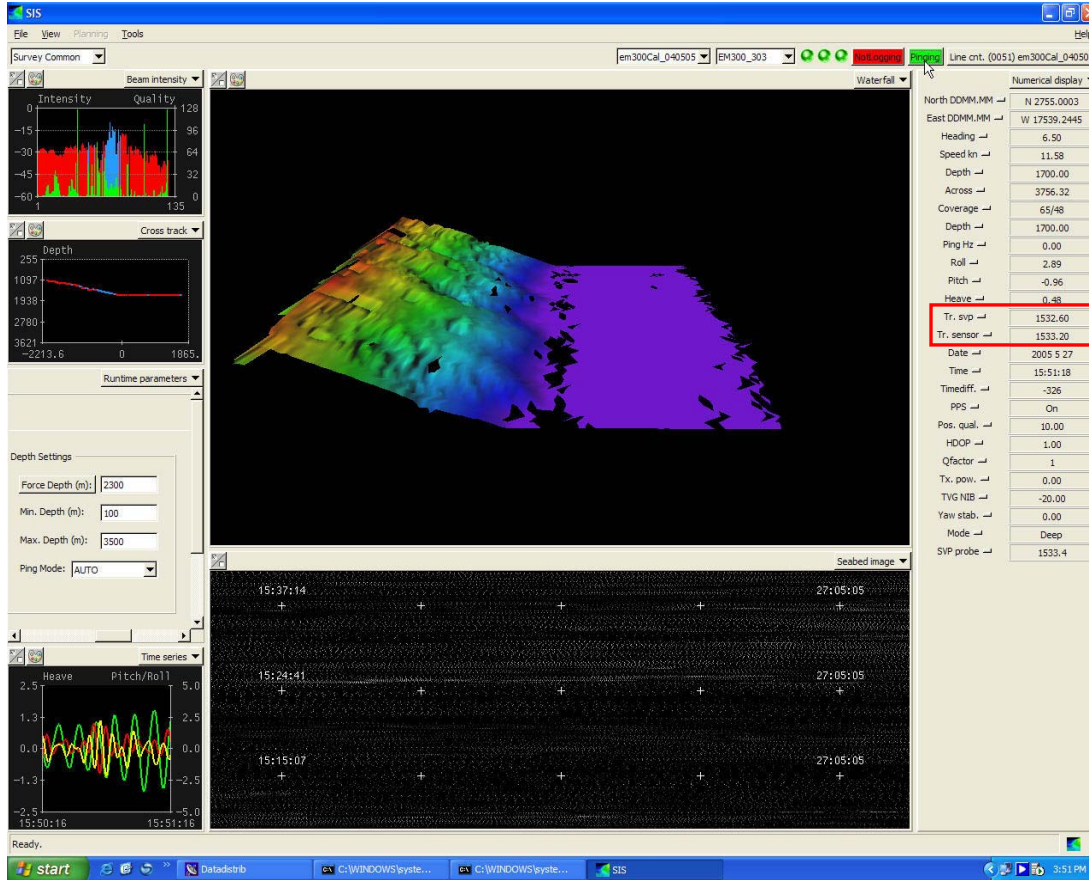
Select latest SVP profile from list, click **Load**, then **Apply**



The SVP screen should change (this may take several seconds). If the SVP display does not change, re-apply the SVP. Watch the Message Manager window to make sure SVP was updated. Look for the following confirmation message:

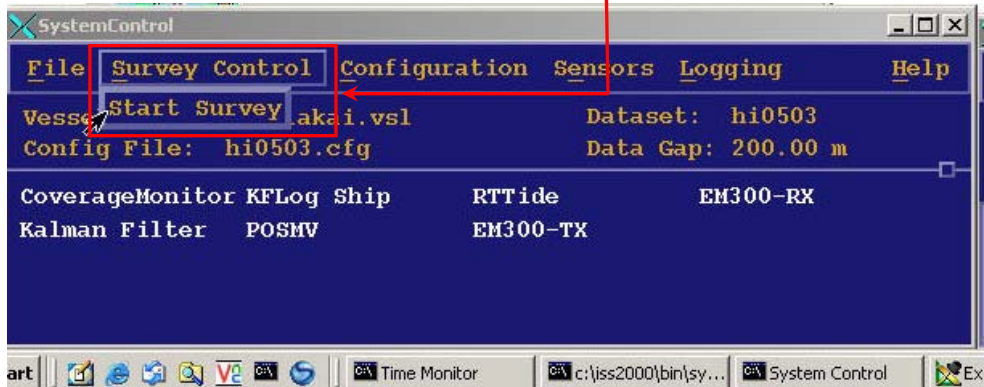
```
2005/145 04:56:36.08 - I - EM_RCV_1 (EM300) MBSVP: New SVP in use by Multibeam
2005/145 04:56:36.08 - I - EM_RCV_1 (EM300); SNSRINFO: Echoed profile from sonar matches the current SVP file; e:\datasets\hi0503\cotsdata\ctd\00001_0514412em_svp.dg.c:271:A
2005/145 04:56:32.98 - I - EM_OUT_1 (em300): SVPSENT: Downloaded new profile:e:\datasets\hi0503\cotsdata\ctd\00001_05144122.asvp
```

Check to see that the Tr. svp and the Tr. sensor displays on the SIS screen are white. If they remain red, there is a mismatch between the SVP and the ships thermosalinograph. This is a problem that must be resolved before surveying can begin.



Start Survey

From the System Control window, select **Survey Control**, then **Start Survey**



Start logging.

From the System Control window, select **Logging**, then **Enable Logging**

