MI5 Multishot Orientation Tool Quick Start Guide

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MI5 Tool and Palm Pilot

Introduction

This guide is meant to help technicians set up the MI5 multishot orientation tools, deploy the tools, and collect and process the data after a survey. Currently there are 3 multishot tools each operated by a Aceeca Meazura Palm pilot.

Procedure

This section includes procedures for:

1. Starting a orientation survey
2. Ending the Survey and collecting the data from the tool
3. Downloading the data to a PC from the Palm and applying calibration data

Starting a Survey

1. Place 6 AA batteries into the multishot tool by removing the screw at the t-slot end. Twist the t-slot end counter clock-wise and remove the end. Batteries should be placed with positive end in first.
2. Replace the t-slot end. Note there is a small pin that locks into the j-slot to secure this end piece. Once these are aligned press the end piece in and turn it clock wise. Replace the screw.
    a. Note: A light at the other end of the tool should now be flashing. This light indicates when the tool is active and will stop flashing after the tool has been inactive for a minute. The tool may also beep.
    b. Turn on the Palm Pilot and open Inclin
    c. Select Survey
    d. Give the survey a unique name. Names are limited to 8 characters. It is advised that the name be the site name and first core that will be oriented with the tool. For example: 1440A1H
        i. The file name cannot include special characters: !@#$^&()_{}'~`
        ii. It is not advisable to use the default time and date stamp as the survey name as it will appear as an 8 digit number after the survey and the name will have little meaning.
        iii. Select OK
        iv. In the SPECIFY SURVEY START TIME window select BY DELAY and input a START DELAY (minutes) value of 0 and select OK
            1. This will start the survey immediately and the tool will be collecting data.
            2. The BY TIME option is not typically used. This option allows the user to set a time when the survey will begin. Setting the time leaves room for more error.
            3. In the SHOT INTERVAL (sec) window, set the interval to 10 seconds and select OK. The tool will take a measurement every 10 seconds.
            4. In the HEADER INFORMATION window, leave the Declination (east of north) set to 0.
                a. OPTIONAL: Select the Details button, which opens another window.

b. In the DETAILED INFORMATION window you can enter the Site name, the Date of the survey (may automatically fill in, but check that it is accurate), and the Operators name. Select OK. Once back in the HEADER INFORMATION window, select OK.
c. INTITIATE SURVEY window will appear. Connect the probe to the palm pilot via the interface cable and the Palm Hotsync cable.
   i. The probe connector is under the brass cap by the indicator light.
   ii. Make sure to align the pins properly when connecting the interface cable to the multishot tool. Twist the outer shell of the connector until it clicks into position.
   iii. Connect the serial port ends of the hotsync cable and interface cable and plug the hotsync cable into the Palm.
   iv. Once connections are made, Select OK
   v. Now the Palm will display a status window as it begins to communicate with the tool. The palm will check the memory capacity of the tool and the battery life. An INFORMATION window will show the results. Press OK to continue.

   i. If the battery life is nearing 7.5 volts, the batteries should be switched out.

   ii. If there is data still stored on the probe, the user should stop the set up process, clear the probe after ensuring the data have been downloaded, and then restart the survey set up process.

1. If the memory is nearing capacity once you press OK the Palm will display a CONFIRM window. And it will ask if you want to continue. At this point the user should select NO and clear the probe before starting a survey. ENSURE THE DATA HAVE BEEN DOWNLOADED TO A COMPUTER BEFORE CLEARING THE PROBE.
2. If the user does not clear the probe, a COMMUNICATIONS ERROR may be displayed. Error should clear after probe is cleared.
3. Replace the brass end cap. You may now notice that the green light will flash once per second and a red light should flash once every 10 seconds. The red light indicates when the tool is taking an orientation measurement.
4. The MONITOR SURVEY Window should now be displayed on the palm and the probe is collecting data. You can now place the probe into the pressure housing and pass the tool to the core techs.
   a. DO NOT SELECT DONE ON THIS SCREEN. The Done button ends the survey.
   b. The Palm can be shut off while the survey is running. The Palm will automatically go to sleep after it sits inactive. Place the Palm in a location where it will not be handled until the survey is complete.

Ending a Survey and Collecting Data

1. Turn the Palm on.
2. Select DONE in the MONITOR SURVEY window. Palm will now display the main Inclin Window.
3. Select COLLECT DATA on the Inclin main window
4. In the COLLECT DATA window, select RECOVER DATA
   a. You will receive a window asking you to confirm this action, select YES
   b. Next a window will ask you to connect the probe to the Palm. Once connected select YES
   c. The Palm will contact the multishot tool and begin recovering data. While this is occurring a Recover Data window will be displayed and recover data record count will be displayed. When the Palm is done recovering data the Palm will return to the main Inclin window.

   i. This process may take awhile for long surveys. Make sure the Palm battery is charged or that the Palm is plugged in. When the recover is complete, the Palm will go to sleep.

Note that if you recover data to a Palm that did not start the survey, no data will appear in Manage data, but the survey is on the Palm. Every time you select recover data the Palm stores this data until you Hotsync. (ie 5 recover data commands will result in your .txt file containing the survey 5 times.)

Managing and Downloading Data to a PC for processing

1. Select Manage Data (Surveys only appear here if they were started and recovered onto the same Palm).
2. The Select Survey window will be displayed. This screen is used to view the data stored in the Palm, process and view survey results, select holes for re-download or re-HotSync from the tool, and to delete data from the Palm.
   a. You will see a check box for selecting holes, an index value, the name of the hole, and the tool serial number. A **bold face** hole names means the data has not been HotSync'd with a computer. An asterisk after a hole name means the data have not been downloaded from the tool yet. (Note: Using recover data function will not remove the asterisk, so the asterisk should always appear.)
   b. Once you see your survey in this list, select cancel. And press the Home button on the Palm.
   c. Connect the Palm to the PC via the USB hotsync cable. The computer may ask you to identify which Palm you are using (Vanilla Ice, Ice T, or Ice Cube)
   d. Select HotSync in the Palm main menu. The data can be downloaded to the JR6 computer, the desklogic computer, or the downhole lab computer, which all have Inclin installed.
   e. In the HotSync window LOCAL should be selected and the connection type should be Cradle/cable
      i. If Cradle/Cable is not indicated select the HotSync tab in the upper left hand corner and select connection setup. Select Cradle/Cable from the menu.
      ii. Press HotSync button on Palm. The Palm should chime to indicate the hotsync is in progress and a progress window should appear on the PC.
         1. If the Palm does not chime and the progress window doesn't appear on the PC, cancel the HotSync. Retry the HotSync.

2. When the Hotsync is complete, navigate to the Inclin Data folder and check to ensure a .raw file and a .txt file are in the recover folder.
   a. .raw is the calibration file for the tool
   b. .txt is the recovered unprocessed data

      i. The .txt file appears to only download to an individual computer once. If there is an issue, you may need to recover data again from the tool. **This is why you should not delete data from the probe until all .txt files are backed up.**

1. Change the .txt file name from the generic name (Data 001.txt) to the hole/survey name (U1449A1H.txt). The .raw and .txt files should have the same name.
2. Copy these files to a back up folder. These raw files should not be edited.
3. Open and run the CreateInclinfile4.exe program
   a. The .txt file data is not useful unless the calibration is applied. CreateInclinfile4.exe will format a file that can be opened and processed in Inclin. CreateInclinfile4.exe can only be run on computers with Labview Runtime.
   b. Save the file with a the hole/survey name and indicate that it is an edited file and add a .raw extension (ex. U14491Hedit.raw)
   c. Open the new file created by CreateInclinFile4.exe in Inclin.
   d. Ensure the data table includes all of the necessary variables. (Hole ID, Dip, Azimuth, Temperature, Magnetic Tool face, Magnetic field strength, magnetic dip, accelerometer output, and gravity tool face, and time
   e. Save
   f. The .prn file will be the data with the calibration applied and the file will include headers.
   g. Technician must now identify the parts of this file that correspond to times when individual cores were oriented.

Appendix

Clearing Data from the Multishot Tool

The MI5 tool has a large capacity memory, but it is best not to run the tool for a new survey if the memory is more than 50% full. Our standard procedure is to clear the probe after the data has been downloaded and backed up. DO NOT clear the probe until the data is backed up as you may need to recover the data again. There is a threshold value for the percentage of full memory on the tool, which will prevent a new survey from being started. It will present as a communications error after you tell the Palm you wish to continue to start a new survey with the memory almost filled. To avoid this error the user must clear the data from the probe. Ensure the data is already downloaded to a computer and that the files are readable before clearing the probe.

1. Go to the Inclin Main Window (screen with Survey, Collect Data, and Manage Data.)
2. Tap on the Inclin tab in the upper left corner
3. Tap on the Options tab that is displayed
4. Select Clear Probe
5. The Palm will display a window asking if you wish to ABORT the action. Select NO if you wish to clear the probe.
6. The next window will ask if you wish to continue. **After this point the data are not recoverable**. Select YES.
7. An information window will appear and state "Probe Memory is Cleared", select OK

Clearing the Palm Memory

The recover data function we use to generate our files downloads a large number of data points. To remove surveys from the Palm (after they has been downloaded to the PC and processed) follow these steps.

1. Select Manage Data
2. Place a check mark in the box next to the survey name. Tap on the Select Survey tab in the upper left hand corner. Press Delete Selected.
   a. A window will appear warning the user that holes names cannot be repeated for new holes until the probe memory has been cleared.
   b. Try to clear the probe prior to clearing the Palm to avoid any communication errors.
   c. Select OK
   d. A confirm window will appear. Select YES to delete the hole from the Palm.
   e. If the data has not been saved to a computer or downloaded to the Palm yet, the Palm will ask you to confirm the action once again. Select Yes if you wish to continue with the delete process.

Software and Applications

CreateInclinFile4.exe – Application for combining raw data with tool calibration information. The resulting .raw file can be opened in Inclin where the data will be calibrated.

Inclin – Program from Icefield tools that applies the calibration information to the raw data and outputs a variety of statistics for each measurement.

File Formats

.txt file – This file contains the recovered data from the orientation tool

.raw file- This file contains the calibration information for each tool. The .raw files are combined with the .txt files using CreateInclinFile4.exe and are then saved as new .raw files. The new file is readable by Inclin.

.prn- Output file from Inclin that includes headers with the data variables for the entire survey

.out- Output file from Inclin that contains the data variables for the entire survey

.edt- Output file from Inclin with the calibration data and raw data from the MI5 tool

Credits

Archived Versions