CueTip
Assign Strip Numbers From Log File
Applies to GeoCue 2014 and above.

GeoCue Group Support
April 15, 2015
Revision 1.0

Purpose:

This technical note explains how to assign strip numbers to source (flight lines) prior to populating LAS working segments or generating TerraScan Trajectories. Most LIDAR system manufacturer software does not automatically assign file source ID to the strip based LAS files. Also, original strip numbers may not correspond with flight plan strip numbers. For both of these reasons, it beneficial to assign strip numbers using another method outside of importing source and assigning based on file name or sequential ordering.

Assign Strip Number Utility Checklist Step

This command will read flight logs as produced by either the Optech or Leica LIDAR collection systems, and based on start and stop times in the log, assign the strip (flight lines) numbers to the corresponding GeoCue LIDAR Source entities. A simple ASCII format can be used to assign custom strip numbers.

This checklist step is located on the Utilities tab of the LIDAR Source Checklist (**Figure 1**). The step is run before any data is populated from the LIDAR source strips to a LAS Working Segment Layer, or before TerraScan Trajectories are created from the LIDAR source strips, so that the flight line (point source ID) information is correctly assigned to the data for both entity types.
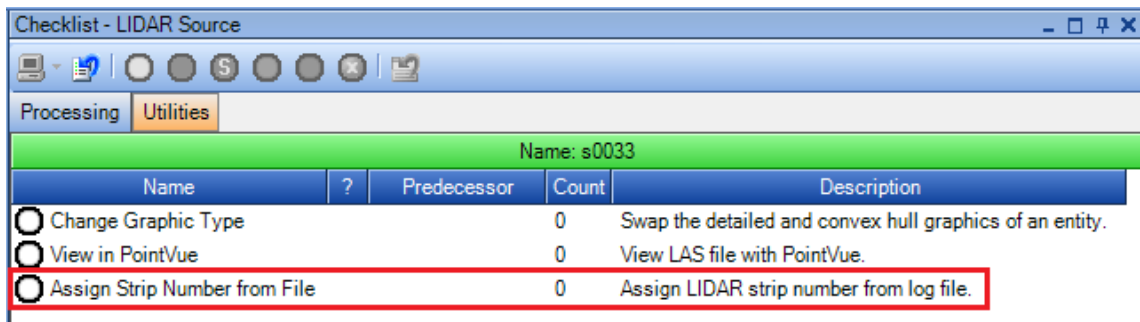

Figure 1 - LIDAR Source Utility Step

The log file should contain unique strip numbers for each LIDAR source. If the start/stop times in the log file would result in two or more entities being assigned the same strip number, then only the first GeoCue entity will be assigned. Other entities corresponding to the duplicate strip number will be set to the exception state, if that option is selected.
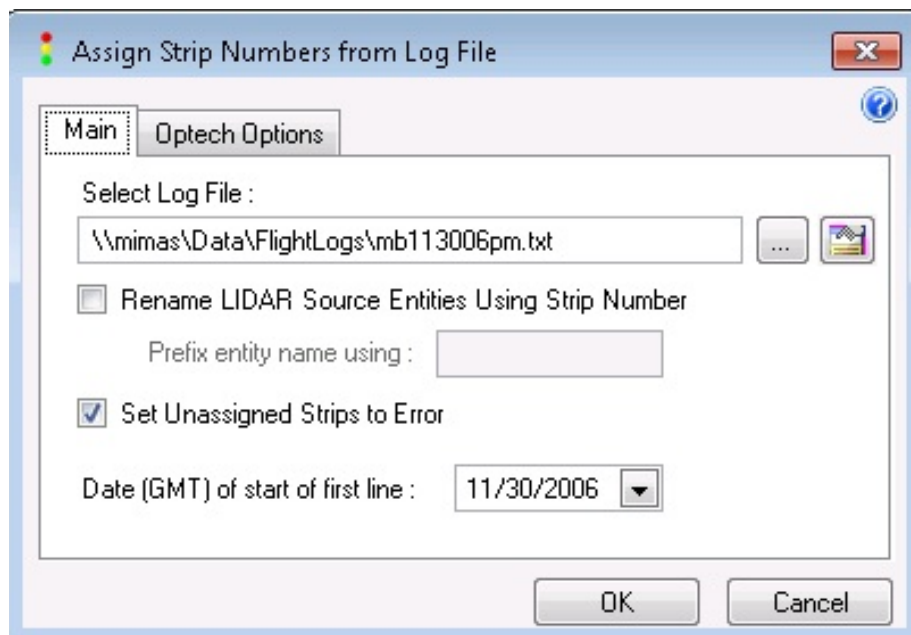

Figure 2-Main Options

Select Log File	Enter the path to a flight log identifying start/stop times and strip numbers for a LIDAR collection flight. You may use the view button at the right of the browse button (…) to view the file.
Rename LIDAR Source Entities Using Strip Number	If this item is checked, the GeoCue LIDAR Source entities will be renamed using the strip numbers from the log file. A prefix may optionally be specified. Selecting this option does not rename the files, only the GeoCue entities.
Set Unassigned Strips to Error	If this item is checked, any LIDAR Sources for which a strip number could not be determined will be set to the exception state. If left unchecked, the source entity is ignored.
Date (GMT) of start of first line	(Optech Files Only) The date, based on Greenwich Mean Time (GMT), must be specified. The dialog is initialized with the date contained in the file, but that date may or may not be set based on GMT time. Verify that the date corresponds with that of the first start time in the log file, which is referenced to GMT.

Table 1-Main Options Parameters

Optech Options Tab

The Optech Options tab allows you to specify an offset between the start/stop times indicated in the log file, and the actual timestamps in the LIDAR (LAS) files. This may be necessary, since the log file times are referenced to the clock of the computer generating the log, while the timestamps in the LIDAR files are referenced to the clock of the Position and Orientation System (POS).
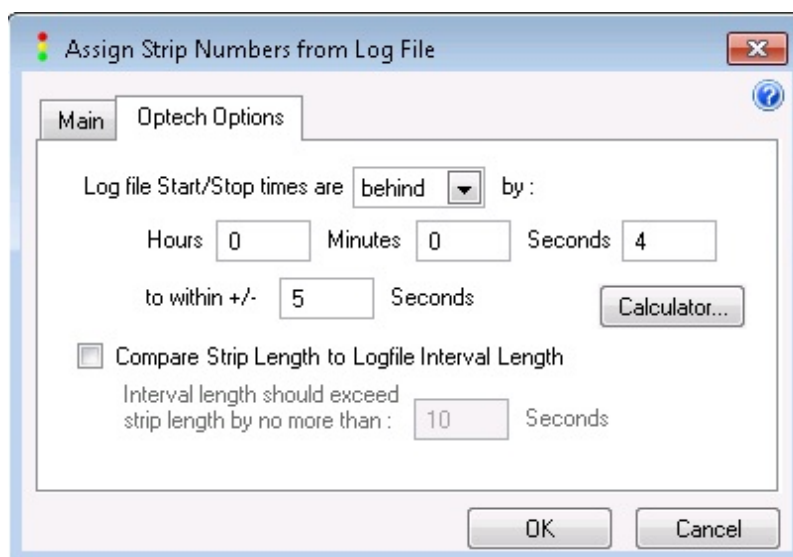

Figure 3-Optech Options

The *Calculator* button opens a dialog to allow you to easily convert from a date and a time in the log file to a timestamp suitable for comparison to those timestamps in the LAS files. By comparing this value with a corresponding timestamp of a LIDAR Source entity in GeoCue, you can calculate the offset between the computer and POS clocks.

The *Compare Strip Length* option may be enabled or disabled to increase or decrease the selectivity of the test used to correlate log file intervals with the LIDAR Source start and end timestamps.

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Acceptable Log File Formats for Assigning Strip Numbers

The Strip/Line (Optech Log File) and Line Number (Leica Flight Line Log File) should both be an integer having values ranging from 1 to 65535.

Optech ALTM-Nav Condensed Log File Format

The Optech ALTM-Nav Condensed Log file should be an ASCII file containing a header line that begins with:

Start Stop Strip …
Or
Start Stop Line …

Followed by rows, beginning with the corresponding three columns, formatted as in the following example:

22:19:54 22:20:18 42 …
22:23:39 22:24:02 43 …
22:27:04 22:28:25 44 …
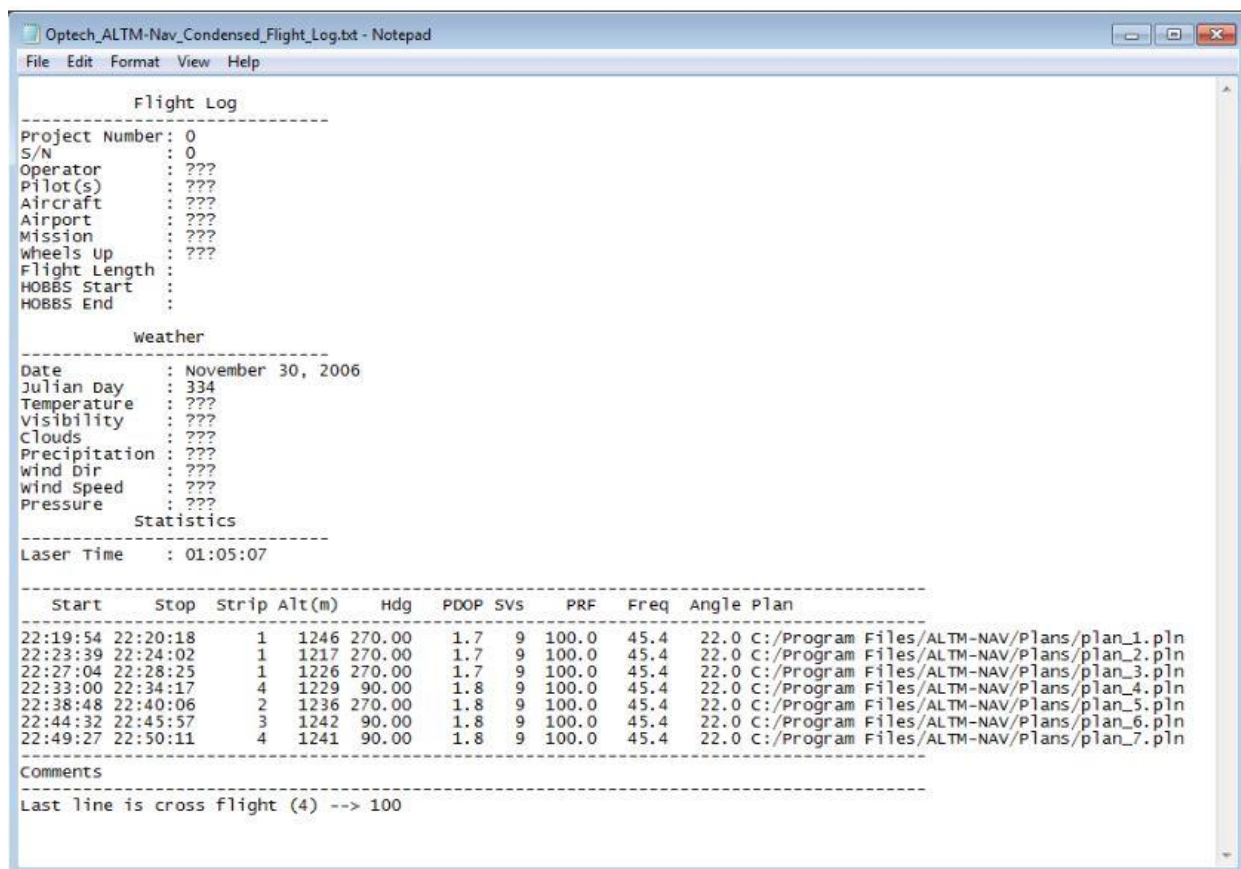
Figure 4-Optech ALTM-Nav Condensed Log File Format

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Leica Flight Line Log File or Simple ASCII Format
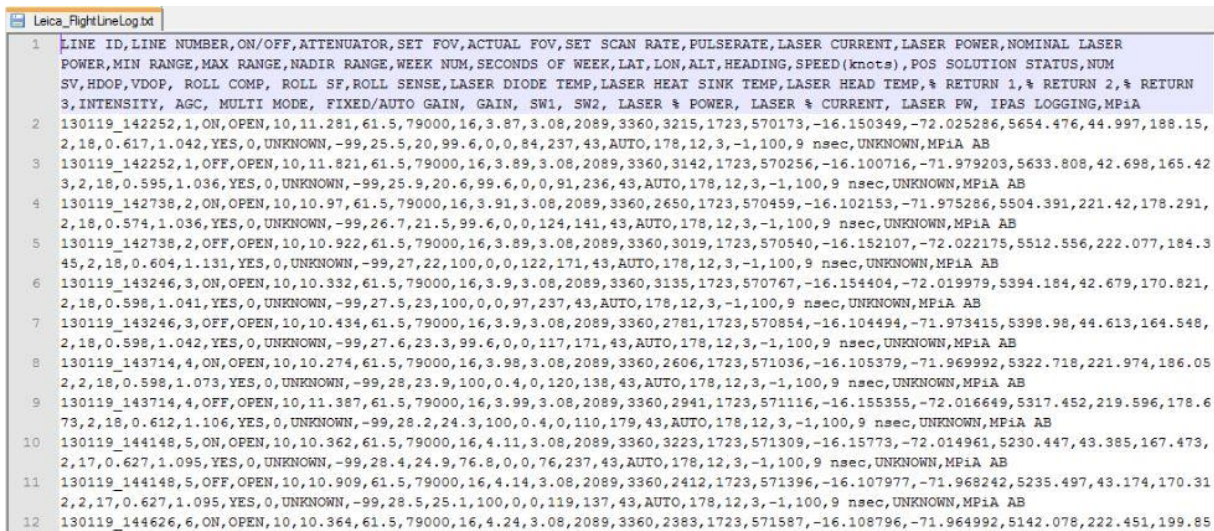
Similarly, the Leica Flight Line Log File, or Simple ASCII Format, should be an ASCII file containing a header line that begins with:

Line ID, Line Number, …

Followed by rows, beginning with the corresponding two columns, formatted as in the following example:
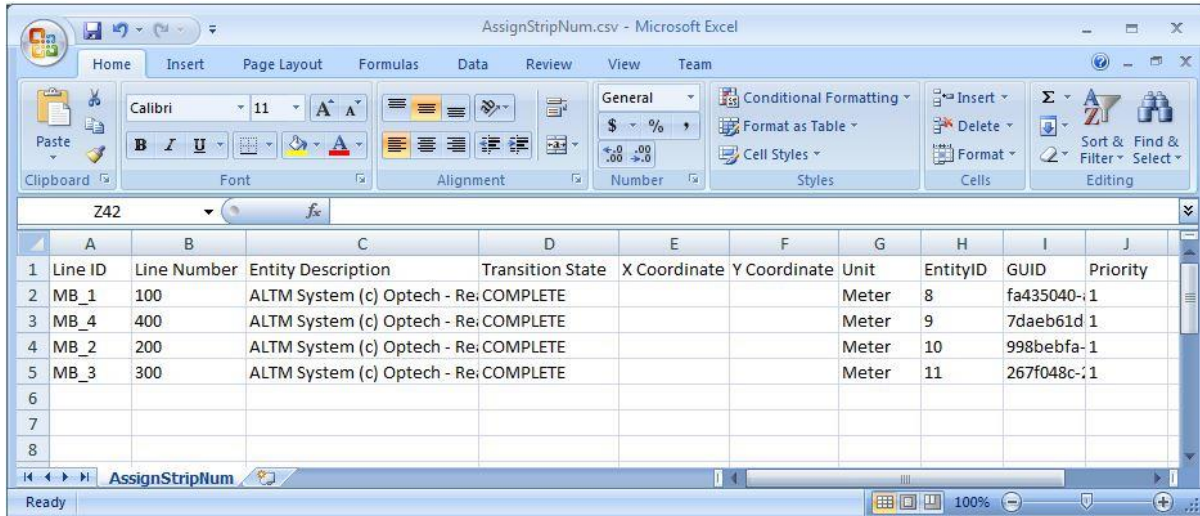
091122_174045, 135, …
091122_180053, 134, …
091122_182121, 133, …

Where the values for the first column match the name of the corresponding entity (or entities). The number of extra columns is not important as long as the first two columns are in this format. Hence, one may create an ASCII file to Assign Strip Numbers by exporting the LIDAR Source entities via Entity Manager, and modifying it to create the Simple ASCII format.

Figure 5-Leica Flight Line Log File

Figure 6-Simple ASCII File Format

Once the source ID (flight line numbers) have been assigned work can move forward with populating LAS Working Segments or generating TerraScan Trajectories from the LIDAR sources.

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