LX Navigation Colibri Setup and Tips

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The LX Navigation Colibri GPS Flight Recorder is a very popular flight recorder.   It is small and inexpensive and offers a simple LCD navigation display. Below are some tips to help you get the most out of your Colibri. This document is available on my web site at http://www.cumulus-soaring.com/lx.htm

If you have any suggestions for improving this document please let me know. I'm sure there are other tips and tricks that I have not found or forgot to include in this document. I can be reached at paul@remde.us

Navigating through the Menus and using the Keypad
The right and left arrow keys are used to move between screen groups. The up and down arrow keys are used to move up and down though a list of options within a screen group. Earlier models of the Colibri had a "✓" key for the "Enter" key and a "X" key for the "Esc" or "Escape" key. The "Enter" ("✓") key is used to begin editing or drill down into a menu. The "Esc" ("X") key is used to finish editing a number or back out of a menu. The "Esc" ("X") key does not function as a "cancel" key – backing out of editing a data field will not put the contents back to the way they were before you began editing them. I think of the "Esc" ("X") key as a "Done" key – not a "Cancel" or "Escape" key.

Wait for "LOG:STOP"
When done flying do not turn-off the Colibri until the Recording Status screen shows "LOG:STOP". The Recording Status screen is found in the GPS Status menu. Use the left or right arrow key to find the GPS Status menu and then use the up and down arrow keys to find the "LOG: xxxx" screen.

Turnpoint and Airport Databases
The Colibri contains both "Turnpoint" and "Airport" databases.

- Turnpoint Database
  - User created list of up to 600 "turnpoints".
    - Airports
    - Gliderports
    - Off-field landing sites
    - Cities
    - Bridges
    - Mountain passes, etc.
  - Turnpoints can be used in tasks. Airports in the Airport database cannot be used in tasks but they can be copied into the turnpoint database and then used in tasks (see below).
  - Can be edited by the user.

- Airport Database
  - Up to 4500 airports provided by LX Navigation.
  - Cannot be used in tasks, but they can be copied to the turnpoint database and then used in tasks (see below).
  - Cannot be edited.

Copying an Airport to the Turnpoint database
Since the airports in the airport database cannot be used in tasks it is important to know how to copy an airport to the turnpoint database.
- Use the left or right arrow key to navigate to the "TP" screens.
- Press the "Enter" ("✓") key to access the "TP MENU".
- Use the down arrow key to select the "New TPoint" screen.
- Press the "Enter" ("✓") key.
- You should now see "Copy APT data? N". Use the up or down arrow to select "Y" for yes and press the "Enter" ("✓") key.
- Press "Esc" ("X") to skip entering the ICAO airport identifier. That feature doesn't seem to work for me in the USA.
- Use the up and down arrow keys to select the country or US State and press the "Enter" ("✓") key when done.
- Use the up and down arrows and the left and right arrows to enter the first few characters of the airport name and press "Esc" ("X").
- The Colibri will then find all the airports that contain the entered characters. Use the up and down arrows to select the desired airport and press the "Enter" ("✓") key.

Navigating to a Turnpoint, Task Turnpoint or Airport
It is easy to select a turnpoint, task turnpoint or airport to navigate to. One very nice feature of the Colibri is that you can have one Turnpoint, one Task Turnpoint and one Airport selected in the 3 different screen areas and you can easily switch between the 3 different destination types using the right and left arrow keys.

- **Turnpoint Navigation**
  Navigating to a turnpoint is as easy as selecting a turnpoint in the turnpoint list.
  - Use the left or right arrow key to navigate to the "TP" screens. You will see the text "TP:" in the upper left corner of the screen", but only for a few seconds. After that the Colibri switches to the navigation screens. That is OK. You can still use the steps below to select a turnpoint if the "TP" text is no longer displayed on the top of the screen.
  - Use the up and down arrow keys to scroll through the list of turnpoints.
  - When you find the turnpoint you want to navigate to just pause for a few seconds and the navigation screens will appear with directions to the selected turnpoint.
  - To toggle through the 3 navigation screens press the "Esc" ("X") key.

- **Task Navigation**
  If you have a large number of turnpoints entered into your Colibri it can take a while to scroll through the turnpoint list to the turnpoint you are interested it. That problem can be avoided by setting up a task and using the Task Navigation procedure below.

Note: Navigating to task waypoints is only possible after you activate a task as described below in the section "Activating a Task using "Copy Task".

- o Use the left or right arrow key to navigate to the "TSK" screens. You will see the text "TSK:" in the upper left corner of the screen", but only for a few seconds. After that the Colibri switches to the navigation screens. That is OK. You can still use the steps below to select a turnpoint if the "TSK" text is no longer displayed on the top of the screen.
- o Use the up and down arrow keys to scroll through the list of task turnpoints.
- o When you find the turnpoint you want to navigate to just pause for a few seconds and the navigation screens will appear with directions to the selected task turnpoint.
- o To toggle through the 3 navigation screens press the "Esc" ("X") key.

- **Airport Navigation**
  It would be very difficult and time consuming to select an airport by scrolling through the huge airport database in the Colibri. To make it easy to navigate to an airport LX has created 2 ways to select an airport. You can select from the 20 nearest airports or you can search for an airport by name.

  - o **Navigating to the Nearest Airports**
    It is possible to view a list of the 20 nearest airports and then navigate to any of them. This works only with the airports in the airport database and not with the turnpoints in the turnpoint database.
    - ▪ Use the left or right arrow keys to select the "APT" screens. You should see "APT:" in the upper left corner of the screen. It will disappear after a few seconds and the navigation screens will appear. That is OK. You can still use the steps below to select a turnpoint if the "APT" text is no longer displayed on the top of the screen.
    - ▪ Use the up and down arrow keys to scroll through the list of 20 nearest airports.
    - ▪ When you find one you would like to navigate to simply wait a few seconds and the navigation screen will appear with the selected airport as the active waypoint.
    - ▪ To toggle through the 3 navigation screens press the "Esc" ("X") key.

  - o **Searching for and Navigating to an Airport**
    This is the best way to quickly select a distant airport to navigate to.
    - ▪ Use the left or right arrow keys to select the "APT" screens. You should see "APT:" in the upper left corner of the screen. It will disappear after a few seconds and the navigation screens will appear. That is OK. You can still use the steps below to select a turnpoint if the "APT" text is no longer displayed on the top of the screen.
    - ▪ Press "Enter" ("✓") to begin searching for an airport.
    - ▪ Press "Esc" ("X") to skip entering the ICAO airport identifier. That feature doesn't seem to work for me in the USA.

- Use the up and down arrow keys to select the country or US State and press the "Enter" ("✓") key when done. If your country or state does not appear in the list you will need to use LXe software on a PC to customize your airport database.
- Use the up and down arrows and the left and right arrows to enter the first few characters of the airport name and press "Esc" ("X").
- The Colibri will then find all the airports that contain the entered characters. Use the up and down arrows to select the desired airport and press the "Enter" ("✓") key. If you press the "Esc" ("X") key instead of the "Enter" ("✓") you will abort the airport search and continue navigating to the previously selected airport.
- To toggle through the 3 navigation screens press the "Esc" ("X") key.

3 Navigation Display Screens
You may have noticed that the navigation screens will appear anytime you pause for several seconds while in the TP, TSK or APT screens. There are 3 navigation screens available. To toggle through them use the "Esc" ("X") key. They are described below. One very nice feature of the Colibri is that you can have one Turnpoint, one Task Turnpoint and one Airport selected in the 3 different screen areas and you can easily switch between the 3 different destination types using the right and left arrow keys.

This is a little difficult to explain on paper to I'll take another shot at it below.

- To change the data displayed for the current destination (select from the navigation screens described below)
  - o Press the "Esc" ("X") key.
- To change the display between the active Turnpoint, Task Turnpoint and Airport
  - o Press the left of right arrow key (and wait a few seconds).

```
            Navigation Screen 1
            Track      TP_Name
            Bearing    Distance

            Navigation Screen 2
            Track     Ground Speed
            Bearing   Distance

            Navigation Screen 3
                 Wind
            Direction   Speed
```

Create Tasks in the TP Menu
You would think that you would create tasks from the "TSK" menu but you must do those that from the TP menu. That makes sense because the tasks are stored in the turnpoint database file. The TSK menu is used to navigate to task waypoints while flying and to "Copy" the desired task to the active task. Only one task can be active at a time. The active task will be declared automatically when the glider takes off.

To create a task:

1. Use the left or right arrow key to navigate to the "TP" screens. You will see the text "TP:" in the upper left corner of the screen", but only for a few seconds. After that the Colibri switches to the navigation screens. That is OK. You can still use the steps below to create a task if the "TP" text is no longer displayed on the top of the screen.
2. Press the "Enter" ("✓") key to access the task menu.
3. Use the up or down arrow key to select the "EDIT TASK" menu item.
4. Press the "Enter" ("✓") key to enter into the task edit menu.
5. Use the up and down arrow keys to select the task you want to edit (0 to 99).
6. Press the "Enter" ("✓") key to start editing the selected task.
7. The turnpoints will be entered into the task starting with turnpoint number 0 (zero) and incrementing up to the last turnpoint. You do not need to enter the take-off and landing sites. Use the up and down arrow keys to select the turnpoint number (which turnpoint in the task) you want to select. It makes sense to select them in order starting with turnpoint 0.
8. Press the "Enter" ("✓") key to select a turnpoint for editing.
9. The screen will display "TP NAME: ****". The "****" characters are used to search for the desired turnpoint from the user created turnpoint database (not the "Airport" database). Enter the first 1 or 2 characters of the turnpoint name you are looking for. Use the up and down arrows to change the highlighted character and use the left and right arrows or enter key to highlight a different character. When done press the "Esc" ("X") key or press the "Enter" ("✓") key a few times. The Colibri will then go to the first turnpoint that matches the text string you entered. For example – If I enter "STA" and press the "Enter" ("✓") key the display will jump to "STANTON". If it does not display the turnpoint you are looking for you can use the up and down arrows to move through the turnpoint list and find the desired turnpoint. When the desired turnpoint is displayed press the "Enter" ("✓") key.
10. Repeat steps 6 though 8 until you have entered the entire task.
11. When done entering the entire task press the "Esc" ("X") key a few times to get back to the TP screens.

Activating a Task with "Copy Task"
The Colibri can store up to 100 tasks that can be edited. Activating a task is necessary if you want to use the Colibri to navigate to through the task turnpoints. Also, the active task is declared upon take-off. Task declarations are necessary for many badge and record flights (but not contest or Online Contest flights).

To activate a task:
1. Go to the task ("TSK") screens using the left or right arrow keys.
2. Press the "Enter" ("✓") key to enter the task edit menus.
3. Press the down arrow once to select "COPY TASK".
4. Press the "Enter" ("✓") key
5. Use the up and down arrow keys to select the desired task and press "Enter" ("✓").
6. Use the up and down arrow keys to scroll through the task turnpoint to verify that you selected the correct task.
7. Press the "Esc" ("X") key to get back to the TSK screens.

Activating and Declaring Tasks with Version 4 or higher Colibris
Colibris that are version 4.0 or higher you can activate and declare a task using the procedure above or using the "Decl" button. Pressing the "Decl" button takes you to a screen that is very much like the task edit menus. You can create a new task using the "DECL.TSK EDIT" screens or use the to the "DECL.TSK COPY" screens to copy an existing task into the active task. The screens are used as described above.

Declaring a Task
Task declarations are necessary for many badge and record flights (but not contest or Online Contest flights). The active task will be declared automatically upon take-off. To activate a task see "Activating a Task with "Copy Task" above.

Items to setup in a New Colibri
Below are a few items that I recommend setting up in a new Colibri before you fly. You can set the parameters using the keypad and LCD display on the Colibri or you can use LXe software running on a PC for most of the items. LXe is much easier to use than the LCD on the Colibri. However, some items such as units do not seem to be available in LXe and must be set using the Colibri's LCD and keypad.

- **Record Interval**
  This is the interval at which the GPS position, altitude, pressure altitude and engine noise level are recorded to the flight memory. I recommend 04 seconds. That gives about 23.9 hours of flight log memory. You may set it to a longer interval if you prefer less data and more available memory.
    o Use the right or left arrow key to access the "Setup Menu" and press Enter ("✓")
    o "Logger Setup" should be displayed on the screen. Press Enter ("✓")
    o "Record Interval" should be displayed. Press Enter ("✓")
    o "Normal:" should be displayed along with the current setting. Press Enter ("✓") to enter edit mode.
    o Use the right and left arrow keys to move the cursor and use the up and down arrow keys to edit the numbers. To enter a number less than 10 you will need to enter a 0 (zero) for the first digit.
    o Press the "Esc" ("X") when done.
- **Time Zone**
  Setting the time zone will allow the Colibri to display the correct time.
    o Use the right or left arrow key to access the "Setup Menu" screen
    o Use the up or down keys to access the "Time Zone" screen and press Enter ("✓")
    o Use the up and down keys to adjust the time zone.
    o Press the "Esc" ("X") when done.
- **Units**
  Selecting the correct units for speed, altitude, etc. will make it much easier to understand the data displayed in the navigation screens.
    o Use the right or left arrow key to access the "Setup Menu" screen
    o Use the up or down keys to access the "Units Setup" screen and press Enter ("✓")
    o "Distance" should be displayed on the screen.
    o Press the Enter ("✓") key to enter edit mode.
    o Use the up and down arrow keys to select the desired units.
    o Press the "Esc" ("X") key when done.

- o Use the up and down arrow keys to select the "Speed:" screen.
- o Press the Enter ("✓") key to enter edit mode.
- o Use the up and down arrow keys to select the desired units.
- o Press the "Esc" ("X") key when done.
- o Use the up and down arrow keys to select the "Vario:" screen.
- o Press the Enter ("✓") key to enter edit mode.
- o Use the up and down arrow keys to select the desired units.
- o Press the "Esc" ("X") key when done.
- o Use the up and down arrow keys to select the "Altitude:" screen.
- o Press the "Enter" ("✓") key to enter edit mode.
- o Use the up and down arrow keys to select the desired units.
- o Press the "Esc" ("X") key when done.
- o Press the "Esc" ("X") key to exit the setup menu.

- **Pilot Name and Glider Data**
  - o **Version 3 or earlier Colibris**
    With earlier model Colibris you can enter only a single pilot name as described below. Enter the pilot's first and last name separated space such as "Paul Remde". This is much easier to setup using LXe software on a PC. LXe will replace the space with a decimal point "." – that is fine.
    - ▪ Use the right or left arrow key to access the "Setup Menu" and press Enter ("✓")
    - ▪ "Logger Setup" should be displayed on the screen. Press "Enter" ("✓")
    - ▪ Use the up and down arrow keys to select the "Flight Info" screen and press Enter ("✓")
    - ▪ "Pilot:" should be displayed. Press Enter ("✓") to enter edit mode.
    - ▪ Use the right and left arrow keys to move the cursor and use the up and down arrow keys to edit the characters. Press "Esc" ("X") when done.
    - ▪ The same process is used to edit the following data fields:
      - • "Glider:" (glider type such as "Ventus b"
      - • "REG.NUM" (registration number such as "N9999")
      - • "CMP.NUM" (competition ID such as "EX")
      - • "CMP.CLS:" (competition class such as Standard, 15m, etc.).
    - ▪ Press "Esc" ("X") after editing each data field.

  - o **Version 4.0 or higher Colibris**
    With version 4.0 or higher Colibris you can enter up to 100 pilots and 30 gliders using the "Pilot / Glider" key. This is a fantastic new feature for use in clubs and commercial operations.
    - ▪ **Pilot Name**
      Enter the pilot's first and last name separated space such as "Paul Remde". This is much easier to setup using LXe software on a PC. LXe will replace the space with a decimal point "." – that is fine. However, LXe can only be used to edit a single pilot's name. Additional pilots must be entered using the keypad on the Colibri. Existing pilot names can be edited or deleted using the Setup Menu.

- Press the "Pilot Glider" key.
- If no pilots have been entered yet you will see "Pilot Add". Press Enter ("✓") to add a new pilot name. If a pilot name has already been entered use the up and down arrow keys to select "Pilot Add" and press Enter ("✓")
- Use the right and left arrow keys to move the cursor and use the up and down arrow keys to edit the characters. Press "Esc" ("X") when done.

- **Glider Data**
  Enter the glider data as described below. This is much easier to setup using LXe software on a PC. However, LXe can only be used to edit a single glider. Additional gliders must be entered using the keypad on the Colibri. Existing glider data can be edited or deleted using the Setup Menu.
  - Press the "Pilot Glider" key **twice**. Pressing the key repeatedly will allow you to switch between selecting the Pilot or Glider.
  - If no gliders have been entered yet you will see "Glider Add". Press Enter ("✓") to add a glider. If a glider has already been entered use the up and down arrow keys to select "Glider Add" and press "Enter" ("✓")
  - "Glider:" should be displayed. Use the right and left arrow keys to move the cursor and use the up and down arrow keys to edit the characters. Enter a glider type such as "Ventus b". Press "Esc" ("X") when done.
  - The same process is used to edit the following data fields:
    - "REG.NUM" (registration number such as "N9999")
    - "CMP.NUM" (competition ID such as "EX")
    - "CMP.CLS:" (competition class such as Standard, 15m, etc.).
    - Press "Esc" ("X") after editing each data field.
    - You will then see "SAVE? Y". Use the up and down arrow keys to select "Y" for yes or "N" for no. Press either the "Enter" ("✓") or "Esc" ("X") key when done.

Soaring Software Data Output Setup
Glide Navigator II, SeeYou Mobile, WinPilot, pocket*StrePla and other soaring flight software programs can receive pressure altitude data and serial number data from LX Navigation Colibri and LX20 units. These features will probably also work with other LX products. The Colibri is **not** setup by default to send out all the data required by soaring flight software programs. It must be configured to send the correct data and have the baud rate ("COMSPEED") set to 4800 baud. Below is a list of the settings that must be correct:
- NMEA Output, "GPGGA = Y" (enabled by default)
- NMEA Output, "GPRMC = Y" (enabled by default)
- NMEA Output, "LXWPx = Y" (not enabled by default – you must enable it)
- COM Speed, "COMSPEED 4800bps" (not the default – you must set it)

Version 4 Colibris are very easy to setup. The "Pocket PC Data" option enables all the necessary data output sentences.

- Go to the Setup menu and use the down arrow key to access the "NMEA OUTPUT" screen.
- Press the "Enter" key to access the sub menus.
- Press the down arrow once. The display should read "Pocket PC Data".
- Press the "Enter" key. The screen will momentarily display "Pocket PC Data Set".
- Press the "Esc" key and then the down key once. The display should read "COM SPEED".
- Press the "Enter" key.
- Use the up and down arrow keys to select "COMSPEED 4800bps".
- Press the "Enter" or "Esc" key.

Version 3 or earlier Colibri units must have the output sentences enabled manually.

- Go to the Setup menu and use the down arrow key to access the "NMEA OUTPUT" screen.
- Press the "Enter" ("✓") key to access the sub menus. The display should read "NMEA GPGGA? Y". If the "Y" is not there you will need to edit it to enable it.
- Press the "Enter" ("✓") key to enter edit mode.
- Use the up or down arrow key to change select "Y".
- Press the "Enter" ("✓") or "Esc" ("X") key to exit the edit mode.
- Use the down arrow key to access the "NMEA GPRMC? Y" screen. If the "Y" is not there you will need to edit it to enable it.
- Press the "Enter" ("✓") key to enter edit mode.
- Use the up or down arrow key to change select "Y".
- Press the "Enter" ("✓") or "Esc" ("X") key to exit the edit mode.
- Press the up or down arrow key several times to access the "NMEA LXWPx? Y" screen. If the "Y" is not there you will need to edit it to enable it.
- Press the "Enter" ("✓") key to enter edit mode.
- Use the up or down arrow key to change select "Y".
- Press the "Enter" ("✓") or "Esc" ("X") key to exit the edit mode.
- Press the "Esc" key ("X") and then the down key once. The display should read "COM SPEED".
- Press the "Enter" ("✓") key.
- Use the up and down arrow keys to select "COMSPEED 4800bps".
- Press the "Enter" ("✓") or "Esc" ("X") key