

# HiES<sup>®</sup> Tech Enhancing model builders' lives HiLOG<sup>®</sup>



# **HiLOG Application Manual**

Suitable for any RC model



*Rev: 1.2 / 26.01.2014 HiES<sup>®</sup> Tech s.r.o.* 



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#### **Explanation:**



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# 1 Revision history

Rev 1.0: initial edition





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# 3 System requirements

#### **Operating systems supported:**

Microsoft Windows<sup>®</sup> XP, SP1 – SP3 Microsoft Windows<sup>®</sup> 7, 32b (64b) Microsoft Windows<sup>®</sup> 8, SP1

**Connection:** USB 2.0, microUSB connector

# 4 Introduction

The HiLOG application manual is (similarly to the HiLOG unit) useable for any radio-controlled mode. For simplicity reasons, the manual describes usage for one specific model type – the aircraft model. This means that the terms like "flight time" for aircrafts can be interpreted also as the time driven for RC cars or other vehicles, sailing time in case of RC sailboats, etc. – as needed.

# 5 Connecting the HiLOG unit to a computer via USB connector

Before starting the application under the Windows<sup>®</sup> operating system, connect HiLOG to your computer using an USB port. If you are connecting it for the first time, wait until the USB driver is installed and a message "Your new hardware is installed and ready to use" is shown in Windows<sup>®</sup> notification area (next to the hours). The detection of a new hardware by the operating system can take several minutes. After the abovementioned message is shown, you can start the main HiLOG application and specify settings for your model.



In some cases, Windows<sup>®</sup> requires to restart the whole system after new hardware is detected. It is recommended to restart Windows<sup>®</sup>.

#### 5.1 Installation

The application is included on a miniCD shipped with the product. There is no need to install the application, just copy the "**HiLOG\_application.exe**" file to any folder on the hard drive of your computer or notebook. Upon the first run of the application, all the necessary parameters and new empty database files are initialized automatically in the directory where "**HiLOG\_application.exe**" is located. The application is then ready to use. No need to perform any installation or other tasks.

### 5.2 Running the "Logbook application for HiLOG"

Upon running the application for HiLOG, the first tab shown in the application menu is **"HiLOG"**. The application contains floating hints, that are displayed by holding the mouse pointer above the editing field. In 2 seconds, a popup window appears that contains more detailed description of the control or its use.





### 5.3 Application language presets

Select the application language by clicking on one of the flag icons. The selected language is stored automatically in the application and is used in the future application runs.

#### 5.4 Application info panel

Info panel is located in the lower part of the application and it shows useful information about the connected HiLOG unit.

#### Information displayed when HiLOG unit is connected

HiLOG revision: application revision, bootloader revision, hardware revision. The Status field shows the detailed firmware status. The green text **"Connected"** indicates that HiLOG is connected and working.

HiE5\_HILOGrcPro (Serial=3F7358663632) Connected Application Rev: 1.12 Bootloader Rev: 1.13 HW Rev: 1.00 Status: 0xD8EA-0x0002

#### Information displayed when HiLOG unit is not connected

If no HiLOG unit is connected, it is indicated by the following message:

No device Not connected





# 6 Logbook application for HiLOG

## 6.1 "HiLOG" Menu



After connecting the HiLOG unit via USB, the data are retrieved automatically from HiLOG to the application and they are shown in a comprehensive view.







Hulde Logbook Application © 2013 by HES Tech s.r.e. (version: 1.2 build: 1.2.12.4)

Incomparison of the problem of

If no HiLOG unit is connected, only an empty form is displayed.

The data shown have the following meaning:

#### Starts:

Number of model starts. If a brand new model was equipped with a HiLOG unit from the first flight, this number indicates the exact number of model starts for the whole operating life of the model. If an existing model was equipped with HiLOG additionally, this number indicates a sum of two start counts. An estimated number of model starts, entered by the model builder during the HiLOG installation to the model (see following chapters), and the exact number of starts counted from the moment of unit installation.

#### Total flight time:

This is the number of hours spent flying. If a brand new model was equipped with a HiLOG unit from the first flight, this number indicates the real total time of flights for the whole operating life of the model. If an existing model was equipped with HiLOG additionally, this number indicates a sum of two start times. An estimated pilot time so far, entered by the model builder during the HiLOG installation to the model, and the exact pilot time counted from the moment of unit installation.





#### Model age:

The time from model purchase or entering its data to the HiLOG database to present day.

#### Pilot, Residence, Email, Phone:

The contact information of a model owner or pilot. In case of loss, a finder can return the model to the owner to the contact provided.

#### Icons for storing the updated data to the database:



This icon indicates that HiLOG contains new data that need to be updated in the computer database. If this is your model that needs to be updated in the database, click this icon and the application automatically reads new data from HiLOG to the database. When done, the icon changes to a green OK mark.



If you have connected someone else's model, e.g. a model of your colleague or friend, do not perform the update of your database so that the foreign models do not get confused with your own models in the database. Thus, you can view statuses of the other's models without messing up your database.



The icon of a computer with a green OK mark indicates that your database in computer is up-to-date and the data in HiLOG and the database are consistent. There is no need to update the database.





### 6.2 "HiBAT" Menu



Viewing the data of a HiBAT currently connected:



The data shown have the following meaning:

### Starts:

The number of battery starts, i.e. the discharge cycles. If a brand new battery was equipped with a HiBAT unit from the first use, this number indicates the exact number of battery starts for the whole operating life of the battery. If an existing battery was equipped with HiBAT additionally, this number indicates a sum of two start counts – an estimated number of starts entered by the model builder during the HiLOG installation to the model (see following chapters) and the exact number of starts counted from the moment of unit installation.

#### Age:

The time from battery purchase or entering its data to the HiLOG database to present day.





#### Owner:

The contact information of an owner or pilot. In case of loss, a finder can return the battery to the owner to the contact provided.

#### Charge current:

Charge current value, if you use a compatible automatic charger.

#### **Discharge current:**

Discharge current value, if you use a compatible automatic charger/discharger.

#### **Revision:**

The revision number of HiBAT.

#### Icons for storing the updated data to the database:



This icon indicates that HiBAT contains new data that need to be updated in the computer database. If this is your battery that needs to be updated in the database, click this icon and the application automatically reads new data from HiBAT to the database. When done, the icon changes to a green OK mark (see below).



If you have connected someone else's battery, e.g. a battery of your colleague or friend, do not perform the update of your database so that the foreign batteries do not get confused with your own batteries in the database. Thus, you can view statuses of the other's batteries without messing up your database.



The icon of a computer with a green OK mark indicates that your database in computer is up-to-date and the data in HiBAT and the database are consistent. There is no need to update the database.





#### 6.3 "Settings" Menu



The **"Settings**" menu is used to create a new model or a new HiBAT battery unit. The submenu **"Other**" contains the configurations of HiLOG, including the upgrade options of HiLOG units.

#### 6.3.1 "HiLOG" Menu

HiLOG Loab	ook Application © 2013 l	y HiES Tech s.r.o. (version)	: 1.2 build: 1.2.12.4)	A CARA LA	
HiLOG	у ніват	Database	Settings		ELH vic systems
	Modell	•		Engine channel	
Hilog	ID	40E43BFECCC1E099 R	Rev: 1.12 23:05:59 14.6.2013	V Enabled	0
	Model name	Trex450PRO, original, 30	GX default	Calibration Threshold 52	
	Model type	Helicopter	₹	Majawant severe	
Hibat	Bought	03/10/2010	👮 📢 🖪 March 2010 🕨 🕨	Load default settings for	
	Added starts	0	Sun Mon Tue WedThu FriSat 1 2 3 4 5 6		₹
	Added time	0 [min]	7 8 9 10 11 12 13 14 15 16 17 18 19 20	N -	0,2 G
Other	Dilot		21 22 23 24 25 26 27 28 29 30 31	A	1,0 G
2	Pliot				2,5 G
	Name	Petr Smith	-	Filter	30112
	Residence	12 Old Ave, Pitt	A.		0,1 G
	Email	psmith12@			

# Create a new model:

In the HiLOG menu, there is an option for creating a brand new model by clicking the **"Create a new model"** button. This option deletes all data that are stored in HiLOG from the previous time. When the button is clicked, the application shows a popup window





with a question if you really want to create a new model and if you are aware of the fact that all the data from HiLOG will be deleted.



This way, only the data from HiLOG will be deleted. However, the **data are still stored in the database**, for the purpose of complete records and evidence of all models, including those that are already sold or destroyed after an accident.

### ID

A unique ID number of HiLOG that indicates a specific model in the database.

#### Model name

Arbitrary text of max. 60 characters, indicating the name of the model or some detailed info about the model. It is recommended to choose as comprehensive name as possible, so that the model can be easily found in the database when needed.

#### Model type:

The following model types are available: airplane, helicopter, car, copter, sailboat, other.

#### Bought

The date when the model was purchased or put into operation, or entered in the HiLOG database. From this date on, the age of the model is counted automatically.

#### Added starts

The number of starts performed before they started to be counted automatically by the HiLOG unit. Use this option if the HiLOG unit is installed to an existing model that has already made a couple of starts. If you know the exact number of these starts, enter it here. If you do not know it, enter an estimate.

#### Pilot, Residence, Email, Phone:

The contact information of a model owner or pilot. In case of loss, a finder can return the model to the owner to the contact provided. Up to 60 characters can be entered.

## Engine channel

Engine channel		
🗸 Enabled		0
Calibration Threshold	52	





Enable the engine channel by checking **"Enabled"** – in such case, HiLOG considers the flight to be started from the moment of opening the throttle. The throttle level considered by HiLOG the start of a flight, can be selected in the interval of 0–100 %. This level is called Threshold and the currently selected value is shown next to the **"Threshold"** button. Next to the throttle indicator, the current level of throttle is shown, including the numbers that indicate the current percentage level. The background color of this number can be red or green. The red color indicates the situation when the current throttle level is below the threshold value for starting the flight time count. If the color is green, the current throttle level is above the threshold value and HiLOG would consider the flight started.

# Calibration

# Calibration

In order to specify the correct settings of throttle range, it is necessary to calibrate the lever by pressing the **"Calibration**" button. The dialog box below is shown:



Confirm by pressing **"YES**" and move the throttle lever at the transmitter to minimum. Then press **"Continue**".







When requested to set the throttle lever to MAX, move the throttle lever at the transmitter to maximum and press **"Continue"**.



Move the throttle lever to the position that you want to use as threshold (i.e. the position from which the HiLOG will consider the flight to be started) and press **"Finished"**.

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When the calibration is done, the settings are stored in the HiLOG unit. A following confirmation message is shown:

Hilog_simplestmenu X
Params written ok into HiLOG FLash!

The throttle control is successfully calibrated and you can check its settings in Settings – HiLOG – Engine channel menu. When the throttle control is moved, the threshold indicator moves as well.

Engine channel		
🗸 Enabled 🛛 🔤		49
Calibration Threshold	52	

### Threshold

If you need to change the threshold for the throttle lever (i.e. the value from which the flight is considered as started), set the throttle lever to the new position and at the same





time, press the **"Threshold"** button. The new value is automatically read and stored to the HiLOG unit.

Using the Threshold option, you can set a bigger lever deflection, e.g. 80 % of the throttle lever maximum/minimum. After the value is set, you can e.g. test the operation of a combustion engine at low speed, and this operation will not be considered by HiLOG as a new model start.

#### **Movement sensor**



The movement sensor detects the model movement. It distinguishes between 3 levels of movement activity.

- **N Normal level** the flight is not considered to be started yet, and the software assumes that the model is at standstill. Above this level, the model performs a regular, normal flight.
- **A Acrobatic level** above this level, the model is in the acrobatic flight mode. This level is more demanding as to the energy consumed from batteries.
- E Extreme level above this level, the model is performing extreme aerobatics or manoeuvres with a large overload. This level is the most demanding as to the energy consumed from batteries.

The individual levels can be set manually by sliders in the configuration window. The indicator of the current status of movement sensor shows the current status of movement sensor. When you hold the model in your hand and move it, you will see the reactions to the model movement in a static state. During the flight, these values will vary according to the dynamic effects affecting the model.





#### Filter

The filter is used for removing noise from the movement sensor. The recommended value is 50 Hz.

### Save settings into HiLOG



After setting all the necessary data in the HiLOG configuration window, save all settings into HiLOG by pressing the **"Save settings into HiLOG"** button.



If you make any changes of HiLOG parameters and do not press the Save settings into HiLOG button, the data will not be stored in HiLOG.

# 6.3.2 "HiBAT" Menu







HiLOG	👔 🧐 НіВАТ	Database Setting	s de la caractería de la c	High Intelligent Electronic Syst	terms
iLOG	Battery	40E42FCF63265C1C 9.3.2013 11:	32:25 HiBAT Revision 0.10		
	Battery name	VXG3 borrowed 1	Owner, contact Sm	ith +1 888 547	
libat	Starts count Battery type Capacity	59 3 LiPol 7	Charge current Discharge current	[1000 [mA]	
	Colle in sorios	3 Parallel 1		🔲 Discharge before charge	
Dther	Bought		Charged capacity Charged capacity max	2405 [mAh] 2100 [mAh]	
	Hi	12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29			
					reate

#### Create new battery:

In the HiBAT submenu, there is an option for creating a brand new battery by clicking the **"Create new battery"** button. This option deletes all data that are stored in HiBAT from the previous time. When the button is clicked, the application shows a popup window with a question if you really want to create a new battery and if you are aware of the fact that all the data from HiBAT will be deleted.



This way, only the data from HiBAT will be deleted. However, the **data are still stored in the database**, for the purpose of complete records and evidence of all batteries, including those that are already sold, served out or destroyed after an accident.

#### ID

A unique ID number of HiBAT that indicates a specific battery in the database.

#### **Battery name**

Arbitrary text of max. 29 characters, indicating the name of a specific battery or some detailed info about the battery. It is recommended to choose as comprehensive name as possible, so that the battery can be easily found in the database when needed.





#### Starts count

Number of battery starts. If you use HiBAT for an existing battery that has already made a couple of starts, enter the number of these starts here. If the exact number of the starts is not known, just enter an estimate. From this time on, the exact number of starts will be determined, if the battery is used with the HiLOG unit.



If you forget to connect a battery with a HiBAT identifier to the HiLOG unit before a flight, you can increment the value by one in this menu. Thus, the flight will be registered. Even in case the battery was used in another (or someone else's) model, you can use this option to adjust the number of starts and add the real number of starts that were performed with the battery. This way, a precise recording of starts for each battery is secured.

#### **Battery type**

The following battery types are available: LiPol, LiIon, LiFe, NiMH, NiCd, Other.

#### Capacity

Rated battery capacity, listed by producer. In mAh.

#### **Cells in series**

The number of battery cells, connected in series.

#### Parallel

The number of battery cells, connected in parallel.

#### Bought

The date when the batery was purchased or put into operation, or entered in the HiLOG database. From this date on, the age of the battery is counted automatically.

#### **Owner**, contact

The contact information of a model owner or pilot. In case of loss, a finder can return the model/battery to the owner to the contact provided. Max. 29 characters can be entered.

#### Charge current:

Charge current value, if you use a compatible automatic charger.

#### **Discharge current:**

Discharge current value, if you use a compatible automatic charger/discharger.

#### **Discharge before charge**







If checked, the charger will discharge each battery before charging.

#### Charged capacity

The capacity value reached during last charging. This value is not supported in the current software revision yet.

#### Charged capacity max

The maximum capacity reached during all chargings for the total operating life of the battery. This value is not supported in the current software revision yet.





6.3.3 "Other" Menu



The **"Settings – Other"** menu contains all the settings of HiLOG application as well as the option for firmware upgrade.



### **Application settings**

**"Download the latest software version automatically"** – when selected, the application will check the availability of newest version upon each start on the internet. If an update is available, it will be automatically downloaded to the computer.

**"Show internet upgrades available for download (if any)"** – when selected, the application will check the availability of newest version upon each start on the internet. If there is an upgrade version, the application asks the user to install it.





#### HiLOG settings

"Automatic time synchronization in HiLOGu upon connecting to PC" – this option enables synchronizing the realtime clock in HiLOG with the current computer time automatically.



It is recommended to leave this option checked. The time will be adjusted automatically even in case of travelling through different time zones.

**"Check if there is firmware upgrade for your connected HiLOG unit"** – if selected, the application will check the connected HiLOG for current firmware version when the connection is established. If the firmware is not up-to-date, the application offers an upgrade to newest version.

**"Download the latest firmware version automatically"** – when selected, the application will check the availability of newest firmware version upon each start on the internet. If an update is available, it will be automatically downloaded to the computer.

**"Show FW upgrades available for download (if any)**" – when selected, the application will check the availability of newest firmware version upon each start on the internet. If there is an upgrade version, the application asks the user to install it.

#### Database

# Clean database

By clicking "Clean database", the check and maintenance of the database is performed.

#### FW upgrade



Click the **"Firmware upgrade**" button to upgrade firmware in HiLOG. The upgrade file has a **.fw** extension.

### Upgrading firmware:



Before upgrading firmware, disconnect all HiBAT identifiers!

Start the firmware upgrade and select the firmware file you want to use.





Confirm the following dialog:



A dialog box is opened where the progress of firmware upgrade is shown:



Wait for the message about completing the firmware upgrade:







Press "End". The firmware is installed successfully.

# Internet links

Direct links to web pages. Click the link to open an internet browser with the selected web page automatically.





# 7 Database



The **"Database"** menu shows all the database items available, such as the number of models, batteries and flights. To show the detailed database records, press the **"Open database"** button.



## Open database



Click the **Open database** button to open a new database window with all the detailed records of models, batteries and flights.





### 7.1 Models database

#### Models

The models database lists all the models stored in the database. Click any model in the database to see all the relevant details, such as the number of starts, total pilot time and model age in the upper left part of the window:

										Settings
Model name:	Acromas	ter								🔘 Basic
				-		0.1				🔵 Normal
Starts: 20 Time				Time s	ipent:	U nrs				Expert
Total flight time:	01:40:08	[hh:mm:ss	1	Total o	osts:	\$268.00				
Model age:	7 months	10 days		Export	to file	ТХ	T CSV	XLS		Delete
Model name		Bought	Model type	IDHEX	Added starts	Added time	Pilot name	Pilot residence	Pilot email	Pilot phone
Acromaster		2013/06/17	Airplane	1145273709	0	0	Petr Smith	12 Old Ave, P	psmith12@	+1 888 547
AutoGyro I		2013/09/08	Other	3478156779	10	30	Petr Smith	12 Old Ave, P	psmith12@	+1 888 547
Trex450PRO, original, 3	GX default	2010/03/10	Helicopter	3435258009	0	0	Petr Smith	12 Old Ave, P	psmith12@	+1 888 547
Trex450SEVII old with li	ghts	2007/06/10	Helicopter	3144811641	0	0	Petr Smith	12 Old Ave, P	psmith12@	+1 888 547
Trex700N, first, OS91H	Hatori	2010/03/10	Helicopter	2445171013	120	720	Petr Smith	12 Old Ave, P	psmith12@_	+1 888 547

In the upper part of the window, the total time spent during construction and repairs of the model is shown. Also the sum of the costs of purchase, repairs, maintenance etc. is shown.

### Settings



The amount of the displayed model data can be selected by choosing one of the following options: Basic, Normal and Expert. The "Basic" view shows the minimum amount of data from the database, the "Expert" view shows the maximum data. The current display settings are stored for the next application runs.

#### Deleting a model from the database







You can delete currently highlighted model from the database by clicking **"Delete"**. All the relevant flights of this model are deleted as well.

#### Export to file



All the model database data can be exported to TXT and CSV files. The CSV file is a file with tab-delimited entries.



The exported files can be used for further processing in other programs for the purposes of presentation or recording.





### 7.2 Battery database



Battery name:	Kokam 1 T450									Settings -	: nal
Starts:	15									Expe	ert.
Total flight time	. 01:45:41 [bb:mm:cc]										1999
rotar night time	: 01:43:41 [uu:uuu:22]										
Battery age:	2 years 8 months 25 o	lays Exp	oort	to file	TXT	CSV	XLS				
, ,						_				Delet	е
ID	Battery name	Owner, contact		HiBAT Revision	Battery type	Capacity	Cells in series	Parallel	Charge current	Discharge current F	lags
40E43BFDDAA49939	Kokam 1 T450	Smith +1 888 547	224	1	LiPol	2100	3	1	1000	1000	0
40E43BFE13E0561F	Kokam T450 3	Smith +1 888 547	224	1	LiPol	2100	3	1	1000	1000	0
40E435E09C4504E5	Turnigy 2600 new 1	Smith +1 888 547	224	1	LiPol	2650	3	1	1000	1000	0
LOS LOLL (SP LOOSDO	Turnigy 2600, old 1	Smith +1 888 547	224	1	LiPol	2600	3	1	1000	1000	0
40E43A16FD4B9FD2		Smith +1 888 547	224	1	LiPol	3000	6	1	2000	1000	0
40E43A16FD489FD2 40E44912E63F83EB	Turnigy 3000 for 1500					12121212	6	1	3000	1000	0
40E43A16FD4B9FD2 40E44912E63F83EB 40E435E08EAC8C3C	Turnigy 3000 for 1500 Turnigy 3000, 30C, for T500	Smith +1 888 547	224	1	LiPol	3000	0	-			
40E43A16FD4B9FD2 40E44912E63F83EB 40E435E08EAC8C3C 40E44BF06DBB4D70	Turnigy 3000 for 1500 Turnigy 3000, 30C, for 1500 Turnigy new set #6 a	Smith +1 888 547 Smith +1 888 547	224	1	LiPol LiPol	3000 3000	3	1	1000	1000	0
40E43A16FD489FD2           40E43A16FD489FD2           40E44912E63F83EB           40E435E08EAC8C3C           40E448F06DB84D70           40E448F07FCF6E38	Turnigy 3000 for 1500 Turnigy 3000, 30C, for 1500 Turnigy new set #6 a Turnigy new set #6 b	Smith +1 888 547 Smith +1 888 547 Smith +1 888 547		1 1 1 1	LiPol LiPol LiPol	3000 3000 3000	3	1	1000	1000	0
40E43A16FD489FD2           40E43A16FD489FD2           40E44912E63F83EB           40E435E08EAC8C3C           40E44BF06D8B4D70           40E44BF07FCF6E38           40E44BF3D9FAF516	Turnigy 3000 for 1500 Turnigy 3000, 30C, for T500 Turnigy new set #6 a Turnigy new set #6 b Turnigy new set #6 c	Smith +1 888 547 Smith +1 888 547 Smith +1 888 547 Smith +1 888 547		1 1 1 1	LiPol LiPol LiPol LiPol	3000 3000 3000 2650	3	1 1 1	1000 1000 1000	1000 1000 1000	0 0 0
40E43A16FD489FD2 40E44912E63F83EB 40E435E08EAC8C3C 40E44BF06DBB4D70 40E44BF07FCF6E38 40E44BF07PCF6E38 40E44BF07835C9BF	Turnigy 3000 For 1500 Turnigy 3000, 30C, for T500 Turnigy new set #6 a Turnigy new set #6 b Turnigy new set #6 c Turnigy new set #6 d	Smith +1 888 547 Smith +1 888 547 Smith +1 888 547 Smith +1 888 547 Smith +1 888 547		1 1 1 1 1 1	LiPol LiPol LiPol LiPol LiPol	3000 3000 3000 2650 2650	3 3 3 3	1 1 1 1	1000 1000 1000 1000	1000 1000 1000 1000	0 0 0
40E43A16F04B9F02 40E44912E63F83EB 40E435E08EAC8C3C 40E44BF006DB84D70 40E44BF07FCF6538 40E44BF07PGF6538 40E44BF07835C9BF 40E44BF07835C9BF	Turnigy 3000 For 1500 Turnigy new set #6 a Turnigy new set #6 b Turnigy new set #6 c Turnigy new set #6 d Turnigy new set #6 d	Smith +1 888 547 Smith +1 888 547		1 1 1 1 1 1 1	LiPol LiPol LiPol LiPol LiPol LiPol	3000 3000 3000 2650 2650 2650	3 3 3 3 3	1 1 1 1 1	1000 1000 1000 1000 1000	1000 1000 1000 1000 1000	0 0 0 0
40E43A16F04B9F02 40E44912E63F83EB 40E44912E63F83EB 40E44BF06DB84D70 40E44BF07BCF6E83 40E44BF00PFCF6E38 40E44BF07B35C9BF 40E44BF07835C9BF 40E44BF07B830856	Turnigy 3000 For 1500 Turnigy new set #6 a Turnigy new set #6 b Turnigy new set #6 c Turnigy new set #6 d Turnigy new set #6 d Turnigy new set #6 e Turnigy new set #6 f	Smith +1 888 547 Smith +1 888 547		1 1 1 1 1 1 1 1 1	LiPol LiPol LiPol LiPol LiPol LiPol LiPol	3000 3000 2650 2650 2650 2650	3 3 3 3 3 3 3 3	1 1 1 1 1 1 1	1000 1000 1000 1000 1000 1000	1000 1000 1000 1000 1000 1000	0 0 0 0 0

The battery database lists all the batteries stored in the database. Click any battery in the database to see all the relevant details of this battery, such as the number of starts, total pilot time and battery age in the upper left part of the window.



When you are choosing a new battery to purchase, you can decide for a type from the database according to your experiences. You know the exact number of starts and the total pilot time. A model builder can thus eliminate the purchase of low-quality batteries.

### Settings







The amount of the displayed battery data can be selected by choosing one of the following options: Basic, Normal and Expert. The "Basic" view shows the minimum amount of data from the database, the "Expert" view shows the maximum data. The current display settings are stored for the next application runs.

#### Deleting a battery from the database



You can delete currently highlighted battery from the database by clicking "Delete".

#### Export to file



All the battery database data can be exported to TXT and CSV files. The CSV file is a file with tab-delimited entries.



The exported files can be used for further processing in other programs for the purposes of presentation or recording.

#### 7.3 Flights database

Flights







Database of RC models and batte	ries	A VAD	S.	A VAR	98 (A)	8 (A)		14A	HA HA	AA A	
Models Battery Flights Service											
Time limit	Search by models	-								_ Se	ettings
No time limit	All models			Starts:	1	40					🔵 Basic
O vear	O All from ca	iteaory		o car cor						1	🔿 Normal
	[ Simplement			Total fli	ght time: 1	3:21:42	[hh:mm:s	s]		3	Expert
2013 +	Airpiane		Ŧ	Event	- <b>#</b>  -			CSV XIS			
Time period	Only mode	el		Export	o nie						
From 11 💆	Airplane		Ŧ	)							
То [] 📅			Ŧ	Sea	rch >>						
Date of flight Model name		Flight time	ID M	4odelID	ModelIDHEX	HiBAT red	HiBAT pink	HiBAT violet	HiBAT blue	HiBAT green	HiB, 🔺
2013/06/13 18:06:24 Trex700N, firs	st, OS91H, Hatori	00:10:07	1 4	40E43BBE91BE5945	2445171013	-	35	0.50		1.50	
2013/06/13 18:24:22 Trex700N, hirs	st, OS91H, Hatori	00:10:41	2 4	40E43BBE91BE5945	2445171013	-	-	-	-	-	
2013/06/15 13:53:45 Trex/00N, hirs	st, OS91H, Hatori	00:07:49	3 4	40E43BBE91BE5945	24451/1013	-	-	-	-		40020
2013/06/16 18:55:28 Trex4505EVII	old with lights	00:02:45	1 4	40E43C36BB720479	3144811641	-	-	-	-	HUEHSDEUDAA	49939
2013/06/16 19:03:40 Trex4505EVII	old with lights	00:05:41	2 4	40E43C36BB720479	3144811641		-	0.5	40E438EDD0580CAE		
2013/06/16 19:11:30 Trex4505EVII	old with lights	00:05:08	3.	40E43C36BB720479	3144611641	-	-	-	HOLHSDI DD9500CML		405
2013/06/16 20:25:04 Trex4505EVII	old with lights	00:01:50		40E43C360B720479	2144011641	-	-	-	40E438EDC984E1E5	-	
2013/06/16 20:39:10 Trex4505EVII	old with lights	00:03:31	6 4	40E43C36BB720479	3144811641	_	_		Interior of the left of	-	
	old Merrighes	00.01.10		102 10 2000 00 10 17 9	0111011011						
											•
Model name F	lights	rex450P	RO, or	riginal, 3GX default							
Trex450PRO, original, 3GX default	52			Trex45	OSEVII old with	lights					
Trex450SEVII old with lights	48 .	50									
Acromaster	20	40 🕂									
AutoGyro I	13 ;	30					Acromaste	<u>r.</u> ]	RutoCuro I		
Trex700N, first, O591H, Hatori	7	20							Trex	700N, first, OS	91H, Hatori
		10									
	-	0	1								2
				10							
Database summary M	iodels: 5 Batterie	s: 13 Fligh	its: 14	0 000 0	22 52	A 10 20	2 5200	A OF THE A	07372 07372 L	1202 523	a and the

The database of flights lists all the flights stored in the database. The chart and table in the lower part of the window show models sorted according to the number of starts (from the highest to the lowest). Click the battery color code in the table to show the name of the battery.

You can search for the flights according to your parameters using filtering in the fields **"Time limit"** and **"Search by models"**.

# Time limit

limit	
	₹
iod	
09/01/2013	7
09/30/2013	7
	imit iod 09/01/2013 09/30/2013





You can search for flights according to specific dates and list the search results by year or a specific timeframe, like in the picture – e.g. from September 7, 2013 to September 30, 2013. If you want to list all the flights, select **"No time limit"**.

#### Search by models

₹
₹
, 3G <del>Ţ</del>

You can search the flights only for a specific group of models or a single model. If you want to list all flights for all the models in the database, select **"All models**".

#### Search



Click the "Search" button to start searching by the selected parameters.



Example 1) Searching for all flights of a Trex450PRO model in the year 2013

Setting the parameters:

- Under "Time limit" click "Year" and select 2013.

- Under **"Search by models**" click **"Only model**", select the **"Helicopter**" category and the **"Trex450PRO…**" model.

- Click "Search".

The results will be listed in a table with all the details of the connected batteries, etc.

The number of flights for a specific time period is displayed in the last table after point 4 in the following picture. The details for each flight are listed in point 5.





Notice         Search by models         All models         All models         Settings         Basic           1         No time linit         All from cetegory         I Helcopter         Basic         Normal           20133         Vest         All from cetegory         I Helcopter         Basic         Normal           5         Only model         TrextSORRO, orignal, 3CK default         Basic         Normal         Export to file         Basic         Normal           2013/07/01         19:16:83         TrextSORRO, orignal, 3CK default         Basic         Normal         Export to file         Basic         Normal           2013/07/02         19:16:83         TrextSORRO, orignal, 3CK default         Basic         Nordal/Default Help         Helcopter         Image: Status         Helcopter         Image: Status         Helcopter         Image: Status         Image: Status         Help         Export to file         Image: Status         Image: Status<	Database of RC models and batt	eries	126 G	A FA FA	3 12 6	123	12-A I	FA FA	-/		
Time limit       All models       All models       Starts:       52         I ho time limit       All from category       I helicopter       I from category       Basic         I mo period       I reserved       I reserved       I reserved       I reserved       I reserved         I transport       I reserved       I r	Models Battery Flights Service										2
1       No time limit       All models       Starts:       52         year       Only model       Total flight time:       05:07:07       hh:mm:ss]       Expert         Tome period       From       01/01/2013       Total flight time:       05:07:07       hh:mm:ss]       Expert         Total flight time:       05:07:07       Total flight time:       05:07:07       hh:mm:ss]       Expert         1       Total flight time:       05:07:07       Total flight time:       05:07:07       hh:mm:ss]       Expert         1       Total flight time:       05:07:07       Total flight time:       05:07:07       hh:mm:ss]       Expert         1       12013/07:01       Trex450RO, original, 30: default       00:00:01       100:400:01 <td>Time limit</td> <td>Search by models</td> <td></td> <td>- C</td> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td>Settings</td> <td></td>	Time limit	Search by models		- C	4					Settings	
• year       • All from category       • Normal         • Dials of Elock       • Only model       • Export to file       • Total flight time: 05:07:07       hhmmiss)       • Export         • Tom 12/31/2013       • Only model       • Export to file       • Total flight time: 05:07:07       hhmmiss)       • Export         • Date of Elock       • Model pame       • Intervision (D) 00:00:02       1       end:439EFCCC1E099       4435550009       • • • • • • • • • • • • • • • • • • •	1 🔿 No time limit	🔵 All models		Starts:	52					🔵 Basic	ļ
2013       2       Helicopter       Form       01/01/2013       Export to file       Form       10/01/2013       Export to file       Form       10/01/2013       Export to file       Form       10/01/2013       Form       12/01/2013       Form       10/01/2013       Form       10/01/2013       Form       Form       10/01/2013       Form       10/01/2013       Form       Form       10/01/2013       Form       Form       10/01/2013       Form       Form       10/01/2013       Form       Form       Form       10/01/2013       Form	💿 vear	All from catego	orv							🔵 Normal	
Locid         Preducted         Preducted           Time period         From         01/01/2013         TrextSOPRO, original, 362         Export to file         3           5         12/31/2013         TrextSOPRO, original, 362         Freedout to file         1	2012 =	2 Holicoptor		Total flight	t time: 05:07	7:07 hh	:mm:ss]			• Expert	
Time period       Only model       Export to me       Time period         To       12(31/2013       Trex450PRO, original, 3C       Search>       3         Date of Biob:       Model name       Eliobt time       In Output State       HBAT onck       HBAT on	2013 -	2 Heilcopter	Ŧ	Europet to f	il.	E	TXT CS				
From       01/01/2013       TrextSOPRO, original, 36 T       Search >>       3                To             12/31/2013             TrextSOPRO, original, 36 T              Flobb time             10 ModelIn EX             HIBAT red. HIBAT	Time period	Only model		Export to I	lle	_					
To         [2]31/2013 *         Trex450PRO, original, 3G *         Search >>         3                  Index of Blobb               Model Iname               HIGAT Note Income Intervention               Income Intervention               HIGAT Note Income Intervention               HIGAT Note Income Intervention               HIGAT Note Intervention               Intervent               Intervent               Intervention               Intervention               Intervention               Intervention               Intervention               Intervention             Intervention               Intervention             Intervention             Interventoppon original, 3GX default            00:00:12	From 01/01/2013 👼	Helicopter	₹								
Date of Blobt         Model Dame         Elliptit time         TD. Model/D         Model/DHEX         HBAT nick         HBAT nick <td>To 12/31/2013 👮</td> <td>Trex450PRO,</td> <td>original, 3G 🐺</td> <td>Search</td> <td>&gt;&gt;</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	To 12/31/2013 👮	Trex450PRO,	original, 3G 🐺	Search	>>						
Linder of flight       Model Date       Linder Charles       Linder	5		et tu las		les three sets to		lum m + 1	lum em i ti		lunar bila	- 8
2013/07/10 19:10:30       TOCK1001 K9, frighal, SGK default       00:00:42       1       10:10:10:20:30:00:0       -<	2013/07/01 19:16:58 Trev450PPO	original BCY default	00:08:02	1 40E43BEECCC1E000	3435258009	HBAI red	HIBA L DIDK	HIBAL VIOLET	HIBAT blue	40F43BEDDAA49939	18
2013/07/03 20:26:54       Trex450PRO, original, 3GX default       00:08:20       3       40E438FECCC1E099       3435258009       -	2013/07/02 18:40:49 Trex450PRO	, original, 3GX default	00:04:34	2 40E43BFECCC1E099	3435258009		-	-	- 5	-	┛Ш
2013/07/06 20:38:17       Trex450PRO, original, 3GX default       00:11:14       4       40E438FECCC1E099       3435258009       -	2013/07/03 20:26:54 Trex450PRO	, original, 3GX default	00:08:20	3 40E43BFECCC1E099	3435258009	1.2	-	1.1	-	140	
2013/07/07 17:12:00       Trex450PRO, original, 3GX default       00:08:59       5       40E438FECCC1E099       3435258009       -	2013/07/06 20:38:17 Trex450PRO	, original, 3GX default	00:11:14	4 40E43BFECCC1E099	3435258009	1	-	-	1.12	-	
2013/07/14 15:28:35       Trex450PRO, original, 3GX default       00:02:34       6       40E438FE0CC1E099       3435258009       -       40E438E09C4504E5       -       -         2013/07/14 15:31:14       Trex450PRO, original, 3GX default       00:02:34       6       40E438FE0CC1E099       3435258009       -       40E438E09C4504E5       -       -         2013/07/14 15:31:14       Trex450PRO, original, 3GX default       00:08:44       8       40E438FE0CC1E099       3435258009       -       40E438ED0AA499393       -       -       -       40E438ED0A449352       -       -       -       -       -       40E438E00A43936       -       -	2013/07/07 17:12:00 Trex450PRO	, original, 3GX default	00:08:59	5 40E43BFECCC1E099	3435258009	1.57	10.00	-	1.52	2.00	
2013/07/14 15:31:14       Trex450PRO, original, 3GX default       00:07:00       7       40E438FE0CC1E099       3435258009       -       40E438E09C4504E5       -         2013/07/14 17:54:54       Trex450PRO, original, 3GX default       00:08:12       9       40E438FE0CC1E099       3435258009       -	2013/07/14 15:28:35 Trex450PRO	, original, 3GX default	00:02:34	6 40E43BFECCC1E099	3435258009	-	-	40E435E09C4504E5		1-1	
2013/07/14 17:54:54       Trex450PRO, original, 3GX default       00:08:44       8       40E438FECCC1E099       3435258009       -	2013/07/14 15:31:14 Trex450PRO	, original, 3GX default	00:07:00	7 40E43BFECCC1E099	3435258009	1949	-	40E435E09C4504E5		1923 (J. 1923)	
2013/07/14 18:14:48 Trex450PRO, original, 3GX default       00:08:12       9       40E438FECCC1E099       3435258009       -       -       -       40E438FEDDAA49939         Model name       Flights	2013/07/14 17:54:54 Trex450PRO	, original, 3GX default	00:08:44	8 40E43BFECCC1E099	3435258009	-	-	-	-	-	
Model name       Flights         Trex450PRO, original, 3GX default       52         6       40         30	2013/07/14 18:14:48 Trex450PRO	, original, 3GX default	00:08:12	9 40E43BFECCC1E099	3435258009	0.57		-	0.00	40E43BFDDAA49939	
Model name       Flights         ▶ Trex450PRO, original, 3GX default       52         6       40         30										•	12
Trex450PRO, original, 3GX default         52           6         40           30         30           10         30           0         0	Model name	Flights			Tue	450000	wining 1, 200	1			
6 50 40 30 20 10 0 	▶ Trex450PRO, original, 3GX default	52				X450PRO,	original, 3GA				10
6 40		50 -									8
	6	40 -									2
		30 -						······			1
		20-									
0		10 -									
		0-						100 C			
		Andela, E. Rabbanian.									

**P** 

Example 2) Searching for all flights that have been done during the whole past month, with all the models

Setting the parameters:

- Under **"Time limit"** click **"Time period"** and select the dates from - to. In this case, **"September 1, 2013 – September 30, 2013"**.

- In "Search by models", click "All models".

- Click "Search".

The number of all starts including the pilot time is listed in the form in the upper right (point 4). See the picture below.





The list of all the models that were used during the last month, including graphic representation, is listed in the table of models (point 5).

Database of RC models and batteries Models Battery Flights Service   Time limit Search by models   Vear All models   1 2013 All from category   Helicopter Only model   From 09/01/2013   Helicopter   0						Settings Basic Normal Expert					
To 09/30/2013 対	Trex450PRO,	original, 3G	Ŧ	Search	>>	3					- 1
Date of flight Model name		Flight time	ID		ModelIDHEX	HiBAT red	HiBAT pink	HiBAT violet	HIBAT blue	HiBAT green	
▶ 2013/09/07 16:18:27 Trex450PRO,	original, 3GX default	00:08:30	34	40E43BFECCC1E099	3435258009	140	-	40E435E09C4504E5	-	-	
2013/09/08 15:59:08 Trex450PRO,	original, 3GX default	00:06:27	35	40E43BFECCC1E099	3435258009	1928	2	-	12	122	
2013/09/08 16:06:10 Trex450PRO,	original, 3GX default	00:02:54	36	40E43BFECCC1E099	3435258009	870	40E43A1704A9EB98	850	-	3.5.3	
2013/09/09 19:16:00 AutoGyro I		00:05:07	1	40E446BCCF5075EB	3478156779	3.88					
2013/09/09 19:23:07 Acromaster		00:03:26	12	40E4416F44437D6D	1145273709	1.00	Ξ.	-	-	244	
2013/09/09 19:27:19 Trex450PRO,	original, 3GX default	00:08:35	37	40E43BFECCC1E099	3435258009	1928			12	1920	
2013/09/10 19:15:35 AutoGyro I		00:03:32	2	40E446BCCF5075EB	3478156779	31737			15	35.3	
2013/09/12 21:11:03 Acromaster		00:00:41	13	40E4416F44437D6D	1145273709	8.88	40E43A1704A9EB98			0.70	
2013/09/12 21:56:40 Trex4505EVII	old with lights	00:02:37	34	40E43C36BB720479	3144811641	100	-	40E435E09C4504E5	-		
							ř				
Model name       Flights         Trex450PRO, original, 3GX default       15         AutoGyro I       13         Acromaster       5         Trex450SEVII old with lights       3         Trex450SEVII old with lights       0											

# Export to file



All the flights that were searched can be easily exported to TXT and CSV files. The CSV file is a file with tab-delimited entries.



The exported files can be used for further processing in other programs for the purposes of presentation or recording.





#### 7.4 Service database



	1 Model name: Tr Total time spent: 21	ex450SEVII old with lights	
2 Determine task, obstan, Haldhi 2011/01/03 Bought 0 2013/04/03 Undercarriage repair 1 2013/07/16 Rotor setup 3 2013/07/16 Rotor setup 3	Total costs:     \$1       980     16       5     1       21     4         7         0         0         1 <td>,006.00  TXT  ty title  of record  spent  0 [hrs]</td> <td>Costs 0</td>	,006.00  TXT  ty title  of record  spent  0 [hrs]	Costs 0
Database summary Models: 5 Batte	ries: 13 Flights: 140		n on on on on l

#### Select model

An automatically created list of models in the database is listed here. Select the model to display its service data or to add new activities. By selecting a model, the service details for the selected model are also shown, such as the sum of the hours spent by construction and repairs or settings and the total costs for a specific model. This information is shown in the area no. 1 on the following picture. In the area no. 2 is a table of all the activities in the database.

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#### Displaying details of one activity

Click a specific activity in table (area 1, see the picture below) to see the details (area 2) of the works that were performed during the specific day and their costs.

Database of RC models and batteries      Models     Battery     Empire     Service			
Select model Trex450PRO, original, 3GX default Trex450PRO, driginal, 3GX default Trex450PRI old with lights Acromasser AutoGyro I Trex700N, first, OS91H, Hatori	Model name: Trex450SE Total time spent: 21 hrs Total costs: \$1,006.00	/II old with lights	
Date     Activity title     Type of recold       2011/01/03     Bought     0       2012/07/16     Rotor setup     3       1     1	sxts     Time spent       980     16       21     4       Type of record       Time spent       Rotor:       collective:       +11°11°       cyclic:       +8°8°	07/16/2013 🔭 Rotor setup Setting up and adjustr ₹ 4 [hrs] Costs	21
Create new record Delete record	tariae 13 Elimbre 140	Save record	

#### Save record



You can change any data for each displayed activity (area 2, see the picture above) and save your changes into the database by clicking **"Save record"**.

#### Create new record

Create new record

A new record can be created by clicking **"Create new record**" (point 1, see the picture above). The new record is shown as an empty item in the table of activities (point 2):





Database of RC models and batteries	The File File				
Models Battery Flights Service					
Select model Trex450PRO, original, 3GX default Trex450PRO (and with lights Acromaster Autogyro I Trex700N, first, OS91H, Hatori	Model name: Total time spent: Total costs:	Trex450SEVII old with lights 21 hrs \$1,006.00 3			
Date Activity title Type of record	Costs Time spent	Date 01/26/2014			
2011/01/03 Bought (	980 16				
2013/04/03 Undercarriage repair		Activity title			
		Type of record 🛛 🐨			
2		Time spent 0 [hrs] Costs 0			
Create new record Delete record		4 Save record			
Database summary Models: 5 Bai	teries: 13 Flights: 140				

3a) Fill in the date of the related activity.

3b) Enter the title for the activity. This title will be shown in the database of activities after saving the record (point 2).

3c) Select the type of record (Construction, Repair, Regular maintenance, Settings and adjustment, Checks or Troubleshooting...).

- 3d) Enter the time spent (in hours).
- 3e) Enter the costs (if any).
- 3f) Enter a detailed text description, if needed.

After entering all the selected details, save the record in the database by clicking **"Save record"** (point 4, see the picture above).





### **Delete record**



Click the **Delete record** button to delete the currently displayed record. Before deletion, the application waits for your confirmation:



### Export the service data into TXT file

TXT

The service data for each model can be exported to a TXT file including the record details, such as costs and times spent.



Using the service database

When entering the data into the service database, you can specify as detailed information as necessary.

It is recommended to add also the information about the number of replacements of a specific part. Thus, it will be possible to determine how many flights and flight hours has the part undergone in the model since a specific time.

It will be also possible to determine the models that are maintenance-intensive (i. e. you spend more time with their maintenance and repairs, instead of flying).





# 8 Software

The software is included in the HiLOG package.

1x miniCD



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