LX 7000 - Basic
V 1.1

Flight Data Computer and GPS Navigation system with Flight recorder

Pilot's manual

1 Contents

2 General

The instrument consists of two units, the **LX 7000 DU** (80 mm main unit) and **LX 7000 AU** with Vario indicator and sensor signal data acquisition (57 mm). Both units communicate exclusively via 485 system bus. Additional LCD Vario indicators can be added any time.

Vario functions

- Vario, Netto, Relative and average
- Speed command
- Final glide calculator
- TE compensation (tube or electronic)

Navigation functions:

- Jeppesen airport and airspace database for Europe and USA (up to 5000 airports)
- 600 turnpoints
- 100 tasks
- Statistic
- Near airport function
- Flight recorder under IGC rules (not approved)

2.1 System configuration

2.1.1 LX 7000 basic

The system consists of:

- LX 7000 DU without GPS receiver with NMEA input, connector for direct connection of Colibri or LX 20
- LX 7000 AU with LCD vario indicator

2.1.1.1 Options

- Build in GPS receiver, for stand allone use
- LX magnet compas
- Secondary LCD Vario indicators (unlimited)

2.2 Technical data

- Power 8-16 V DC
- Consumption   400mA/12V (without audio)
- 80 mm std Aircraft cutout main unit.
- 57 mm std. Aircraft cutout LCD unit.
- Length 110 mm (exc. connector)
- NMEA output
- Winpilot interface
- 12 Channel GPS receiver (LX 7000 standard)
- External speaker
- Data compatible with LX 20 and Colibri.
- PC communication
- Wiring
- Additional LCD Vario could be connected via 485 bus
- Weight: 800g

2.3 Rotary switches and keys (buttons)

LX 7000 AU hasn't any switches or keys; all command is sent using LX 7000 DU.

LX 7000 DU switches and keys:

- four rotary switches (selectors)
- six keys (push buttons)

2.3.1   On/Start key

A short press on ON/Start key will switch the instrument **ON.** To switch the instrument off hold **ESC/OFF** key for a few seconds and the instrument will be switched off. To switch the instrument off during the flight needs a confirmation from the pilot, not to be switched off by mistake.

IMPORTANT!

After having a short power brake during flight and the instrument will be off for a few seconds**, it will not produce two flights**, the altitude will remain, that means no significant influence on final glide.
During flight the key is used to start the task, to see more character of airport name and to step one step back if the edit menu is active (see paragraph APT).

2.3.2   Mode selector ⇔ (rotary switch)

The ⇔ is used to change modes of operation. This switch has the **highest priority in** the system. Whenever it is activated **a mode changeover will happen.**

2.3.3   Up/down selector ⬍ (rotary switch)

This rotary switch has lower priority than ⇔ switch and is active all the time in the selected mode. It is mainly used for selecting sub menus during navigation and to scroll in edit menu.

2.3.4   ENTER key

 The main function of that key is **confirmation** and to start edit procedures.

2.3.5   ESC/OFF key

It is a multifunctional key, which has two main functions.

- After ESC a jump to one menu higher will follow
- By input of letters and numbers (blinking cursor) **ESC confirms the whole row** (not necessary to press ENTER few times)

IMPORTANT!
Longer press on ESC/OFF will switch the unit off. During the flight an additional warning will be activated and switching off will follow after confirmation.
It is not possible to switch the unit off from SETUP mode.

2.3.6   ZOOM (rotary switch)

This is a multifunctional rotary switch. Its main function is changing the **zoom level in graphic mode.**

Additionally the zoom switch is used as follows:

- To select turnpoints (only in TP main page)
- After a mistake by edit it is possible to go back rotating this knob (only by blinking cursor)

2.3.7 Event key

After activation the recording of the LX 7000 flight recorder will be faster for a predefined time (see setup/flight recorder). Configuration **LX 7000 Basic – Colibri BB** (black box) will activate event function in Colibri after pressing of EVENT key on LX 7000.

2.3.8 MC/Bal key

The key is used for MC and ballast input, after first press the MC input will be offered like a window inserted into the display. Rotating ⬍ will produce changes of the MC.

Second press on MC/Bal key will activate ballast input, use the same procedure like by MC.

2.3.9 GO TO key

The pilot is able to make some modes invisible (setup/hidden modes). After doing that all mentioned modes are running in background and are not selectable rotating ⬌. To recall such a hidden mode, **GO TO** key should be used. After pressing a table of all LX 7000 BASIC modes will appear on the screen and the pilot will be able to select (⬍) believable mode and activate it after enter.
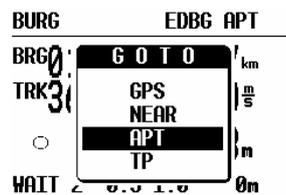
3 Operation modes

The LX 7000 BASIC has 7 modes or main menus. All of them are selected **directly by rotating the** ⬌ or by GO TO key. The diagram shows us the menu (mode) structure of LX 7000 BASIC.

⬅MODE⮕
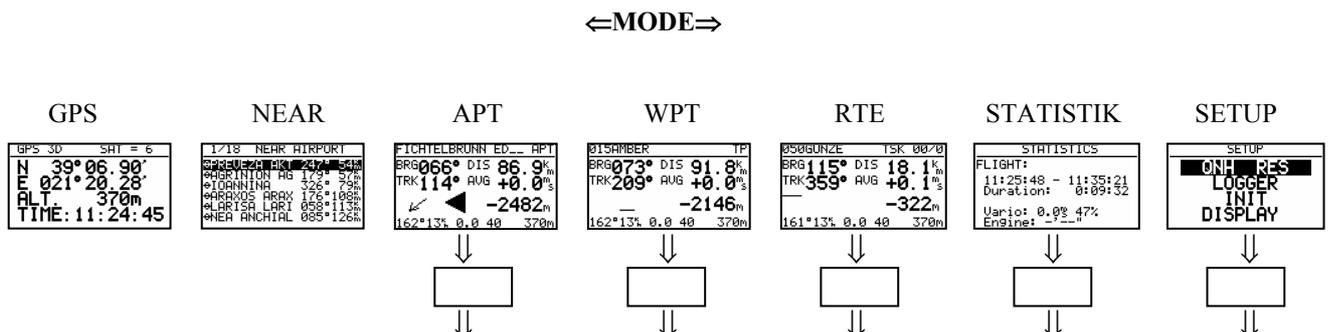
Navigation menus (APT, TP, TSK) have sub menus, which are selected using ✦ .

GPS	GPS status no input
NEAR	Near airport no input
APT	Navigation and selection of airports
TP	Navigation, selection and edit of turnpoints
TSK	Navigation, selection and edit of task
STAT	Flight statistic and logbook

SETUP is organized in two levels. The first level (no password required) is accessible for everybody. For the second level, the pilot has to use the password. The password is not a top secret; it is the same for all instruments and published.

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After installation it is necessary to activate the password and adjust the instrument settings and desired units.

3.1 SETUP

3.1.1   SETUP before password

Changes can be made at any time. This first level contains **no system settings** at all.

✦ will select corresponding sub menus.

3.1.1.1   QNH RES (QNH and safety altitude)

After switching on, the pilot has an opportunity to input actual QNH, taken from meteorological service. Using this feature it is possible to offset the altitude during the flight caused by pressure changes during the flight. Without input of **initial QNH** (in booting routine), this function will not be active durin flight.
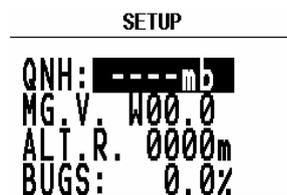
Procedure:

- Using the ✦ choose the item (QNH, ALT.R. MG.VAR. or BUGS)
- Press ENTER
- Use ✦ and ENTER for input
- Close the procedure with ESC

Some GPS receivers don't deliver **mg. variation**. In that case the input of local variation is obligatory, especially if magnet compass is used for wind calculation, or mg. track is used by navigation. Having a receiver delivering variation, no input is possible (AUTO message will appear)

ALT.R. allows input of safety altitude by final glide, after input the final glide will go higher than calculated by computer and the arrival should happen on ALT.R. altitude. The final glide difference indicator will be on zero during the final glide.

"**BUGS**" is polar degradation because of "buggy" wings. The input is in glide ratio degradation percentage. (5%, means glide ratio degradation is 5%)

3.1.1.2   FLIGHT RECORDER

As previous mentioned, the flight recorder (flight recorder) of LX 7000 BASIC fulfills all IGC requirements, but is not approved, that means only **using LX 7000 BASIC** with an external IGC approved flight recorder will produce IGC acceptable flights.

After "enter" on FLIGHT RECORDER.

The following data is stored under FLIGHT INFO:
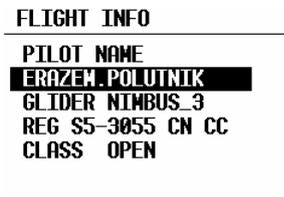
Input of data could be done manually or by PC.

LOGTIME is an important setting for sufficient flight recording.
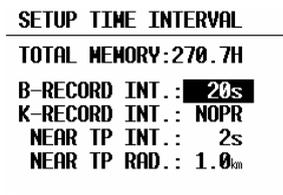
TOTAL MEMORY is the **capacity of memory** and depends on settings only. This number is not reduced after some flights are stored. It changes only **after new settings** have been made in setup. The total memory indicates how many hours can be flown without loosing the flight data because of overwriting.

B-RECORD: position, GPS altitude, pressure altitude, UTC and GPS status are recorded
Pilot sets record interval, the default value is 12 seconds.

K-RECORD: not active now

NEAR TP INT.: being close to the turnpoint (inside NEAR RAD) the logging runs faster
NEAR TP RAD.: radius that defines NEAR

(I) and (J) (RECORDs are not active)

EVENT

After pressing EVENT key, the flight recorder will run a limited time faster like defined in LOGTIME. Activation of EVENT is recorded like a **special record in the IGC file** (PEV). Some competition rules require using EVENT before departure.

```
   SETUP EVENT MARKER

FIX INTERVAL:  2s
NUMBER OF FIX:  30
```
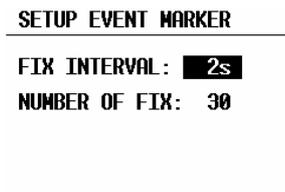
Example: after EVENT, 30 additional fixes will be logged in 2-second interval.

Important!

LX 7000 BASIC activates event in Colibri BB automatically.

3.1.1.3   INIT
The following parameters can be defined using this setting.

```
          SETUP

VARIO FIL.:   1.0
VARIO INT.:   20s
VARIO RNG.:    5%
TAB: 1.0%
AUTO SC:      OFF
WIND/COMPASS: N.C.
```
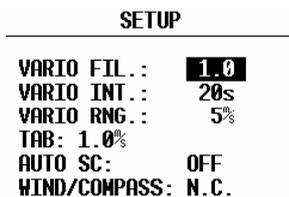
- VARIO FIL: damping of vario indicator 0,5 up to 5, a normal setting would be 3
- VARIO INT: vario average time, 20 seconds default
- VARIO RNG: vario range
- TAB: audio dead zone by speed command
- AUTO SC: speed command change-over automatic

OFF, change over possible using external switch only
GPS, after climbing (circling) is detected, an automatic change over will follow
IAS in 5 km/h steps from 100 up to 160 km/h

The external switch will cause change over after activation without any respect on automatic.

- WIND/COMPASS: compass is an optional device which can be connected to the LX 7000 BASIC 485 bus. The device delivers magnetic track, using compass an additional wind calculation method can be used. The method needs a straightaway flight. The time for calculation is set using this menu (normal 15 seconds). Longer time means a better wind calculation.

3.1.1.4   DISPLAY

The contrast depends on the viewing angle of the pilot. To adjust it use this setting.

```
      SETUP DISPLAY

  LCD CONTRAST:   50%
```
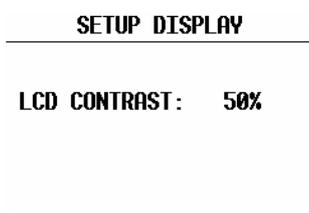
To change the contrast rotate ✜ .

3.1.1.5   TRANSFER

To communicate with PC, LX 20 or Colibri use this menu. Data transfer is started after ENTER, for detailed information see paragraphs further on.

3.1.1.6   PASSWORD

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3.1.2   SETUP after password

After password input **(96990)** further 19 system settings are available. During the flight the password is inactive, that means after ENTER on password **the LX 7000 BASIC jumps directly into the setup menu!**

3.1.2.1   TP   (Turn point)

All settings about turnpoints can be done in this menu. The LX 7000 BASIC is able to store up to 600 turnpoints.

```
       SETUP TP
  TP-QUICK POINT NAME
  DATE: OFF      AP
  TP-QUICK POINT AUTO
  SELECT:  OFF
  NEAR RADIUS:   0.5km
  TP-SORT:  ALPHABET
```
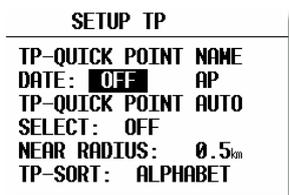
TP-QUICK POINT NAME

The pilot is able to store his **actual position** like a turnpoint during the flight. Such turnpoints are so called QUICK TP and are generally named like AP (actual point). How to store the actual position will be described later. Setting DATE OFF will store the position like **AP: 12:35.** The numbers shows the time of storing. Setting DATE ON will store the position under date and time (28121330 for 28 dec. 13:30).
To store the actual position, the START key should be pressed in TP mode.

TP-QUICK POINT - AUTO

SELECT: OFF after stored, the actual position will not be selected automatically
SELECT: ON after stored, the actual position will be selected automatically and ready for navigation

NEAR RADIUS

The setting has nothing to do with the setting described in FLIGHT RECORDER. The LX 7000 BASIC has a very useful function named „Simple task". This function is inactive when a regular task is started. The instrument will detect being close to the turnpoint and after reaching of distance smaller than NEAR RADIUS, the turnpoint will be taken like a confirmed TP of simple task. Simply said, flying from TP to TP (or APT) would build a nice in-flight statistics and useful flight evaluation after the flight. For more information on this see Fly LX 7000 BASIC.

TP-SORT

The LX 7000 BASIC is able to sort the turnpoints **under alphabet or under distances** (some kind of NEAR TP function). Being sorted under distance **the nearest TP** will appear, after starting of select procedure.

3.1.2.2   OBS. ZONE   (observation zone)

Following confirmation procedures can be defined:
- Start zone
- Turnpoint confirmation procedure
- Finish procedure
- FAI photosector or cylinder templates

START ZONE

All procedures can be defined using two angles and two radiuses (A1, A2, and R1, R2). A21 defines the orientation of the sector. The orientation USE VALUE enables angle selection, other orientation possibilities offers AUTO as default, which means no adjustment possible.
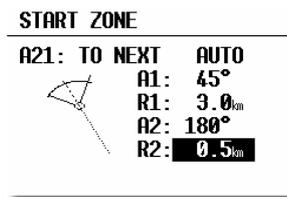
Photo sector and cylinder combination

TO NEXT PNT: orientation to the next TP (AUTO)
R.FROM 1.TP: radius from 1. TP going through start point. The start line is like a circle segment.
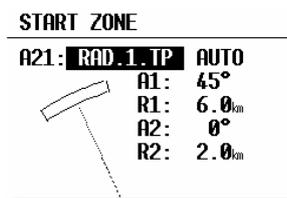
Example R.from 1. TP
A21 doesn't matter, A1 doesn't matter, **R1 circle segment in km**, A2 doesn't matter, **R2 brightness of the sector in km**

FIXED VALUE: free programable rotation of the sector

POINT ZONE

The logic is completely the same with some more choices for orientation:

- SYMETRAL   :   Symetral between two legs (AUTO)
- TO PREV.PNT :   To the previous TP (AUTO)
- TO NEXT PNT :   To next TP (AUTO)
- TO START PNT: To start always (AUTO)
- USER VALUE :   Programmable

FINISH ZONE

Only two settings:

- TO LAST LEG: AUTO
- USER VALUE: Programable

TEMPLARES

Using templates will always bring back FAI photo sector or 500 m cylinder.

```
ZONE TEMPLATE
FAI SECTOR
500m CYLN.
```

IMPORTANT!

All settings described above can be prepared using Lxe PC program (ZONES) and simple transferred to the LX7000.

3.1.2.3   GPS

The pilot is able to set local time for his navigation.

IMPORTANT!

UTC offset has absolutely no influence on time logged in the flight recorder. Flight recorder always uses UTC.

```
SETUP GPS
UTC: +01: 03:47:30
GPS EARTH DATUM:
  WGS-1984
GPS AT SWITCH ON:
  EXTERNAL
```

GPS earth datum is set to WGS 84 and not possible to be changed. GPS at switch on shows the status of GPS engine (internal or external) after switching on the unit. All necessary settings are done in the factory.

3.1.2.4   UNITS

Practically all known units and their combinations can be used in the LX 7000 BASIC.

```
        SETUP UNITS
LAT/LON  D°MM.MM'
DIST. km   SP. km/h
VARIO m/s   HDG true
WIND  km/h
ALT.   m     QNH mb
LOAD   OVERLOAD
```

- LAT, LON: decimal minutes or seconds
- DIST: km, NM, ml
- SP (speed)   km/h, kts, mph
- VARIO: m/s, kts
- HDG: magnetic or true
- WIND: km/h, kts, mph, m/s
- ALTITUDE: m, ft
- QNH: mb, mm, in
- OVERLOAD: kg/m2, lb/ft2

Glider + Pilot + Ballast
OVERLOAD= --------------------------------
Glider + Pilot

Example:

Overload 1.2 means that the take of weight is 20% higher than unballasted.

3.1.2.5   GRAPHIC

The graphic display of the LX 7000 BASIC offers valuable information, selected by the user. In order not to overload the display some care should be taken by enabling of airspace.

SYMBOL

The LX 7000 BASIC graphic supports two sizes of glider symbol in graphic. Rotate ⬍ to select the symbol.

AIRSPACE

This is a very important setting, which allows the pilot to define under what conditions the airspace will appear on the display. The instruments are delivered with airspace **ENABLE.** There are 5 different types of airspace. Each has different type of line to allow visible separation of different zones. The zones can be present all the time (setting ON) or closed by setting OFF. Using setting ON for all kinds of airspace will overload the display, so we offer to use settings, which are connected with zoom.

```
         SETUP AIRSPACE

    AIRSPACE: ENABLE
    ——— CTR ZONES      ON
    ----- R,P,D ZONES 100km
    ......... TMA ZONES   100km
    ——— TRA ZONES      50km
    ——— TIZ ZONES      50km
```

Example!

Using setting for instance **50 km** will make the individuall airspace visible only by zoom 50 km and lower. If the zoom is bigger than 50 km the particular airspace will not be visible.
Factory suggests settings described above.

- CTR.   control zone
- R.P,D   restricted, prohibited, dangerous
- TRA   training zone
- TIZ   traffic information zones
- TMA   terminal zone

APT

The airports are displayed on the screen like symbols with names.

```
         APT GRAPHICS

    APT ZOOM: 50km
    APT NAME:  EMPTY
```

APT ZOOM: 50 km setting will show the airports only having zoom 50 km or lower, if the zoom is bigger than 50 km the airports will disappear completely not to overload the display (available settings ON, OFF, 5,10, 20, 50, 100 km)

APT NAME: The airports are not displayed only with symbols, some letters of the name or ICAO code can be added. The pilot is able to choose between:

- ICAO will show ICAO code of the airport close to the symbol
- 2char. up to 8 char. will display first letters of the airport
- NONE, without letters, only symbol

TP

The same logic is taken by displaying of turnpoints.

```
        TP GRAPHICS
 TP GRAPHICS ENABLE
   type   zoom  name
 T.POINT  50km  NONE
 AIRPORT  50km  NONE
 OUTLAND  50km  NONE
 MARKER   50km  NONE
```

There are four types of turnpoints and each type has different symbol on the screen.

- T. POINT,   simple turnpoint **(landing isn't possible)**
- AIRPORT,   turnpoint with all airport functions
- OUTLAND, turnpoint as an outlanding place
- MARKER, is not a permanent turnipoint, is deleted after the instrument is switched off. It can be used to mark thermals for instance.

IMPORTANT!

The turnpoints marked landable will appear in the NEAR AIRPORT, displayed with corresponding symbols in front of the name (airport from APT, airport from TP and outlanding place).

3.1.2.6   NMEA

LX 7000 BASIC delivers position data in NMEA format to other navigation devices in the cockpit if necessary.

```
      SETUP NMEA
      STANDARD
      WINPILOT
      EXPERTS
      DISABLED
```

All NMEA sentences are not active in default setting, which means the pilot has to activate them if necessary. GGA and RMC are factory set (STANDARD). The pilots using Winpilot should **activate LXWP_ also.** Experts will allow a bright spectrum of NMEA sentences.
The data is available like Tx line on 9P sub D connector marked RS 232, see wiring.

3.1.2.7   PC

The speed of data transfer between LX 7000 BASIC and other devices (PC, LX 20 or Colibri) can be adjusted in this menu. It is very important that both devices have the **same communication speed.**

3.1.2.8   DEL TP/TSK

After **Y** all turnpoints and tasks will be permanently deleted.

3.1.2.9   POLAR

Polars of nearly all gliders arestored in the library. To select them simply rotate ⬍ to the right and the gliders will appear.

```
            GLIDER POLAR

      GLIDER: ASH 25

              a =   1.09
              b =  -1.34
              c =   0.80
```

The parameters a, b, and c of the glider polar can be calculated very simple by pilot, if the glider polar is not found in the library. After LXPOLAR program is started and three points of the polar (Apr. 100 km/h, 130 km/h, 150 km/h) are entered, the parameters are calculated automatically. The LXPOLAR is delivered on the CD together with LXe. There is space for two USER polars (rotate ⬍ to the left).

```
            GLIDER POLAR

      GLIDER: USER 1

              a =   1.90
              b =  -3.20
              c =   2.00
```

Name „user" can of course be replaced with the glider's name.

3.1.2.10   LOAD

Normally the ballast setting is brought to minimum after the LX 7000 BASIC has been switched off. Using setting SWITCH ON LOAD: SET, the load setting will remain the same as the last setting done in the previous flight.

3.1.2.11 TE COMP.

The LX 7000 BASIC offers two methods of vario TE compensation.

- TE tube
- Electronic TE compensation

```
    SETUP TE COMP.

TE:      0007%
TE F.:   6
```
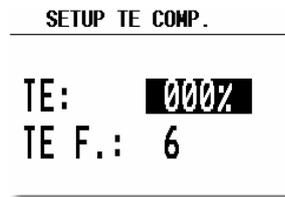
TE setting 0% declares compensation using the TE tube
Using the tube the instrument has no influence on compensation; it depends only on quality of the tube.
TE setting >0% = electronic TE compensation
To adjust TE composition minimum one flight in not turbulent atmosphere is necessary. The procedure is as follows:

- Accelerate up to 160 km/h and keep the speed stable for a few seconds
- Reduce the speed rapidly to 80 km/h

Observe the vario indicator during the maneuver. At the beginning (160 km/h) vario will stay stabile by Apr. –2 m/s. After speed reduction the vario should move toward zero and should never exceed zero. Indication in + shows that the compensation is to low, increase % and opposite.
TEF (filter) is delay of compensation and bigger numbers will increase the delay and opposite. The first test provides using delay 6.
If the static of the glider isn't correct, there is no way to adjust compensation. Having problems we suggest the following test of the static inputs:
Connect the tubes for the electronic compensation and set at 0%. Accelerate to 160 km/h and reduce the speed. Observe the vario indicator. If the needle is moving at first more into minus and after that towards zero, the static of the glider is not correct and there is no way to provide a successful el. TE compensation.

3.1.2.12 INPUT (Speed command external switch)

The LX 7000 BASIC has input for an external speed command switch. Using the external switch it is possible to change over manually. SC INPUT setting defines status of the external switch which activates speed command. ON means closed switch will activate speed command and vice versa.

```
    SETUP INPUT

SC INPUT:    ON
STALL W.:    070 km/h
```
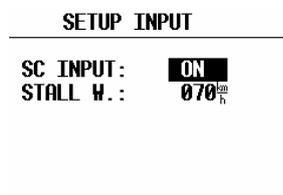
An external device called stall warning can be connected to the LX 7000 BASIC. The indicated speed, to activate the alarm can be set under STALL W.
The LX 7000 BASIC is equipped with an external temperature sensor. Temperature ON will enable temperature measurement and TEMP. OFF allows adjusting (by user) the temperature precisely.
The wiring of LX 7000 AU is equiped with an input marked **VARIO PRIORTY**. Activation (closed) of this feature will cause a change ower to vario emmediatelly.

3.1.2.13   LCD IND. (LCD – vario indicator)

The LCD vario display is an integral part of the LX 7000 AU and has fix address INDICATOR 1. Secondary units can be connected via 485 bus like options. Using bus, generally an unlimited number of secondary devices can be connected to the LX 7000 BASIC. The unit delivers 4 different data sets for the indicators, that means maximal **4 indicators are able to indicate different** and the rest of **them are simple repeaters.**
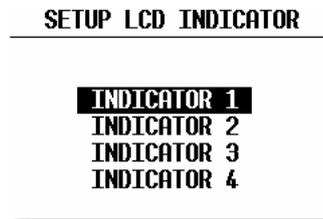
- Needle
- Two numerical displays
- Diverse symbols
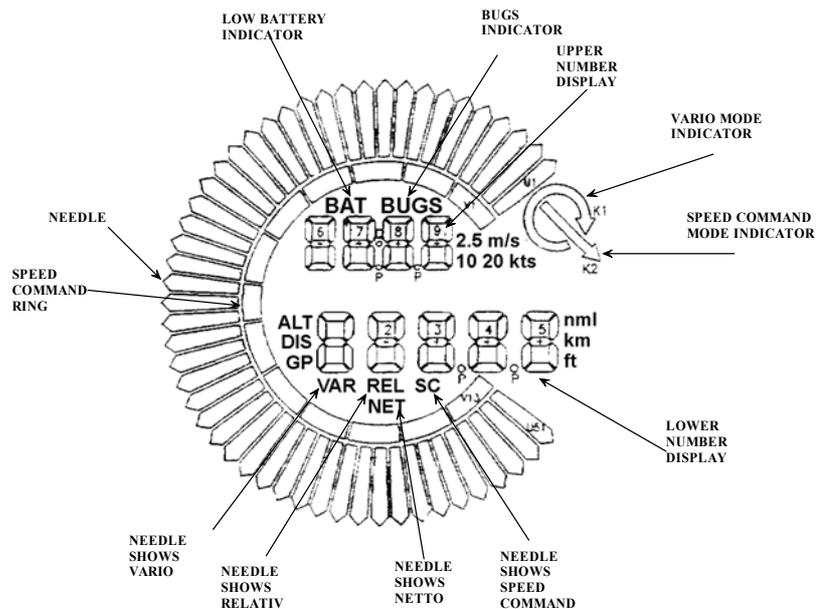
- Needle
- SC Ring   **Always** SC indicator, regardless of mode.
- Upper Number Display
- Vario Mode Indicator
- Lower Number Display
- Netto
- Relative
- SC
- GP

Each external indicator has a **DIP switch on the backside.** The position of the switcs defines which data string will be taken like actuall.

SW 1 ON	Indicator 1
SW 2 ON	Indicator2
SW 3 ON	Indicator3
all OFF	Indicator4

All delivered indicators are default set to **position 1** (will repeat the data of the LX 7000AU indicator, if not changed)**.**
The pilot is able to define the readings of individual indicators by himself, using following menu.

```
    LCD INDICATOR 1
VAR.NEEDLE: VARIO
SC NEEDLE:  SC
VAR.U.NUM.: INT.
SC U.NUM.:  INT.
VAR.L.NUM.: ALT.
SC L.NUM.:  DIST.
```

Needle and two numerical displays are programmable. All settings should be done for vario and speed command mode **separately** (VAR NEEDLE =needle in vario mode, SC NEEDLE is needle in SC mode).

Needle settings:

• Vario, SC, NETTO, RELATIVE (netto – 0.7 m/s),

Upper digital display:

• Integrator, time, flight time, leg time

Lower digital display:

• ALT (NN altitude), distance, GL DIF. (final glide altitude difference), SPEED (TAS), LEG S. (speed on leg).

3.1.2.14 COMPASS

This unit is optional and has to be ordered extra. Power and data are connected via standard LX 7000 BASIC 485 bus. Without a compass unit connected, the COMPAS setting is not active, the LX 7000 BASIC will recognize it automatically. Compass is used to deliver mg. track to the LX 7000 BASIC. Having mg. track an additional wind calculation method can be used.

3.2 Navigation functions

The LX 7000 BASIC has the following nav. functions:

• GPS Status and coordinates
• Near Airport
• APT, Airport
• TP, Turnpoints
• TSK, Task
• STATISTICS separately during the flight and after flight

All mentioned functions can be selected using ⇔.

3.2.1 GPS page

There are no settings possible in this page.

Battery volt. ind.11V empty

E GPS 3D   SAT = 6

N 46°33.62'
E 015°13.62'
ALT. 257m
TIME:14:29:16
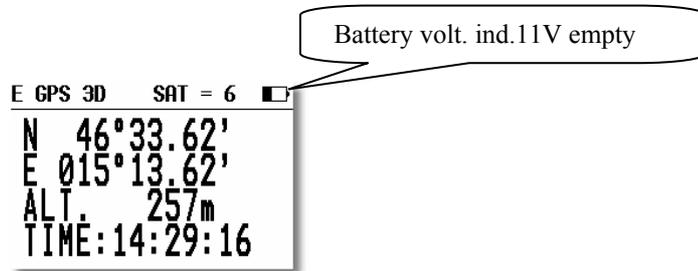
E in front of GPS status display shows that an external GPS signal in NMEA form is required.

Rotate ⬍ and altitudes in m and ft will appear on the same screen.

Stop watch can be activated and deactivated under following procedure:

- Press START status STOP: 0: 00
- Press START status RUN: 0:12
- Press START status STOP: 0:50
- Press START status STOP: 0:00   Reset
- Press ENTER   TIME: 11:56:32 Time again

3.2.2 NEAR AIRPORT

The nearest airports will be shown using this mode. The airports are separated under distance and simple press on ENTER will change over to APT mode and all nav. features will be immediately present. To select the airport use ⬍ .

Outlanding place

Airfied from TP database

Airfied from APT database

3/16   NEAR AIRPORT

AP 23:07   108°   1km
BR 03:05   250°   1km
LUCHOW REHBEC 200° 17km
NEUSTADT-GLEW 049° 34km
SALZWEDEL   171° 38km
KLEIN GARTZ   171° 38km
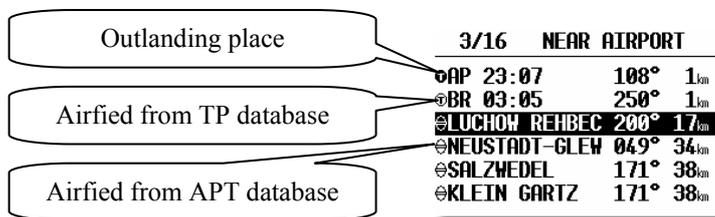
IMPORTANT!

Not only airports are in the library, but all **landable turnpoints too.** The airports and landable turnpoints are displayed with different symbols in front of the name. For more information see paragraph turnpoints.

3.2.3   APT Airports

This is one of three main navigation modes (APT, TP, TSK). To change the mode simple rotate ⇔ or use GO TO function. The first page shows the basic navigation data (bearing, distance, ground track and vario average (AVG) or netto (NET in SC). Additional information will follow in three more nav. pages activated using the ⬥ . The airport memory of LX 7000 BASIC has a capacity for approx. 5000 airports. The airport data can't be edited in the instrument; all necessary updates should be done using PC. The database used in LX 7000 BASIC is Filser licensed Jeppesen database. The database is not free, that means an update is possible only after getting a code. The code is available through Filser Electronic only and depends on the database version and serial number of the LX 7000 BASIC. The database can be downloaded from the Internet using the following addresses:

www.filser.de
www.lxnavigation.si

3.2.3.1   Navigation in APT

There are four navigation pages and the first one has the following structure.
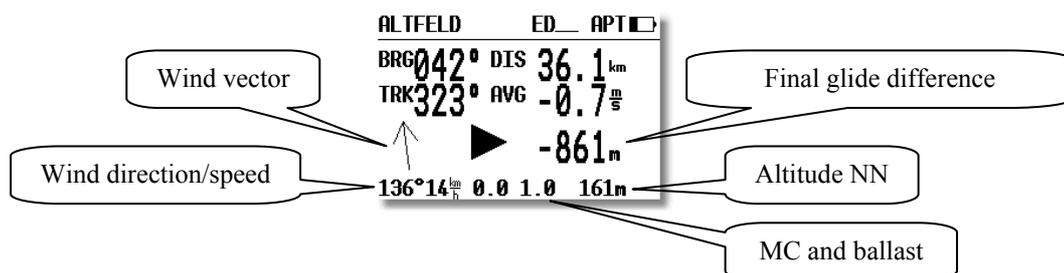
The airport names are normally displayed using 8 characters, after pressing **START 12 characters will appear.**

IMPORTANT!

TP and TSK have the same basic navigation pages as APT.

The arrow (Dir. Indicator) will show the pilot where to turn (left or right) to proceed to the airport.
After rotating ⬥, graphic page will appear. The same page can be found in TP and TSK too.
The airports will be present with symbols and short names or ICAO corresponding to setting in 3.1.2.5.
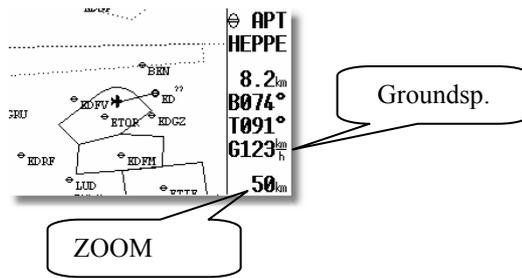
The glider symbol is all the time in the middle of the screen and the map is moving. To change the ZOOM simple rotate the ZOOM knob left or right. Following nav. page can be disabled like Nav. page 3.
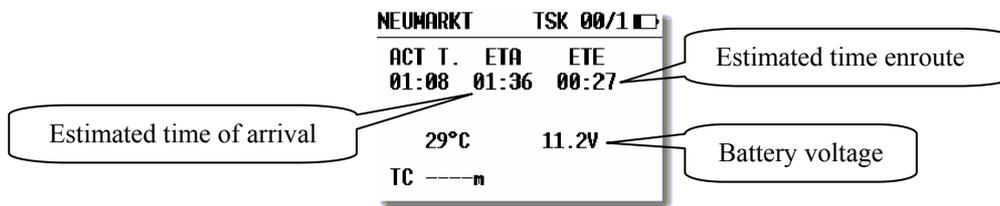
ETA estimated time of arrival

ETE estimated time enroute

If there is no way to reach point (difference BRG/TRK more than 90°), both times will be replaced with stars.

The last page shows the pilot some important airport data.
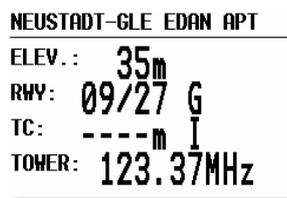
The traffic circuit is defined like altitude and orientation (N, E…). Orientation I means that it hasn't been defined. RWY extension shows runway surface, G like grass and C like concrete.

3.2.3.2   Airport selection, team function and wind calculation

After ENTER an edit menu will appear.

3.2.3.2.1   Airport selection

```
        MENU APT
        ████████
        SELECT
         TEAM
         WIND
```

There are two ways to select an airport. The first direct way is using of ICAO code input. After code input the airport is selected.

```
    APT SELECT              APT SELECT
 ICAO: EDⅩⅩ            ICAO: EDDM
       GERMANY               GERMANY

                        MUNICH
```
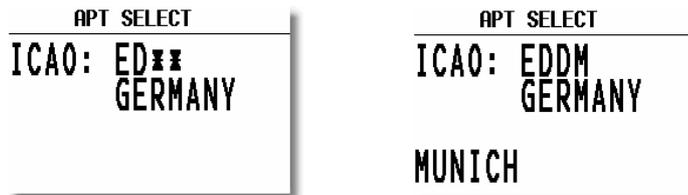
By **mistake use START** button (or ZOOM) to step back. By unknown ICAO the indirect way should be used. Simply confirm ICAO with ESC and select the state in which the airport is situated (✦).

After the state is selected four stars are to be replaced with first four letters of the airport. All airports with the same first four letters will be shown, use ✦ to find the right one.

```
        APT SELECT
 ICAO: EDBM
       GERMANY
 APT:  MⅩⅩⅩ
```

If you input less than four characters the offer of the airports will be bigger. Confirming all stars with enter or simple after **ESC** all airports of the state will be present.

3.2.3.2.2   TEAM function

This special function is developed for the pilots flying in the team. Sometime they loose visual contact and using the Team function they are able to locate each other in a very simple way. To be successful **both pilots have to select the same point** (APT, TP or TSK). The pilot who is ahead has to explain his bearing and distance **to the selected point by radio.** The second pilot has to activate Team function (enter) and input the distance and bearing given by his friend.

```
        TP TEAM
BRG:  347°
DIS:  24.1 km
TO PINNOW
```

EXAMPLE!
347° and 24,1 km are data given by the leading pilot.

After input and ESC the instrument will change over into normal **TP navigation page** and the navigation data will show where the leading pilot is.

```
TP TEAM            TP
BRG349° DIS 10.0km
TRK093° NET +0.0 m/s
  ○          -294m
WAIT 1  0.0 1.0    0m
```

Team f. indicator

The team function is deactivated **after a new TP is regular** selected.

3.2.3.2.3   WIND calculation

The LX 7000 BASIC is able to calculate wind (direction and speed) under 5 methods all the time. Another method (COMPASS) is available only after an additional compass unit is connected to the LX 7000 BASIC bus. To change the method of calculation, use this menu as follows.

```
    SETUP WIND
WIND: GS
  +00°   309°
  +00 km/h   38 km/h
```

GS is the simplest method. The calculation is based on ground speed changes caused by wind during the climbing. To get the first result a minimum of two full circles are necessary. The message **WAIT2 or WAIT 1**will inform the pilot how many circles should be done to get the result. It is very important **to keep the speed constant** (during the climbing) as much as possible to get real results. The pilot is able to adjust the wind using manual corrections. **POS is** sometimes the best method. It is based on position offset caused by wind during the climbing. To get results 6 turns should be done (**WAIT 6**).

COMB is based on special algorithms. The inputs are groundspeed and TAS. The algorithms will calculate the wind if the **glider is slowly changing his track** (not exactly straight flight) or by climbing.

COMPON is delivering only **wind component** (head or tail wind). The calculation is simply based on difference GS-TAS. It works exclusively during straight flight.

FIX is not a real calculation it allows the pilot simply to input the wind.

COMPASS wind calculation method is available only with external compass device. On how to use the unit see COMPASS manual.

3.2.4   TP (turnpoints)

The LX 7000 BASIC has memory to store up to 600 turnpoints. The turnpoint name can have max. 8 characters (letters or numbers). The menu structure is the same like by APT that means four pages. To add a turnpoint into the database select one of these four ways:

- Manual
- Copy from APT
- Data transfer from PC, LX20, Colibri   (well known DA4 format)
- Memorizing of actual position

3.2.4.1   TP select

The procedure is similar to the procedure selecting APT. After pressing ENTER menu for SELECT, EDIT, NEW, DELETE, TEAM and WIND will open. To select turnpoint simple replace stars with the first letters of the TP.

IMPORTANT!

The LX 7000 BASIC is able to sort the turnpoints under distance too (definition in setup). Using sorting by distance the **nearest TP will** appear after selection (all stars confirmed with ESC). To search for the TP use ✦ and confirm with ENTER. Default setting is sorting by alphabet.

It is also possible to select TP **using ZOOM** selector. It works exclusively from **the first page.** To change the TP simply rotate the ZOOM selector.

3.2.4.2   TP EDIT

Using this function the pilot is able to change TP data any time. The turnpoints in LX 7000 BASIC have four attributes. Using attributes the turnpoints will appear in the graphic screen marked with special symbols.
The four different types of turnpoints are as follows:

- T.POINT   normal TP not landable
- AIRFIELD   landable airfield
- OUTLAND   landable outlanding place
- MARKER   not landable (will disappear after switching OFF)

TP having **airfield and outland attribute are landable** and shown in the NEAR AIRPORT mode. In front of the name the pilot will find the symbol to recognize what kind of landing place it is (see NEAR).

To start EDIT press ENTER.

```
        TP EDIT
  BR 03:05  T.POINT
  LAT.: N  53°09.52'
  LON.: E 011°13.00'
  ELEV.: 0000m
```

Name, attribute, coordinates and elevation can be altered.

3.2.4.3   TP NEW

There are more possibilities to add a new TP. After ENTER on NEW the procedure is started.

```
        TP NEW
     Question:
   (?) COPY APT
       DATA?N
```

After **Y** the well-known selection of an airport will follow. The result will be a new turnpoint copied from APT database. After **N** manual input of coordinates, name, attribute and elevation will follow.

```
        TP NEW
             T.POINT
  LAT.: N  00°00.00'
  LON.: E 000°00.00'
  ELEV.: 0000m
```

3.2.4.4   TP delete

After activation of DELETE the TP will be deleted definitively.

3.2.4.5   TEAM

The same as described in APT.

3.2.4.6   WIND
The same as described in APT.

3.2.4.7 TP QUICK (memorizing of actual position)

Pressing START key in TP (exclussively) will start the procedure**.**

```
        TP-QUICK                    TP-QUICK
   AP 06:11  MARKER           02100613  MARKER
   LAT.: N  53°10.95'         LAT.: N  53°10.95'
   LON.: E 011°22.74'         LON.: E 011°22.74'
   ELEV.: 0000m               ELEV.: 0000m
```

The names of such points are offered in two different forms. AP and TIME or date and time (02100613). The form depends on setting in setup after password (TP). All data can be edited immediately and stored. This procedure is useful to memorize convenient landing places, thermals etc…By default settings these points have MARKER attribute.

3.2.5 TSK (task)

The LX 7000 BASIC task consists of maximum 10 turnpoints. The capacity is 100 tasks. Flying a task will offer following benefits:

- Accurate task statistics
- Simple navigation
- Automatically change over to next TP after confirmation
- TSK shown in graphic
- One step of ZOOM more (full task)

The menu structure is similar to the APT and TP. The pilot is exactly informed about departure, TP confirmation and finish line. Graphic display is very useful indeed.

```
   THALMAES    TSK 00/0
   BRG262° DIS  1.5km
   TRK104° NET +0.0m/s
       ○        -611m
   WAIT 2  0.0 1.0    0m
```

And after ⬍

```
                    │T00/0
                    │THALM
                    │
                    │B039°
                    │ 1.0km
                 ×  │T222°
                   ○│G 75km/h
          INSIDE    │  10km
```
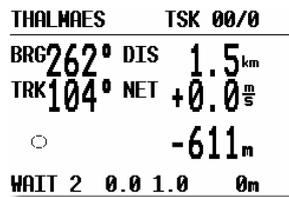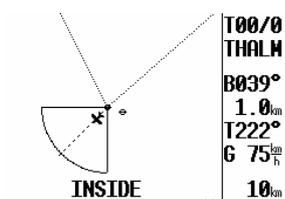
Approaching to the TP, NEAR message will inform the pilot that he is closing on the turnpoint. After the **INSIDE** message is displayed, the pilot is definitively sure that he has reached the observation zone (for inst. photosector). The tasks are numerated from 00 to 99 and the turnpoints building a task from 0 up to 9. Point 0 is always start point (departure).

3.2.5.1   TSK select

All memorized tasks can be selected using the select procedure. The procedure is started after choosing the SELECT and confirmed by ENTER.

```
         TSK SELECT
  TSK SELECT: 11

  0 GOZDNIK   5 NOT PROG
  1 RATECE    6 NOT PROG
  2 SEMIC     7 NOT PROG
  3 HODOS     8 NOT PROG
  4 CELJE/AD  9 NOT PROG
```

To select a task rotate ⬍ and confirm with ENTER.

3.2.5.2   TSK edit

The active TSK can be edited at any time, on the ground or during the flight.

```
         TSK EDIT
  TSK 00:    202.9km  CP

  0 THALMAES  95.1km 044°
  1 101WEIDE  89.6km 235°
  2 ROTH ROT  18.3km 156°
  3 THALMAES
  4 NOT PROG
```

After the procedure is started all points of the TSK are shown. After choosing **invert Y** the task will be inverted. m. Next step is **CP** activation. After set **(CP)** the final glide will be calculated around the last turnpoint to the finish. That means the final glide calculation is ready before the last turnpoint. To edit, select turnpoint with ⬍ and press ENTER.

```
         TSK EDIT
  TSK 00:   235.4km  CP

  0 AbdszlkC  [SELECT]  o
  1 AlmsfztR  [INSERT]  o
  2 ZrcRlwvS  [DELETE]
  3 NOT PROG
  4 NOT PROG
```

- after SELECT new TP will replace the previous
- after INSERT a new TP will be inserted one position higher
- after DELETE the TP will be deleted from task

3.2.5.3   TASK new

To build a new TSK an empty TSK should be selected (all points NOT PROG). After COPPY an already existing task could be copied and edit after, or a completely new task could be created using selection of turnpoints.3

3.2.5.4   DECLARE

The function is by LX 7000 BASIC not very important having a not approved flight recorder for IGC flights. Having in mind that LX 7000 BASIC is able to communicate with Colibri and LX 20 will make this function more important. The declaration procedure substitutes the old method of making pictures of the black board and clock. The declaration should be done before take off in any way, during the flight is this function not active. Having done the declaration in LX 7000 BASIC, is possible arrange WRITE FLIGHT INFO and transfer the declaration to the **LX 20 or Colibri directly**.
All known methods (select, insert, and delete) can be used to change the declaration. **Changing of declaration will not change the TSK.**

Normal procedure:
- Prepare TSK in EDIT menu (you will need it for navigation)
- Press ENTER on declare and leave declare using ESC
- Transfer data to Colibri or LX 20 (Flight Info)

3.2.6   Statistics

This mode is exclusively used to inform the pilot about his actual flight. There are two levels of statistics during the flight. Flight statistics is always active; the task statistics will be active after a task is started. On the ground only the logbook is available.

3.2.6.1   Flight statistics

The following data is available during the flight only. After STATISTICS is selected the flight statistics data will appear on the LX 7000 BASIC display.
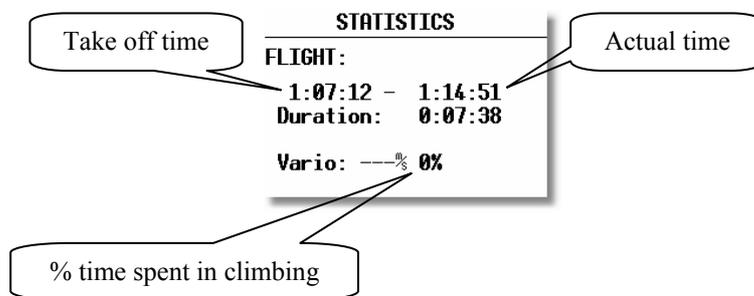
3.2.6.2   TSK Statistics

This kind of statistics is present after the task is started (see paragraph Fly LX 7000 BASIC). Rotating the ♦ will display statistic data for the individual legs.

Time means TP confirmation time and is normally not present before TP confirmation. For the completed legs the time is displayed.

Rotating ♦ will show statistics for all completed legs and at the end there will be TSK statistics till actual position.

3.2.6.3   LOG BOOK

This kind of statistics is available **only on ground**. The logbook shows the flights under date, take off and landing. The logbook will appear apr. 3 minutes after landing and this is the **signal that the flight is really** finished.

```
           LOGBOOK
10.02.02  7:36  7:47
10.02.02  6:24  7:31
10.02.02  4:30  5:53
10.02.02  3:02  3:12
10.02.02  2:37  2:59
10.02.02  2:22  2:31
```

3.2.6.4   Statistics after flight

The LX 7000 BASIC offers flight statistics and flight analyses. To start the procedure select the flight from logbook and press ENTER.

```
Flight: 1  15.02.02

PILOT: ERAZEM._POLU
GLIDER: ASH_25

DURATION:   2:19:47
16:49:07 - 19:08:54

TASK: 74.5km
```

The distance will appear only after correct declaration.

3.3 Variometer

All analogue signals of LX 7000 BASIC (altitude, speed) are derived from high quality pressure sensors, no flask is necessary. The vario signal is derived from the altitude signal. All signals are temperature compensated. Vario and speed signals are altitude compensated as wel. A special device based on LCD has been developed for the vario indicator. Not only vario, but also a lot of additional information is displayed on the unit. The unit is programmable, that means the pilot is able to preset which information is important for him.

3.3.1   Vario

* range   5,10 and 2.5 m/s   10,20 and 5 kts
* six time constants   0,5s to 5s
* netto vario   lift or sink of air mass only
* Relative Vario   lift or sink during circling (does not depend on speed)

To compensate the vario there are two ways. The electronic TE compensation based on speed changes with time and the compensation with TE tube works the mechanical way. Using tube, the LX 7000 BASIC has absolutely **no influence on compensation.**

IMPORTANT!

To use electronic compensation connect **TE-Pst to static pressure source of the glider**
To use TE tube **connect tube to TE-Pst**

3.3.2   Altimeter

The altimeter of LX 7000 BASIC is temperature compensated from -20ºC up to + 50ºC. The altimeter is calibrated from 0 to 6000m, but indication goes up to 8000m. The displayed altitude is always NN (QNH) after correct input of airfield elevation (set alt.) after switching ON.

3.3.3   Speed command

Speed command is a very useful help to optimize the speed. There are many visual indicators (see LCD Vario). After the instrument changes to speed command mode, the audio will change and inform the pilot about his speed. Not to mix vario audio and speed command audio some special features were developed:

*   Continuous audio signal in +
*   No audio by correct speed (dead band).

3.3.4   Final glide calculator

The final glide calculator calculates the **final glide altitude difference** to the selected point (APT, TP, and point of TSK). Only when using CP in TSK, it will calculate around the last turnpoint to the finish. Indication + will inform the pilot that the glider is above the final glide and opposite. The final glide dierctly depends on **MC setting, wind, bugs and safety altitude.**

IMPORTANT!

Elevation of the landing place is incalculated automatically. It is very important o use correct TP database.
Using safety altitude (reserve) the final glide indicator should also show 0m-**difference**. The only distinction is that the glider won't arrive at 0m, but at **safety altitude**. In that case the final glide is simply shifted higher.

3.4 Flying with the LX 7000 BASIC

It is very important that both, the pilot and the instrument are well prepared for the flight. Doing that, flying with the LX 7000 BASIC will make pleasure and be successful.

3.4.1   Preparation on ground

A good preparation on the ground will not take a lot of time, but will reduce frustration during the flight. After switching ON the program version and data base version will appear for aprox. 20 seconds. This time is used to stabilize the sensors.

3.4.2   SET ALT (take off elevation input)

We all know that air pressure changes all the time. After switching ON, the instrument doesn't know the elevation and the elevation should be put in.

<div align="center">

SET ALT: 0185 m

</div>

The pilot has to input his **take off elevation.** The instrument will offer the last airport which was on the top list of NEAR AIRPORT, if it is OK, the pilot simply has to confirm the offered altitude. QNH setting is not mandatory (ESC to over jump).

<div align="center">

QNH:-------mb

</div>

After input of QNH the pilot will be able to offset his altimeter instead of pressure changes during the flight. This will make his flight and specially his final glide safer. The best way to get actual QNH is meteorological service on the airfield. The input procedure is as follows:

- Rotate ⬍ and 1013 mb will be offered
- Use ENTER and ⬍ to adjust actual value

3.4.3   Preflight check

It is hardly recommended to check all settings in setup (only before password) especially if more pilots are flying the glider. All parameters will remain unchanged after switching off, the only exceptions are:

- QNH
- BUGS
- Ballast if not defined like **set** in setup LOAD

IMPORTANT!

When attempting an FAI badgeflight do not forget to provide „TASK DECLARE" procedure and transfer Flight info to Colibri or LX 20 if connected to the system.
Declaration during or after the flight is not possible!

3.4.4   How to start the TSK?

Being inside **observation zone** (photosector, beercan etc…) the pilot is able to start the task by pressing **the START** button briefly.

before departure   after departure
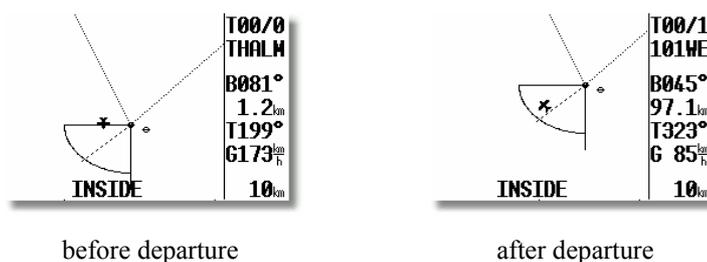
Immediately after the start is accepted the **navigation data will change to TP 01**. This is the most important signal that the task has been started.
The pilot is able to **restart the task** at any time. After task start edit menu is increased and the RESTART item is on the top now.

IMPORTANT!

After restart the task is ready **to be started again**. Restarting of task **has absolutely no influence on DECLARATION and logging.**

It is also possible to start the task outside of the observation zone. The pilot has to hold START so long that the navigation will change to TP 01 (aprox. 6 seconds)

3.4.4.1   TP confirmation

The LX 7000 BASIC will detect „inside" **overhead TP automatically** and will change over to **next TP** .
If the TP will not be reached there are two ways to avoid the TP.

* EDIT task and delete TP (recommended method)
* Hold START so long that the navigation (aprox. 6 sec.) will change to next TP and simple **overjump the not reached TP**.

3.4.4.2   TSK END

After reaching the finish zone the task stops automatically. A very typical message **TSK END** will appear.
It is possible to start a new task (during the flight) after TSK END, using the RESTART procedure.

3.4.4.3   Procedure after landing

FAI regulations requires a straight line by barogram at the beginning and at the end. This is the reason that we recommend not to switch off the LX 7000 BASIC (will alredy switch off LX 20 or Colibri) immediately after landing.
A very typical signal that the procedure is finished, is **logbook instead of statistics page.**
If the unit is accidentally switched off immediately after landing, there will not be any problems.

3.4.4.4   SIMPLE TASK

Simple task is active all the time **before a regular task is started**. The function is very useful for the pilots who do not fly a task, but are flying from TP to TP (the same is flying to APT). Simple task will bring similar statistics like real task and the same holds true for flight evaluation using PC.
Immediately after take off, the current position is taken like start point. Reaching believable TP or APT (has to be selected in TP or APT) the point is taken like confirmed TP and so on. The radius to define confirmation is set by pilot in „NEAR TP". The simple task is growing on simple collecting points. The flight statistics is practically the same like by regular task. **TSK S** informs that no regular task is in progres.

```
        STATISTICS
 TSK S/1: THALMAES
 Time:  0:52:19
 Duration:   0:08:11
 Speed: 126km/h
 Vario: ---m/s 0%
 Engine: -'--"
```

After RESTART procedure the simple task will be restarted and **actual position** will be taken as a new start.

4 PC and flight recorder communication

LX 7000 BASIC is able to communicate with:
* PC (LXe Program, SeeYou, Strepla and CAL)
* LX 20
* Colibri
* Posigraph

The following data can be transferred bi-directional (LX20, Colibri, and Posigraph)
* TP and TSK data (DA4)
* Flight information

Using combination with flight recorder the pilot is able to prepare his flight at home, transfer the data into flight recorder and on the airfield simple use the flight recorder like data source for LX 7000 BASIC.

4.1 Communication with PC

The communication is established via RS 232 port. To communicate with PC a special cable is delivered with the LX 7000 BASIC (SUB D 9P and 5P round connector).

The CD with following programs is delivered together with LX 7000 BASIC:

* Lxe Windows program for communication, basic flight evaluation and database management
* Manuals for practically all LX instruments incl. Manual for **Lxe**

Some Windows CE based programs has been developed to transfer data from and into LX 7000 using PDA (IPAQ..) units. One of them is "Downloader from FlyWithCE", available under www.FlyWithCE.com
Using Lxe following data exchange can be realized:

* Read flight recorder
* Read da.4 (read TP and TSK)
* Read flight info
* Write da.4 (write TP and TSK)
* Write flight info (incl. declaration)
* Write APT
* Write airspace
* Write zones (confirmation sectors)
* Read zones (automatically done after zones activation in LXe)

Very useful function is transfer of confirmation procedures. The pilot is able to prepare departure, TP and finish procedure using Lxe and to transfer them into LX 7000 BASIC. Use menu **ZONES in Lxe.**

Lxe can also be used for data base update. The data base update is not free (Europe). To provide update the user needs an **update code**. The code is available by **Filser Electronic**. The update code for database, which is delivered with the instrument, is written on CD cowers.
The USA data base updates are available by LX Navigation.

How to realize CONNECT status?
* LX 7000 BASIC / SETUP – TRANSFER
* PC – run PC program LXe)
* LX 7000 BASIC ENTER and wait some seconds till CONNECT appears

CONNECT indicates that both LX 7000 BASIC and PC established connection and data transfer can be started. Having problems with connection check the following:

* **close all other applications occupying com port (on PC)**
* **check cable and connector**
* **check com speed**
* **disconnect LX20, Colbri or other GPS devices, PDA, occupying communication port**

4.2 Communication LX 7000 BASIC – LX 20, Colibri

LX 7000 BASIC is able to exchange data (bi-directional) with LX 20, Colibri and Posigraph. The following data can be transferred:

- DA.4 files (TP and TSK)
- Flight info

To establish data transfer use following steps:

STEP	LX 20	LX 7000 BASIC
1	**Main MENU / FLIGHT RECORDER**	**SETUP / TRANSFER**
2		**ENTER**
3	**READ or WRITE key**	**Select transfer function (read/write)**
4		**ENTER**

LX 7000 BASIC acts like a master and will force LX 20 to follow his commands

Transfer functions (LX 7000 BASIC)

READ TP/TSK
READ INFO
WITE TP/TSK
WRITE INFO

Read means, LX 7000 BASIC will read data from LX 20 and opposite

Communicate with Colibri is much more simple. The Colibri will establish CONNECT automatically after pressing ENTER on TRANSFER by LX 7000 BASIC. The CONNECT status is signaled by a sound from the Colibri. Having activated some **NMEA sentences on LX 7000 BASIC** use following procedure to establish connection.

Colibri	LX 7000 BASIC
Off	Transfer/Enter
Off	Waiting connection
On (connect)	Transfer menu

5 Installation

The LX 7000 BASIC Digital unit needs one standard 80-mm cutout. The Analog /Vario needs one standard 57 mm cutout.
Both units are extremely short (110 mm) and therefore not problematically to be installed in any glider.
Three pressure connectors are on the rear side of the Analog/Vario unit. A label on the rear side shows their functions.

- Ptot =   Pitot, Total pressure
- TE =   TE probe
- Pst =   Static

Using electronic compensation:
- TE/Pst   Static
- Pst   Static
- Ptot   Pitot

Using TE tube
- TE/Pst   TE tube
- Pst   Static
- Ptot   Pitot

IMPORTANT!
Having changed Ptot and Static, there will be no integrator (average climbing) indication during the flight

TheLX 7000 BASIC digital unit is connected to the power via 15 SUB D connector and the analog part is powered from the digital unit All connectors re well marked, so there is no reason to be installed wrong. There is **no fuse in the instrument** so it is **VERY IMPORTANT** to use an external fuse (2A). For power supply extension use min. 0.5 mm² cables.
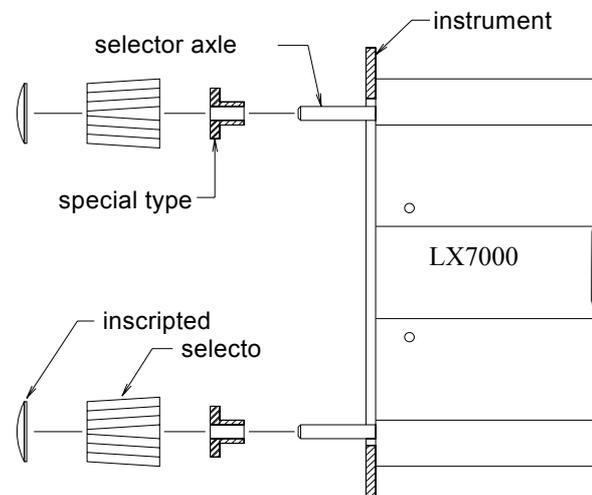
Installation of the LX 7000 BASIC

- Prepare the cutouts in the instrument panel according to the drilling plans.
- Remove the covers from the four main selectors on the LX 7000 BASIC digital unit.
- While holding the selectors, open the screws, which are now visible with a screwdriver. Now the selectors may be removed.
- Remove the four special type screws.
- Now position the LX 7000 BASIC in the cutout in the instrument panel.
- Fasten the LX 7000 BASIC with the special screws.
- Now the turn knobs and the covers may be fastened again.

5.1 Wiring

5.1.1   Wiring (standard version)

LX 7000 ANALOG UNIT V1.0 Wiring

LX 7000 V1.0 DIGITAL UNIT Wiring

> **Important!**
>
> Transferring data LX7000 ⇔ Colibri or LX20 (TP & TSK, flight info), **disconnect** PDA unit (WinPilot).
>
> Reading flight recorder from LX7000, disconnect PDA unit (WinPilot) and LX20 or Colibry **obligatory**

5.1.2 Wiring (optional version)

LX 7000 ANALOG UNIT V1.0 Wiring

LX 7000 V1.0 DIGITAL UNIT Wiring

LX7000 D (second seat)

485 Spliting Unit (using additional LCD vario and Kompass)

LCD Vario

KOMPASS

LX 7000/LX 500 PC CABLE

WinPilot

LX7000/WINPILOT cable (delivery included)

LX20

LX7000 / LX20 Communication Cable (delivery not included)

Important!

Transferring data LX7000 ⇔ Colibri or LX20 (TP & TSK, flight info), **disconnect** PDA unit (WinPilot).

Reading flight recorder from LX7000, disconnect PDA unit (WinPilot) and LX20 or Colibry **obligatory**.
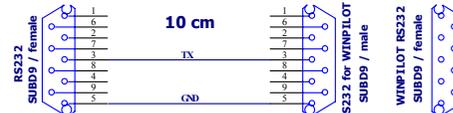
5.2 Tree-structure-Diagram
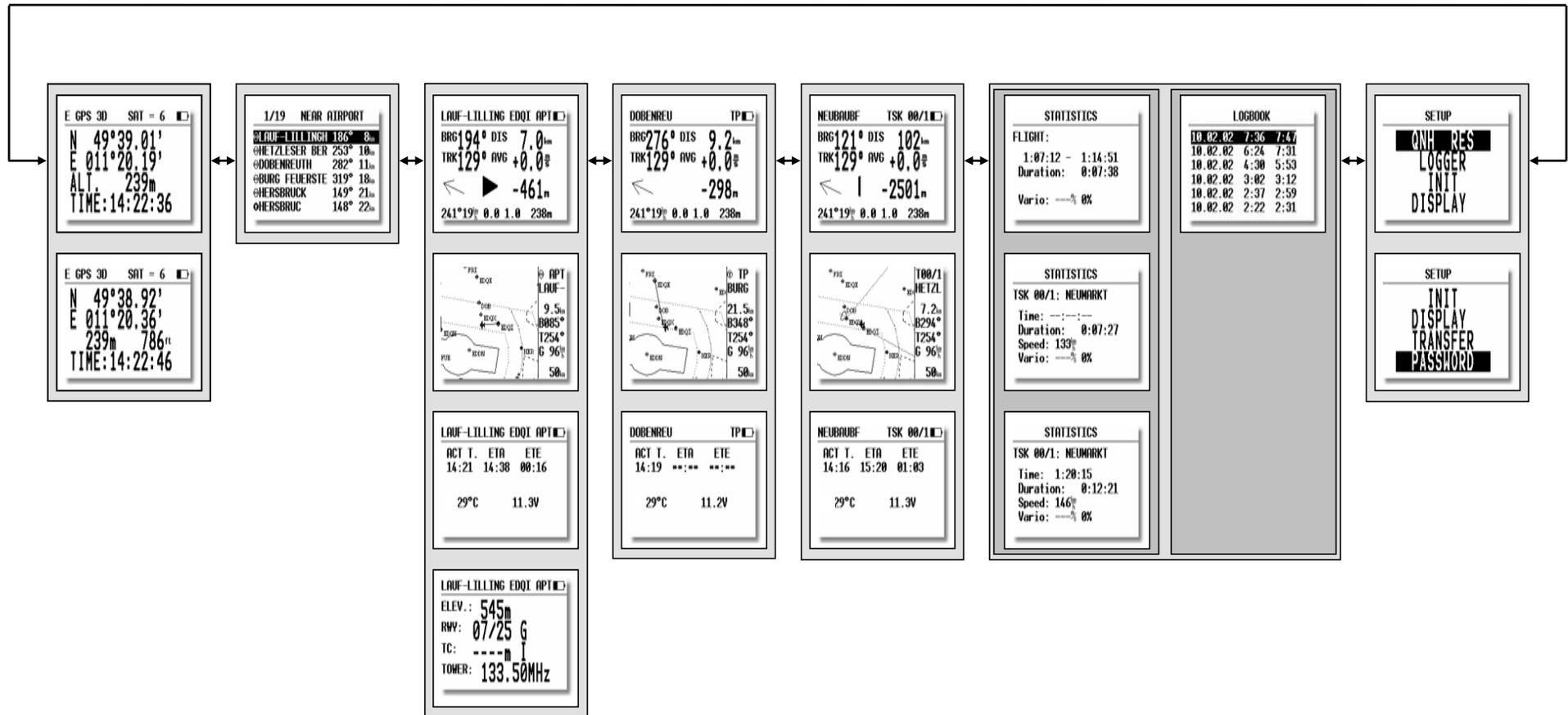
6 Passwords

96990   **System parameters**
55556   **External NMEA input (internal GPS is disconnected)**
              The function is active till switching OFF or new input of 5556

99999   **Delete flight recorder (all flight recorder data will be deleted)**

7 Revision history

Version 1.0	*New done*

8 Basic navigation terms