

USER MANUAL

	S-11	Grion	wp km 11
S-RIETI TORRE 180 - 160 - 140 - 140 - 140 - 140 - - - - - - - - - - - - -	Wp Km 4 5 mt 1 5 mt 0 LD 6 − 0 LD 6 − 0 LD 6 − 1 2 2 0 W 1 mt 1 E L/0 8 34 km 5 mt 6 10 mt 1 L/0 8 34 km 1 km	6.5 700 690 225 28 39 user 381 319 040 :A 4 5:64k	nt 730
Customer Address Glider type			
	Serial number		_
	Version	4.1.3	_
	Date		

N.T New Technologies S.r.l. - Via A. Colombo nº 130 - 21055 Gorla Minore (Va) - www.glider.it



Controls
Remote Stick Control
Easy Display
Menu mode4
Menu Chart4
Instrument mode
Vario Mode8
Netto Mode8
Vario Menu8
Map Mode
Map Menu10
Power up
EasyDisplay configuration
EasyDisplay Setup11
Polar Setup13
FlightRecord configuration13
Waypoint selection
Airspace selection
Map selection
Task setting
WAYPOINT16
R TASK16
AA S T17
F.A.I19
Pre-Flight
Flight
File management
Warnings
Switching off



Controls

The primary components of the user's interface of EasySoft are the "Remote Stick Control" (Figure 1) and the "EasyDisplay" (Figure 2).

Remote Stick Control

Arrow keys and OK button

They are associated to different functions depending on the context, and are typically used to move among menus and confirm selections.

Button F1

It is associated to the "Instrument Mode" and the "Map Mode".

The Easy Display has the OK button, the arrow

Button F2 It is associated to the "Menu mode".

<u>Button F3</u> It is associated to the "GOTO" function (see WAYPOINT).

keys and the ON and OFF buttons.

Button F4

Easy Display

Pressed to indicate that the waypoint has been reached and passed (see TASK).



Figure 1 - Remote Stick Control



Figure 2 - EasyDisplay



Menu mode

The arrow keys $(\hat{a}, \hat{a}, \Leftrightarrow, \Leftrightarrow)$ are used in this mode to move between the different menu items, and the OK \notin button to access the selected option or the sub-menus, if any.

Menu Chart

PRE-FLIGHT	PILOT NAME LOCAL TIME QNH ALTITUDE MAP AIRSPACE WAYPOINT GLIDER GLIDER ID COMP. ID CLASS			
<u>FLIGHT</u>	BUGS ALT. MARGIN ALT. FILTER VARIO FILTER METER EFF. TIME EFF. REFRESH SC TIME SC FILTER AAST MODIFY TURNPOIN DISPLAY SOUNDING GOTO	T AVG TIME STRAIC MAX.ANGLE VAR FILTER FLIGHT MENU	SHT W.NAME SHT W.NAME T SHT W.NAME SHT W.NAME SHT W.NAME SHT F.A.I.	
<u>NAVIGATION</u>	WAYPOINT	LOAD WP FILE ADD USER WP MODIFY USER WP DELETE USER WP INPORT USER WP EXPORT USER WP NAVIGATION ME CREATE NEW TAS LOAD TASK. TASK MENU	WAYPOINT ORI CYLINDER RAD START LINE LEI FINISH LINE LEI FINISH LINE LEI MAX START SPI MAX.ALTITUDE MAX.ALTITUDE	DER MUS NGHT NGHT ARING EED START TASK
	TASK	A S T CREATE NEW TAS LOAD TASK. TASK MENU A D T A.I CREATE NEW TAS LOAD TASK. TASK MENU	WAYPOINT ORI START LINE LEI FINISH LINE LE FINISH LINE BE MAX START SPH MAX.ALTITUDE MAX.ALTITUDE TASK TIME WAYPOINT ORI SHOW SECTOR MAX START SPH MAX.ALTITUDE MAX.ALTITUDE	DER NGHT ARING ED START TASK DER RADIUS ED START TASK
	MAIN MENU	AVIGATION MENU		





Instrument mode

A pressure of the F1 button visualizes the following image on the screen:



*:When W is 0, wind strength is automatically sensed by the airborne computer. If W is increased (green arrow), or decreased (red arrow), wind is set in km/h with respect to bearing.



Using arrows \Leftrightarrow and \Rightarrow you can position in sequence on the McCready values, audio volume (*vario or netto mode*), ballast and manual wind. Using \updownarrow and ϑ you can change the set values.

The instruments show different information when the stick switch is at $\underline{\text{NETTO}}$ or $\underline{\text{VARIO.}}$

stick switch





Vario Mode

Legend VAR is shown on the instrument when the stick switch is set at VARIO. The pointer with the yellow dot indicates the altitude change rate as a function of the set VARIO FILTER value. The red pointer shows the altitude change average calculated during the last six seconds.



average vario value during time set for VARIO AVG

average VARIO duriing latest thermal or since the beginning of the thermal being worked.

Netto Mode

Legend NET is shown on the instrument when the stick switch is set to NETTO. The pointer with the yellow dot indicates the altitude change rate of the air mass net of the glider altitude change at the flying speed as a function of the set NETTO filter. The red pointer shows the average of the altitude change of the air mass calculated during the last six seconds.



average value of net during time set for NETTO AVG

average VARIO value in latest thermal or since the beginning of the themal being worked

The red pointers provide more reliable indications in turbulent upcurrents.

The blue pointer shows the change trend (plus or minus) of humidity during the latest 20 seconds. An aural warning tone is emitted automatically if humidity increases of decreases by more than 15 percentage points.

Vario Menu

The following option menu comes in view when you touch any part of the touch-screen when the "Instruments" menu is visualized.



If you touch the squares, you can activate or deactivate them. A red square indicates that the related function is active. Touching OK confirms the entered changes, pressing CANCEL leaves the situation as it was. In both cases, return to the "Instruments" screen is automatic.

<u>Show Humidity</u> Lets the visualization of the blue pointer showing humidity be set.

<u>Show Gradient</u> Lets the visualization of the current gradient be set.



Map Mode

The map page will be visualized by pressing button **F1** again. The zoom can be increased or decreased by pressing the arrow keys $(\widehat{u} \, \mathbb{Q})$.



The first TASK leg will be shown in red, the second in green. The 8 km long starting line and the finish line are also visualized. To confirm the start, press button 4. To change the map zoom, press \hat{u} to decrease it and \hat{v} to increase it.

Page 9



Map Menu The following menu will be visualized when you touch any point of the touch screen when the "Map" screen is in view.

MAP MENU	If you touch the squares. you can activate or deactivate them. A red square shows that the function is active.
SHOW TERRAIN	Touching OK confirms the entered changes, pressing CANCEL leaves the situation as it was. In both cases, return to the "Map" screen is automatic.
SHOW AIRSPACE	<u>Show Terrain</u> When activated, shows the terrain
SHOW WAYPOINT	<u>Show Airspace</u> When activated shows type of air space Show Waynoint
TRACK UP	When activated shows the waypoints; the TASK points or GOTO points will be shown on the map even if this function is not activated.
SHOW TRACK	<u>Track up</u> When activated, map orientation has track direction on top. When not
SHOW POSITION	activated, North is on top of the map. <u>Show Track</u>
SHOW GLIDE	When activated shows track flown during a maximum time of 2 hours. <u>Show Position</u> When activated shows the current GPS coordinates.
CANC OK	<u>Show Glide</u> (function currently being tested)





The main menu screen will be shown a few seconds after pressing the On button of the EasyDisplay. In the case of the first power-up after installation, it is necessary to configure the device, otherwise, EasyDisplay is ready to operate with the previously made selections, including maps, waypoints and air spaces.

EasyDisplay configuration

Easy Display configuration involves three main steps.

EasyDisplay Setup

Position on the "SETUP" item using arrow keys \hat{v} and \bar{v} and press OK \mathcal{A} ; the following menu will be visualized:

SETUP MENU	
RTASK WARNING	(km)
SOUND TYPE	(0-1)
SET HUMIDITY 100%	
IAS ADJUST	(km/h)
BACKGROUND COLOR	
	(min)
SOUNDING QUOTA	(mt)
	⊊∕ ∕~
	Ý

RTASK WARNING

When you are approaching waypoint, the area around the waypoint will be automatically visualized as soon as the distance from the waypoint is less than the one shown in the RTASK WARNING line.

SOUND TYPE

When set at 0 the VARIO aural tone is different from the NETTO tone, when set at 1, the two aural tones are the same.

SET HUMIDITY 100%

During the first flight do the setting of the humidity probe. Position on the SET HUMIDITY line. The following legend will come in view on the screen: "SET HUMIDITY 100% XX YYY". As soon as you reach the condensation altitude, press OK & twice in quick sequence to memorize the value corresponding to 100% humidity. While doing this operation, make sure that the value shown at letters XX is 65 or higher, otherwise probe setting will not be carried out. The probe is now

correctly calibrated. To calibrate it again, repeat the same procedure.

IAS ADJUST

This function lets you calibrate the IAS manually as a function of the Pitot tube position on your glider. While flying at a speed of approx. 120 km/h, use arrow keys \hat{u} and \hat{v} to change the value shown on the screen and make it equal to that read by the airborne airspeed indicator. This operation must be performed with the utmost accuracy because it is essential to obtain a precise calculation of the wind.

BACKGROUND COLOR

Permit visualization to be changed by reversing the white and black colors of the background.

TIMEOUT START

This value, in minutes, is the time you have to cross the starting line after you pressed button 4 on the remote control. This operation starts a count-down which will be visualized in the lower right corner of the screen in the position where TK ETA is usually shown. The value is shown both in the "Instrument" and the "Map" page. The indication will start flashing when the time remaining to cross the start line is ten seconds. Should you forget to press button 4 before crossing the start line, the Task can be started at any time by pressing and holding button 4 for five seconds. Obviously, the statistics will not include the distance traveled from the starting line to the time the button is pressed.

SOUNDING QUOTA

This value, in meters, is the minimum altitude change the system requires to start plotting the weather sounding in the special page. Position over the SOUNDING QUOTA value with arrow key \Rightarrow , then you can change it by pressing \hat{T} and \hat{V} (recommended value: 400 m).



COMPASS SETUP

This item includes a sub-menu:

SETUP FLIGHT: inactive at this time.

CALIBRATION: Figure 3 will be visualized. At this point you must calibrate your compass.

After changing your glider attitude so that it is flying straight and level, set heading to the NORTH, and press key OK &. Repeat the same procedure for the other heading specified in the figure, taking care that

the glider remains in level flight. To memorize the data at the end of the procedure, return to the MAIN MENU and exit the program using the EXIT function. If, during calibration, the data shown in the column at the extreme right of the figure differs from the data given in parentheses by more than 10°, the EMB has been instal led in a position where it is disturbed by significant magnetic interferences. In this case, a correct indication of wind is unlikely to be obtained. It is, therefore, necessary to remove the source/sources of the magnetic interference.

TCM INPUT: permits the activation of the connection and the use of an external electronic compass.

After completing the SETUP MENU, return to the MAIN MENU by pressing arrow key ⇔.

Now check whether calibration was correctly completed. Select the variometer page and check that the heading shown on the screen corresponds to the heading over the full 360 degrees, irrespective of the glider attitude (maximum permissible deviation 2%3%.

VARIO/NETTO SETUP

This item includes a submenu:

VARIO AVG/NETTO AVG: it is the time in seconds during which the average related to VARIO and NETTO is calculated. Position on the value by use of arrow key \Rightarrow , then, if necessary, change it by use of \hat{U} and ₽.

AUDIO LEVEL UP VAR: it is the value in m/s, past which the variometer aural tone starts being emitted. Position on AUDIO LEVEL UP VAR by use of arrow key ⇒, then, if necessary, change it by use of û and ₽.

AUDIO LEVEL DOWN VAR: it is the value in m/s, below which the variometer aural tone starts being emitted. Position on AUDIO LEVEL DOWN VAR by use of arrow key ⇒, then, if necessary, change it by use of û and ₽.

AUDIO LEVEL UP SC: it is the value in km/h, past which the speed command aural tone starts being emitted. Position on AUDIO LEVEL UP SC by use of arrow key \Rightarrow , then, if necessary, change it by use of \hat{T} and $\hat{\Psi}$.

AUDIO LEVEL DOWN SC: it is the value in km/h below which the speed command aural tone starts being emitted. Position on AUDIO LEVEL DOWN SC by use of arrow key ⇒, then, if necessary, change it by use of û and ₽.

At the end of the VARIO/NETTO MENU, press the arrow key \Leftrightarrow to return to the SETUP MENU.

UNITS

This option lets you set the unit of measurement of each quantity used in flight.

COMPASS MENU	
SETUP FLIGHT CALIBRATION	
TCM INPUT SETUP MENU	☆

COMPASS CALIBRATION			
NORD	(0)	0	167
NORD/EST	(45)	45	45
EST	(90)	90	90
SUD/EST	(135)	135	135
SUD	(180)	180	180
SUD/WEST	(225)	225	225
WEST	(270)	270	270
NORD/WEST	(315)	315	315

Figure 3

VARIO/NETTO MENU	
VARIO AVG NETTO AVG AUDIO LEVEL UP VAR AUDIO LEVEL DOWN VAR AUDIO LEVEL UP SC AUDIO LEVEL DOWN SC SETUP MENU	(5-30 sec) (5-30 sec) (mt) (km/h) ⇔



Polar Setup

Position on the "SETUP" item using arrow keys ☆ and ♣ and press OK, the following menu will be visualized:

POLAR MENU		
MassDryGross: RealMassDryGross: Speed1 Sink 1 Speed2 Sink 2 Speed3 Sink 3 VNE Stall speed MAIN MENU	kg km/h m/s km/h m/s km/h km/h ¢⊐	mass used for polar calculation actual take-off mass, without ballast

Using arrow keys \hat{T} and $\hat{+}$ select the desired item which will come in view on a black background, and, using arrow keys \Leftrightarrow and \Rightarrow , position on the value. You can change the values by using arrow keys \hat{T} and $\hat{+}$, All masses are in kg, and speeds in km/h. You have to set the sink values, VNE and stall speed corresponding to the specified speeds that you obtain from the polar chart provided by the manufacturer of your glider. At the end of the POLAR MENU, return to the MAIN MENU page by pressing OK \notin on the MAIN MENU.



The exit from the program through the EXIT function causes the automatic memorization of all performed settings, irrespective of the reasons for and the time of the exit. Conversely, some of the entered data may be lost if the display is switched off without exiting the program.

Therefore, when you enter the program again, check that the previously entered data have been correctly memorized.

FlightRecord configuration

Position on the "SETUP" item using arrow keys \hat{U} and \hat{V} press OK \mathcal{A} , the following menu will be visualized: Using arrow keys \hat{U} and \hat{V} you will be able to select one of the shown

		options
FLIGHT RECORDER MENU		In function DOWNLOAD TO, pressing \Rightarrow gives access to the CF card function which parmits the flights to be memorized in the CE residing
DOWNLOAD TO DOWNLOAD FLIGHT DELETE FLIGHT DEL ALL FLIGHTS	th th th	in the system CPU. If the MMC/SD card is inserted in the Special reader in the digital box, using arrow keys \hat{T} and \mathbb{P} and pressing OK $\overset{d}{\Rightarrow}$ on the selected option, you can choose the card on which you want to store the flights (CF card or MMC/SD card).
SET GLIDER TYPE SET GLIDER ID SET PILOT NAME SET COMP.ID SET COMP.CLASS SET FIX RATE		Confirm the selection by pressing OK & and position on the DOWNLOAD FLIGHT option. Pressing OK & again will cause the flight list to come in view. Using arrow keys r and t select the flight you want to download, then press OK & to download it. Flights are identified as follows in the flight list: 05-03-21 09:21:151:21:37
READ TASK DECL. MAIN MENU	¢	The first group of digits indicate the date (<i>yy-mm-dd</i>), the second group indicates the starting time (<i>hh:mm:ss</i>) and the third indicates flight time (<i>hh:mm:ss</i>)

The flight list will be visualized again at the end of the above operation,

so that other flights can be DOWNLOADED if desired. If you do not want to download other flights, use arrow key \Leftrightarrow to return to the FLIGHT RECORDER MENU.



CAUTION: if you press $OK \not\in J$ on the <u>DELETE FLIGHT</u> and <u>DEL.ALL</u> <u>FLIGHTS</u> option, the selected flights will be erased immediately and automatically.

In order to modify the information concerning GLIDER, GLIDER ID, PILOT NAME, COMP. ID, CLASS and FIX RATE, position on the data to be changed and press OK. The screen will visualize the image shown in Figure 4.

The operation of the keyboard shown in the figure is exactly the same as the operation of a mobile phone.

To return to the MAIN MENU press OK *d* on the related function, or press *⊂*.



Waypoint selection

The following menu will be visualized from the NAVIGATION \rightarrow WAYPOINT menu.

WAYPOINT MENU	
LOAD WP FILE	⇔
ADD USER WP	⇒
MODIFY USER WP	⇒
DELETE USER WP	\Rightarrow
IMPORT USER WP	\Rightarrow
EXPORT USER WP	⇒
NAVIGATION MENU	\Leftrightarrow

Function LOAD WP FILE lets you select one of the Waypoint files (DAT) stored in the internal memory of the device. Refer to the "File Management" section to upload other files.

Here it is also possible to create and manage an additional list of waypoints, called "user's waypoints".

ADD USER WP permits a fully new user's waypoint to be created. The selection of this option causes the visualization of the keypad shown in Figure 5.

At this point, using the 12 keys in the upper part of the screen, you can enter the currently highlighted data (in the example in Figure 5, it is the

waypoint name). After data entry is completed, the data is confirmed by pressing "Enter", and automatic passage to the following data element occurs (in the examples in Figure 6 and Figure 7 pressing "Enter" after entering the Name the system passes to waypoint latitude).

After filling in all desired fields, press button "OK" to save the stored data. Pressing "CANC" causes return to the previous menu but no data are saved.

IMPORTANT NOTE:

It is possible to re-enter a previously entered data by simply touching the concerned data line on the touch screen.

After entering latitude and longitude it is possible to visualize the related point on the map by touching the question mark ("?") appearing on the touch screen. The image shown in Figure 8 will be visualized.

During waypoint "PREVIEW" pressing arrow keys \hat{U} and \hat{V} lets you change the map zoom (Figure 9). To return to data entry, press any other key or touch the touch screen.



Figure 5



Figure 6

Figure 7

Figure 8

Figure 9

Function MODIFY USER WP lets you change a "user's waypoint" previously entered. Once you have selected the waypoint to modify, follow the same procedure that applies to the entry of a new waypoint, and which is described above.

Function DELETE USER WP lets you select a "user's waypoint" from the list stored in the device and delete it.

Functions IMPORT USER WP and EXPORT USER WP permit, respectively, to copy a full list of user's waypoints from the SD card to the device, and to copy the list of waypoints on the device to the SD card. The import function <u>OVERWRITES</u> the user's waypoint lists stored in the device.

The file that will be written or read shall be on the main directoy of the SD card and have name "USER_WP.DAT".

Airspace selection

From the NAVIGATION \rightarrow AIRSPACE main menu, there will be visualized the menu shown in Figura 10.

The LOAD function lets you select one of the Airspace files stored in the internal memory of the device. Refer to section "File management" to load new files.

The kind of airspace type visualization can be selected among the following options: TRANSPARENT, FILLED, BORDER and DISABLED.

The option WARNING DISTANCE/QUOTA lets you set the horizontal and vertical distance from the entry of the specific airspace at which you want to receive the first warning.

The warning, both visual and aural, will be highlighted (short blinking) on the



screen, the map page and the instrument page.

The indication of distance (both vertical and horizontal) remaining before entering (controlled) airspace has a leading plus sign and is written on a yellow background.

In case you are inside a controlled airspace, the indication of the distance you traveled after entering it is written with a leading minus sign and the backgroud color becomes magenta.

AIRSPACE MENU	
LOAD	
R Restricted	TRANSPARENT
Q danger	TRANSPARENT
P prohibited	FILLED
A Class	TRANSPARENT
B Class	BORDER
C Class	BORDER
D Class	BORDER
E Class	BORDER
GP glider pro.	FILLED
CTR	FILLED
w wave window	BORDER
OTHER	BORDER
WARNING DISTANCE	1 Km
WARNING QUOTA	500 mt
SWITCH TO MAP	YES
NAVIGATION MENU<	

Figura 10

The warning can be canceled by pressing key OK ♂ or touching the touch screen. In this case, if you continue to get closer to the controlled airspace, the warning will activate again automatically everytime a distance that is a half the distance that generated the previous warning is attained.

Option SWITCH TO MAP permits warning activation to be automatically visualized on the map page that displays the controlled airspace. Arrows on the map show wind direction and strength.

The points of the arrows indicate the direction, while the number of arrows (maximum three) shows the strength of the wind. Each arrow indicates 10 km/h (30 km/h max).

Map selection

From the NAVIGATION \rightarrow MAP main menu there will appear the list of the maps stored in the internal memory of the device. Refer to section "File management" to upload additional maps. The already published maps can be downloaded free of charge from our web site. A request must conversely be sent for the not yet published maps.

Maps are of two types:

- 1. Vectorial maps (BIN)
- 2. Bitmaps (BMZ)

The maps of the first type, which are now obsolete, have an accuracy of 500 meters as to altitude, and a 1000 m horizontal resolution.

The second type maps have an accuracy of 50 m as to altitude and a 90 m horizontal resolution.

Note: an individual BMZ map normally covers a large surface area (typically a grid having 15° of latitu de and 15° of longitude), but only a grid of 3° of longitude and 2° of latitude around the current position of the g lider is visualized on the screen.



Task setting

There are four main modes to set the course to be followed during flight.

WAYPOINT

This is the simplest mode. It consists of following the set course from the current position to a previously defined waypoint. To set the destination waypoint, after carrying-out the pre-flight, select the preferred type of waypoint list ordering from the FLIGHT->GOTO main menu, and select the desired waypoint from the visualized menu.

Function NEAREST is activated automatically by pressing button F3. A list including only the waypoints you can use for landing will be shown. These waypoints will be selected from the list of the previously entered waypoints and will be ordered based on distance from your current position. The first waypoint is the one nearest to you.

IMPORTANT NOTE: every time the waypoint list is used, the lower part of the screen will visualize the characteristics of the selected waypoint as they are included in the .dat file. The waypoints that cannot be reached will be shown in red; those that can be reached will be shown in white. The waypoints that can be reached are also highlighted by a white legend on a red background on the map. The calculation to asses the possibility to reach a waypoint is carried out assuming that there is no wind. For easier reading of the waypoint list, arrow keys $\Leftrightarrow \Rightarrow$ activate the page up and page down functions.

In case of error in waypoint selection, pressing button 1 cancels the wrong selection.



R TASK

You can select a task previously created by use of the NAVIGATION \rightarrow TASK \rightarrow R TASK \rightarrow LOAD TASK function, but if you want to create a new task, the following submenu will be visualized from the NAVIGATION \rightarrow TASK \rightarrow R TASK \rightarrow CREATE NEW TASK main menu.

R TASK MENU	
WAYPOINT ORDER CYLINDER RADIUS START LINE LENGTH FINISH LINE LENGTH FINISH LINE BEARING MAX START SPEED MAX. ALTITUDE START	(mt) (mt) (mt) (mt) (mt)
	()

The option <u>WAYPOINT ORDER</u> lets you decide whether the waypoints must be visualized by NAME or NUMBER. Use arrow keys \hat{T} and $\bar{\Psi}$ for this selection. Confirm your choice by pressing OK $\not\in$ and going directly to the <u>CYLINDER</u> <u>RADIUS option</u>.

Using arrow keys \hat{v} and \bar{v} you can modify the radius of the cylinder plotted around the WAYPOINT. A 50 m increase, or decrease, will be achieved every time the related arrow key is pressed. The next waypoint will be shown automatically on the map when your distance from the waypoint is less than the set distance. After you confirm the CYLINDER RADIUS by pressing OK ϕ , the following option will be visualized. The same applies to all the following options.

<u>START LINE LENGTH</u>: length of the start line in meters. Position on the value using arrow key \Rightarrow and change it by 100 meters every time you press arrow keys $\hat{\Upsilon}$ and $\hat{\Psi}$.

arrow key \Rightarrow and change it by 100 meters every time you press arrow keys \hat{T} and ϑ .

<u>FINISH LINE BEARING</u>: finish line bearing with respect to last leg bearing. Position on the value using arrow key \Rightarrow , and change it by one degree every time you press arrow keys \updownarrow and \clubsuit .

<u>MAX START SPEED</u>: maximum speed (km/h) allowed for start line crossing. Position on the value using arrow key \Rightarrow and change it in 10 km/h steps every time you press arrow keys \hat{v} and ϑ . If the difference between the glider speed and the set speed becomes less than 10 km/h, the device will give an aural and a visual warning signal.

Option <u>MAX.ALTITUDE START</u> lets you change the start line altitude in meters. If the difference between your altitude and the set altitude becomes less than 100 m, the device will give an aural and a visual warning. Position on the value using arrow key \Rightarrow and change it by 50 m every time you press arrow keys \updownarrow and \clubsuit .

Option <u>MAX.ALTITUDE TASK</u> lets you set the altitude (in meters) that cannot be exceeded durign the task. If the difference between the actual altitute and the set altitude becomes less than 100 meters, you will be given a visual and an aural warning automatically. Position on the value using arrow key \Rightarrow and change it by 50 meters every time you press arrow keys \hat{r} and \hat{v} .

The waypoint list will come in view after you have set all previously specified values and pressed OK &.

For each of the selected viewpoints, the lower part of the screen will show the waypoint data. The selected waypoint name with leading letter S (*start*) will be visualized. On the right of the name you can see in sequence the distance from your current position and the start line, the bearing, the height at which you want to overfly the waypoint and the total task length. Position on flying altitude to the waypoint with arrow key \Rightarrow , and change it by 50 meters every time you press arrow keys \hat{u} and ϑ . Then press OK $\not{\!\!\!/}$ to confirm and return to the waypoint list to choose the subsequent legs. Letter L (*leg*) will appear on the left of the name of each individual leg. To change the last leg in the final leg, replace letter L with letter F (*finish*) by use of arrow key \hat{u} . After pressing OK $\not{\!\!/}$ you can assign a number (0 thru 9) to the just prepared task with arrow \hat{u} and memorize it by pressing OK $\not{\!/}$.

To use the just prepared task in flight, access the GOTO function from the FLIGHT MENU page, and chose the R TASK option. The list of the already memorized R TASKs will be visualized. Moving the cursor by use of arrow keys \hat{U} and \hat{V} you select the desired task. All the characteristics of the selected task will come in view automatically on the lower part of the screen. You will thus immediately learn the waypoints, start and finish and the total task length.

At the end of the R TASK MENU you can return to the NAVIGATION MENU by pressing arrow key <-.

AA S T

AA S TMENU

WAYPOINT ORDER

START LINE LENGTH

FINISH LINE LENGTH

FINISH LINE BEARING

MAX. ALTITUDE START

MAX. ALTITUDE TASK

MAX START SPEED

TASK TIME (hh:mm)

(mt)

(mt)

(mt)

(mt)

(km/h)

It is possible to select a task previously created by use of the NAVIGATION \rightarrow TASK \rightarrow AA S T \rightarrow LOAD TASK function. If you want to create a new task, the following menu will be visualized from the NAVIGATION \rightarrow TASK \rightarrow AA S T \rightarrow CREATE NEW TASK menu.

The <u>WAYPOINTORDER</u> option lets you chose whether the waypoint list must show the waypoint NUMBER or the waypoint NAME. Use arrow keys \hat{T} and \hat{V} to do the selection, and confirm your choice by pressing OK \mathcal{P} .

<u>START LINE LENGHT</u>: length of the start line in meters. Position on the value using arrow key \Rightarrow , and change it by 100 meters every time you press arrow keys \hat{v} and \hat{v} .

<u>FINISH LINE LENGTH</u>: length of finish line in meters. Position on the value using arrow key \Rightarrow , and change it by 100 meters every time you press arrow keys \updownarrow and ϑ .

<u>FINISH LINE BEARING</u>: finish line bearing with respect to last leg. Position on the value using arrow key \Rightarrow and change it by one degree every time you press arrow keys Υ and ϑ .

<u>MAX START SPEED</u>: maximum speed in km/h allowed at start line crossing. Position on the value using arrow key ⇔ and change it by 10 km/h every time you

press arrow keys \hat{u} and ϑ . If the difference between your speed and the set speed becomes less than 10 km/h, you will receive both an aural and a visual warning.

Option <u>MAX.ALTITUDE START</u> lets you change the start line altitude in meters. If the difference between your actual altitude and the set value becomes less than 100 meters, the device will give an aural and a visual warning automatically. position on the value using key \Rightarrow and change it by 50 meters every time you press arrow keys Υ and ϑ .

Option <u>MAX.ALTITUDE TASK</u> lets you change the altitude in meters that must not be exceeded during the task. If the difference between your altitude and the set value becomes less than 100 m, you will receive an automatic aural and visual warning. Position on the value using arrow key \Rightarrow and change it by 50 m every time you press arrow keys \updownarrow and ϑ .

<u>TASK TIME</u>: it is the minimum time in hours and minutes that you need to complete the task. Position on the value using arrow key \Rightarrow and change it by 5 minutes every time you press arrow keys \updownarrow and \clubsuit .

The waypoint list will come in view after all the described values come in view and OK ∉ is pressed.

The name of the selected waypoint will come in view on the screen with a leading S (*start*). On the right of the name you will see, in the following order, the distance of your current position from the starting line, the bearing, the height at which you want to overfly the waypoint and the total task length. Position on the waypoint overfly height using arrow key \Rightarrow , and change it by 50 meters every time you press arrow key \hat{T} and \emptyset . When you have completed this selection, press OK \notin to confirm and return to the waypoint list to select the following legs. Letter L (*leg*) will be shown on the left side of the names of each individual leg. To change the last leg into the final leg, replace letter L with letter F (*finish*) using arrow key \hat{T} . The prepared task will come in view when you press OK \notin , and you will have the possibility to determine, based on the competition rules, the radius of the circle or the angle of the circular sector to be generated starting from the different waypoints. To select the radius, position on legend "radius" using arrow key \hat{T} . To select the dimension of the circular sector, position below legends ANG1 and ANG2 to set the initial and final angles of the circular sector. Press OK \notin after setting each value to confirm the value.

After pressing $OK \notin$ you can assign a specific number *(0 thru 9)* to the just prepared task using arrow key \hat{v} and memorize it pressing $OK \notin$.

The just created task will now be visualized on the screen (Figure 11). Using arrow key \Rightarrow you will visualize in sequence the useful areas around each waypoint. Pressing OK $\not\in$ will visualize a cruciform cursor positioned exactly over the waypoint (Figure 12). At this point, using the four arrow keys $\Leftrightarrow \square \Downarrow \Leftrightarrow$ you will be able to move the cursor to the desired position, provided this position is in the area allowed by the competition rules. The total task length in km ad the average speed in km/h necessary to complete the task in the minimum time set will be immediately visualized in the lower part of the screen every time you move the cursor. Press OK $\not\in$ to confirm the selected waypoint. By repeating the procedure described above you will be able to determine where to turn around each waypoint and thus calculate the total length and the average speed necessary for the prepared task area.



WARNING: the actual turn in the permitted area around the waypoint must be confirmed by pressing and holding button 4 for at least five seconds.

At the end of the AA S T MENU you can return to the MAIN MENU by pressing arrow key \leftrightarrows .

To activate the task prepared as described above during flight, access the GOTO function from the FLIGHT MENU page and select the TASK option. Moving the cursor by use of arrow keys \hat{u} and \hat{v} you select the desired task. All the characteristics of the selected task will come in view automatically on the lower part of the screen. You will thus immediately learn the waypoints, start and finish and the total task length.









While flying the task, you have the possibility of checking the Estimated Time of Arrival (ETA) as a function of:

- average speed on task
- average ground speed during the last 10 seconds
- manual setting of speed

You can choose one of the above options by pressing $OK \notin$ first, then $\Leftrightarrow \Rightarrow$.

- ETA, shown green if more than minimum time needed, and red if less than minimum time needed.
- RT, time remaining to task expiry
- DT, difference between ETA and minimum time to complete the task (green if positive, red if negative)



F.A.I

It is possible to select a task previously created by use of the NAVIGATION \rightarrow TASK \rightarrow F.A.I. \rightarrow LOAD TASK function; if, conversely, you want to create a new task the following menu will be visualized from the NAVIGATION \rightarrow TASK \rightarrow F.A.I. \rightarrow CREATE NEW TASK main menu.

F.A.I. MENU	J	
		(mat)
RADIUS	SECTOR	(mt)
MAX STAR	T SPEED	(km/h)
MAX. ALTIT	UDE START	(mt)
		(+)

Option <u>WAYPOINT ORDER</u> lets you choose whether the waypoint list must show the waypoint NUMBER or the waypoint NAME. To do the selection use arrow keys \hat{U} and \hat{U} , then confirm by pressing OK \mathcal{A} . The pressing of the OK \mathcal{A} also causes immediate passage to the <u>SECTOR RADIUS</u> option.

Using arrow keys \hat{U} and \bar{U} you can change the radius of the sector whose vertex is the waypoint. The radius increases or decreases by 100 meters every time the related key is pressed. This parameter has no influence on the task, but is used only to visualize the sector radius, which is infinite actually. Once you enter the sector and irrespective of the distance from the waypoint, the next waypoint will be visualized on the map.

After you confirm the SECTOR RADIUS value by pressing OK &, the next option will be visualized; and the same will happen for all the subsequent options.

<u>MAX START SPEED</u>: it is the maximum speed in km/h allowed at the time of start line crossing. Position on the value using arrow key \Rightarrow , and change it by 10 km/h every time you press arrow keys \updownarrow and \clubsuit . If the difference between your speed and the set value becomes less than 10 km/h the system will provide both a visual warning and an aural warning.

The <u>MAX.ALTITUDE START</u> option lets you change the altitude in meters of the starting line. If the difference between your altitude and the set value becomes less than 100 m. the system will provide both a visual warning and an aural warning. Position on the value by using arrow key \Rightarrow , and change it by 50 meters every time you press arrow keys \hat{v} and ϑ .

The <u>MAX.ALTITUDE TASK</u> option lets you change the altitude in meters that must not be exceeded during the task. If the difference between your altitude and the set value becomes less than 100 m., the system will provide both a visual warning and an aural warning. Position on the value by using arrow key \Rightarrow and change it by 50 meters each time you press arrow keys \updownarrow and \clubsuit .

After you have set all the values specified above, pressing OK & will cause the visualization of the waypoint list.

The characteristics of each of the selected waypoints will be visualized in the lower part of the screen.

The name of the selected waypoint will come in view on the screen with a leading S (*start*). On the right of the name you will see, in the following order, the distance of your current position from the starting line, the bearing, the height at which you want to overfly the waypoint and the total task length. Position on the waypoint overfly height using arrow key \Rightarrow , and change it by 50 meters every time you press arrow key \hat{a} and ϑ . When you have completed this selection, press OK \notin to confirm and return to the waypoint list to select the following legs. Letter L (*leg*) will be shown on the left side of the name of each individual leg. To change the last leg into the final leg, replace letter L with letter F (*finish*) using arrow key \hat{a} . After pressing OK \notin you can assign a number (0 thru 9) to the just prepared task with arrow \hat{a} and memorize it by pressing OK \notin .

To use the just prepared task in flight, access the GOTO function from the FLIGHT MENU page, and choose the F.A.I. option. The list of the already memorized F.A.I.s will be visualized. Moving the cursor by use of arrow keys \hat{v} and $\bar{\psi}$ you select the desired task. All the characteristics of the selected task will come in view automatically on the lower part of the screen. You will thus immediately learn the waypoints, start and finish and the total task length.

At the end of the F.A.I. MENU you can return to the NAVIGATION MENU by pressing arrow key \Leftrightarrow .



Pre-Flight

Select PRE-FLIGHT from the main menu, the following menu will be visualized.

PRE-FLIGHT M	IENU
PILOT NAME	xxx xxx
QNH	xxxx.x
ALTITUDE	XXX
MAP	XXX
AIRSPACE	XXX
WAYPOINT	XXX
GLIDER	XXX
GLIDER ID	XXX
COMP ID	XXX
CLASS	XXX

PILOT NAME:

LOCAL TIME: this number is the number of hours you want to add to the UTC time received from the GPS.

<u>QNH</u>: You can change the QNH and, automatically, relative height. Press arrow keys \hat{U} and \hat{J} to increase and decrease the value.

At this point check whether the data in items <u>GLIDER</u>, <u>GLIDER ID</u>, <u>PILOT NAME</u>, <u>COMP. ID</u>, <u>CLASS</u> are correct. If not so, change them to carry out the configuration of the FLIGHT RECORDER.

To continue and enter the FLIGHT menu you must press $OK \not\in$ at the item concerning the QNH. Press arrow key \Leftrightarrow to return to the MAIN MENU.



<u>WARNING</u>: the MAP and INSTRUMENT mode cannot be accessed if the Pre-flight data are not confirmed.

Flight

Select FLIGHT from the main menu; the following menu will be visualized.

FLIGHT MENU	
BUGS ALT. MARGIN ALT. FILTER VARIO FILTER METER EFF. TIME EFF. REFRESH SC TIME SC FILTER AAST MODIFY TURNPOINT DISPLAY SOUNDING GOTO WIND MAIN MENU	(0-5) (mt) (1-30) (0.5-1-2) (sec) (sec) (sec) (5-30 sec) ⇔ ⇔ ⇔ ⇔

Access to the FLIGHT MENU is possible also by use of button 2 fitted to the stick; and using arrow keys \hat{U} and \hat{V} you can position on one of the specified options.

<u>BUGS</u>: position on the BUGS value by using arrow key \Rightarrow . The value can be changed by use of arrow keys \hat{U} and ϑ . The BUGS value can change from 0 to 5. 0 corresponds to the best condition, 5 to the worst.

<u>ALT. MARGIN</u>: it is the value in m. of the altitude margin with which you want to overfly a waypoint. Position on the ALT. MARGIN value by using arrow key \Rightarrow . It can be changed by use of arrow keys \updownarrow and \clubsuit . It changes by 100 meters every time an arrow key is pressed.

<u>ALT. FILTER</u>: acting on this value it is possible to reduce the instantaneous peaks of the value indicating the altitude required for the glide.

<u>VARIO FILTER</u>: acting on this value it is possible to reduce the instantaneous peaks of the variometer readings. The lower the VARIO FILTER value, the fastest the variometer response. Position on the

VARIO FILTER value by using arrow key \Rightarrow , and change it by use of arrow keys \hat{U} and \hat{V} , if required *(recommended values: 2/3/4)*.

<u>METER</u>: changing this data permits the full scale value of the variometer to be changed. Position on the METER value by using arrow key \Rightarrow , and change it by use of arrow keys \updownarrow and \clubsuit , if required. A full scale of 3 m/s correspond to value 0.5, 6 m/s correspond to value 1, 12 m/s correspond to value 2.

<u>EFF. TIME</u>: it is the time in seconds during which the system calculates L/D. Position on the EFF. TIME value by using arrow key \Rightarrow , and change it by use of arrow keys \uparrow and ϑ , if required *(recommended value: 45)*.

<u>EFF. REFRESH</u>: this value indicates how many seconds elapse between every refresh of the L/D data. Position on the EFF. REFRESH value by using arrow key \Rightarrow , and change it by use of arrow keys \updownarrow and \clubsuit , if required *(recommended value: 1)*.

<u>SC TIME</u>: the information supplied by the Speed Command is based on the data sensed during the time set at this item.



<u>SC FILTER</u>: this function adjusts the sensitivity of the speed command by modifying the time in seconds during which the visualized SC average value is calculated.

<u>AAST MODIFY TURNPOINT</u>: this function permits the task area track to be changed using the same procedure utilized to create the task. Obviously, you will be able to change the position of the turning points remaining to complete the task, and not that of the ones already overflown.

DISPLAY SOUNDING: the selection of this option causes the visualization of the thermodynamic diagram shown below.



A magenta-colored line could be in view in the above chart. It indicates the height at which inversion occurs, if any.

<u>WIND</u>: This item includes a sub-menu:

AVG TIME STRAIGHT W.: permits the time *(in seconds)* to be set during which the data for the calculation of head/tail wind are considered. The refresh rate for wind is one second. *(Recommended values: from 6 to 12 s.).*

MAX.ANGLE VAR.: sets the maximum permissible heading change during the AVG TIME during which head/tail wind is calculated.

WIND MENU	
AVG TIME STRAIGHT W.	(sec)
MAX ANGLE VAR.	(deg)
FILTER	(1-9)
FLIGHT MENU	⇔

FILTER: acting on this value, you change the response speed of the wind indicator: 1 means fastest response, 9 slowest response.



File management

In order to load new data, for instance maps, airspaces, waypoints, etc. you must copy them to directory Easy100 which resides in the system Compact Flash memory. This operation can be done by use of both a laptop computer in which there is installed the Active Sync program by Microsoft Active Sync, through the USB connection the input of which is in the digital box, or through an MMC or SD card to be inserted in the special reader also installed in the digital box. The functions described here below will be used to make the necessary copies.

Select FILE from the main menu; the following menu will be visualized.

FILE MENU		
COPY WAY POINT COPY AIRSPACE COPY MAP COPY FLIGHT DEL. WAY POINT DEL. AIRSPACE	SD→CF SD→CF SD→CF CF→SD FROM CF FROM CF	ት ት ት ት ት ት ት ት ት ት ት ት ት ት ት ት ት ት ት
DEL. MAP FILE DEL. FLIGHT MAIN MENU	FROM CF FROM CF	合 令 平

Functions COPY WAYPOINT, COPY AIRSPACE, COPY MAP permit automatic copying of the Waypoint (DAT), Airspace (TXT), Map (BMZ/BIN) files automatically from the SD card to the Easy system memory. The file becomes thus available to the application. The files must be stored in the main directory of the SD card.

Function COPY FLIGHT permit automatic copying of the previously saved flights from the Easy system to the SD card.

Functions DEL. WAYPOINT, DEL.AIRSPACE, DEL.MAP FILE, DEL. FLIGHT permit the related Waypoint (DAT), Airspace (TXT), Map (BMZ/BIN) and Flight (TXT) files to be erased from the Easy system memory. This operation may be useful to free memory space by removing files that are no longer used.

Warnings

The pilot will receive automatically a visual warning, an aural warning, or both when:

Visual	Aural	Reason
\checkmark	\checkmark	battery voltage is less than 9.5V during 10 sec
\checkmark	\checkmark	GPS satellites are less than two

Switching off

To switch off the device, you must enter the main menu and select EXIT by use of key $OK \not\in$, the image shown in () will be visualized

Exit from the program will be obtained if you touch the YES button on the touch screen.

At this point, you can press the off button on EasyDisplay

Exit from the program by use of the EXIT function, irrespective of the time and reason, causes the automatic memorization of all the entered settings. Conversely, if the display is switched off without prior exit from the program, some of the set data may be lost.

RM EXIT
ROGRAM ?
NO

IMPORTANT NOTES

It is possible to return immediately to the FLIGHT MENU pressing button 2, irrespective of the position in which you are.

In order to activate function PEV it is necessary to press arrow keys $\hat{\mathbf{r}}$ and $\hat{\mathbf{v}}$ on the stick at the same time, or the corresponding keys of the palmtop. When PEV is activated the fix is changed to one second during one minute.