Important Notice!

The flight instrument is supplied in Easy-Mode (for Basic flying).

If you wand use the XCT in full mode please switch the XCT in MENU/SETUP/EASY-MODE to N

General changes

1. Quick exit from flight mode and replay mode

Quick EXIT: Hold down Key3 und Key 1 together for app. 2 seconds – no confirmation question will appear!

Normal EXIT: Hold down Key 3 for app. 10 seconds.

2. Changes to the way normal flight mode is exited

- **In case the recording has not yet been initiated: Click KEY3 and KEY1 simultaneously. Screen shows "Flight deleted" and the instrument returns to the switch-on menu.**
- **The recording was already initiated: Click KE! And KEY3 simultaneously to get the screen message "Storing flight". The instrument shuts down automatically after the flight has been stored.**

3. Remaining battery life indicator in flight mode

The MAP / CENTRE / VARIO / BARO screens now have an indicator for remaining battery life in the upper right-hand corner, beneath the wind-direction symbol. A horizontal row with 9 little pins indicates a battery voltage between 2.9V and 4.2V. Beneath 3.4V (or 5 pins) the "low accu" symbol appears, indicating a time remaining of app. 30 minutes before the flight is stored and the instrument shuts down.

4. EASY mode for local flights

EASYSET: **The ROUTE/NEAREST/WAYPOINT/MARK function is not available in this setting.**
In BAROGRAM display the date and the Lat/long will be displayed instead of the wind distribution curve.
The first screen to appear is the VARIO display, and then the BAROGRAM appears.

5. Enlarged CURSOR

The cursor has been enlarged in all screen modes.
The electronic KEYCLICK has been expanded to also work in Settings and Lists

6. Flashing bearing-cursor means improved visibility in the display

In MAP or Thermal help mode the symbol pointing towards the next turn point flashes.
It only appears with a minimum distance of 100m.

7. KEY functions

In MAP mode		
Short click on KEY2	Toggles between 2.5 and 7.5km screen resolution	Screen shows " ZOOM 2.5km / ZOOM 7.5km"
Longer click on KEY2	Further zooming between 15 and 120km	Screen shows ZOOM 15km to 120km
Long click on KEY2	Screen track on/off	Screen shows "Track on/off"
In CENTRE mode		
Short click on KEY2	Autocentre on/off	Screen shows "Autocent on/off"
Longer click on KEY2	Toggling between 1km/2km resolution	Screen shows "Scale 1km/2km"
Long click on KEY2	Toggling between NORTH UP and TRACK UP	Screen shows "NORTH UP / TRACK UP"
In BAROGRAM mode		
Short click on KEY2	Variotone OFF	Screen shows "OFF"
Longer click on KEY2	Volume control 1/2/3	Screen shows VOL1 / VOL2 / VOL3
Long click on KEY2	Sink tone on/off	Screen shows SINKT ON /OFF

8. Track may be switched on or off during flight

In Flight or Replay mode:
Press Key2 to change resolution from 2.5x2.5km up to 120x120. The longer the key is held the lower the resolution. In 120x120km resolution the Track is deactivated.

9. Screen sequence setting (not available in EASY mode)

In MENU>SETTINGS>PICTURES

Use this option to set your preferred screen sequence. Return to default settings by selecting "DEFAULT". The default setting is MAP/CENT/VARIO/BAROGR/ROUTES/NEARST/WAYPOINTS/MARKS

Toggling between screen 1 and screen 2 with short clicks on KEY3 is only available from the MAP / CENT / VARIO / BAROGR screens. The other 6 screens are selected by holding down KEY3 in flight mode.

In "FLIGHTS>REPLAY mode you may toggle between Screen 1 and Screen 2 with a short click on KEY3, and between the remaining screens with a long click on KEY3.

In EASY mode you may only toggle between MAP / CENT and VARIO / BAROGR

10. Click tones in FLIGHT mode

The click tones enable you to toggle screens etc. without looking at the instrument.
KEY3 long: VARIO / BAROGR / ROUTES / NEARST / WAYPOINTS / MARKS

KEY2: All Multi-KEY functions when meaningful.

The default length of a "Click" has been increased to 1.00s. This value may be set between 0.52s and 1.00s

11. Progressive shutdown bar

In the switch-on menu a new bar above the words OFF / NEW / MENU progressively display how long till auto shutdown. It decreases in length towards the left so that after 8 minutes it is gone > the XCT shuts down.

General changes

12. Quick off

Two seconds after the battery symbol has appeared in the switch-on menu, the instrument may be switched off again.

13. Saveing the COM setting

The instrument now remembers the latest COM setting (SER or IrDa). This setting remains default until changed again by the user.

14. Confirm „DELETE ALL“ and „RESTORE FACTORY SETTINGS“

Delete all flights in MENU > SETTINGS
DEL ALL? Confirm with YES, cancel with EXIT

Restore factory settings in MENU > SETTINGS > BASIC SET. Confirm with YES, cancel with EXIT.

15. Flight Level display

SET ALTI: FL60 (Internationally accepted altitude setting, based on 1013,25hPa) Multiply FL by 100ft to get standard altitude in feet.

TRACK: When the screen resolution is set to 2.5x2.5km the track will be 5 minutes long. At 7.5 – 60km the track will be 10minutes long. In res. > 120km there is no track displayed on screen.

16. QNH-Display

In MENUE / SET HIGHT

In order to show the correct QNH (in hPa) the location altitude must be set correctly. QNH is only displayed beneath app. 2000m as according to the definition of QNH it doesn’t make any sense at greater altitudes. Due to small differences in the pressure sensors the QNH may differ slightly between different instruments. This does not influence the altimeter accuracy.

17. secound latency when setting MARK’s

When setting MARK’s by clicking KEY1 in recording mode the display shows the message “MARK NN” for 5 seconds before a new MARK may be set. This latency was necessary because the same key also switches to the next waypoint in a ROUTE and deletes the AVG/DST function. This also means that whenever we use any of these two functions we also set a MARK.

18. Automatic update of the “NEARST” list

Old software:
In the previous software versions, calling upon the “NEARST” waypoint function also necessitated an UPDATE in order to organize the waypoints according to their distance to the current position. Doing that unfortunately also lost the currently selected “NEARST” waypoint.

New software:
The current version automatically updates the “NEARST” list continuously. In case the currently activated “NEARST” waypoint falls off the list of nearest waypoints, the instrument automatically switches to the one at the top of the current list.

General changes

19. Arrival altitudes overview in the ROUTES / NEARST / WAYPOINT lists

When choosing a landing spot among several options we need not only the distance separating us from it but also the altitude. The new software thus gives approximate arrival altitudes for up to 16 waypoints in the stored lists. The arrival altitudes are calculated based on the L/D entered in the XC-SET MENU and shown as little pins each indicating 200m

NEARST	BRG°	DIST (km)	Meaning
TIMMER	034 ||||||	6.6	Arrival >1000m above
WEIZ	186|||||	7.2	Arrival >800m -
KAPFEN	072||||	8.3	Arrival >600m -
TURNAU	034|||	10.0	Arrival >400m -
ZELTWE	038||	12.7	Arrival >200m -
WOLFSB	222|	14.2	Arrival >0m -
FUERST	234	17.4	Not arriving < 0m -

Calculating example: L/D is set to 8.0, landing is at 740m, current altitude is 2500m, distance to landing is 10km. Arrival altitude is (2500-740) –10000/8=510m or three pins (|||)

20. Automatic initiation of flight recording

Even if you should forget to click “NEW” in the switch-on menu the instrument will commence recording if the instrument has traveled at +10km/h for 30 seconds. If the signal reception is poor or the speed falls to less than 10km/h, the countdown commences anew. The countdown is visible as a small number between 30 and 0 above the KEY2 (only when signal reception is adequate).

21. Impeller display on/off

MENU > SETTINGS > GENERAL > IMPELLER Y/N
To avoid interference from older XCT hardware we have made it possible to switch the impeller display off. However when connecting an impeller to the instrument you should set IMPELLER Y. If IMPELLER is set to N the TAS (true airspeed) display is not visible.

TAS displayed in Record and Replay modes:
In the MAP / CENT / REPLAY modes the TAS will be displayed once the IMPELLER has been set to Y. The little propeller symbol on the far left is always on when IMPELLER is set to Y, even if there’s no signal from the impeller (no forward speed). Only when the TAS has been >0 for 10 seconds the TAS is displayed on the left.

22. Optimized menus ROUTE and WAYPOINT

This is improved in all waypoint- and route lists when in Flight or Replay mode.
ROUTE/NEAREST/WAYPTS

When scrolling through lists Key1 and Key2 have been interchanged. Now Key1 goes backwards and Key2 goes forwards. When placing the cursor in the header and the < cursor is selected the footer now shows LIST and EXIT or ROUTE and EXIT

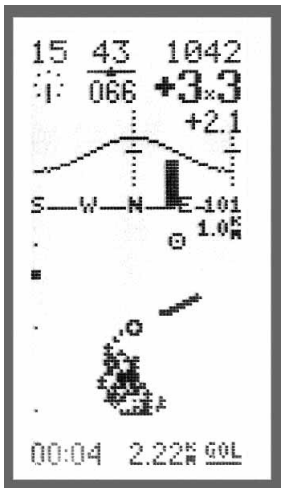
In the NEAREST list the header shows NEAREST > UPDATING and the footer shows EXIT.
The 16 nearest waypoints are thus always sorted according to their range. Press Key3 (EXIT) to leave the UPDATING and select a waypoint.

General changes

23. Centering with Flugrichtungszeiger oder mit Flugrichtung

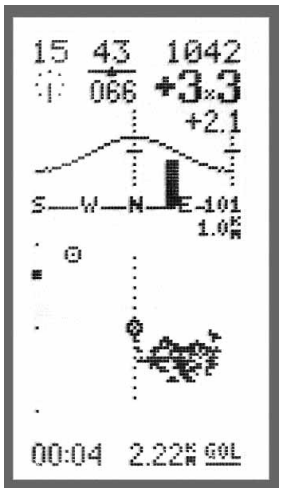
In XC SET the pilot may now choose between TRACK-UP N (equals North up) or TRACK-UP Y where the track is up. Only the CENTRING mode may be toggled in this way.
Likewise, 4 clicks on Key2 toggles the track once in flying mode. The screen will briefly show 'NORTH UP' or 'TRACK UP'. In the TRACK UP mode a dotted line appears running through the pilot position to the top of the screen.
The latest setting is saved when the instrument is shut down.

Nord-UP



The course indicator turns around the pilot. The screen shows to north.

Track-UP



The thermal and the waypoint turns around the pilot. Now, you can response very fast to the thermal.

The termal and the waypoint turns around the pilot. Now, you can response very fast to a termal.

24. Selecting a waypoint from a list is now easier

When opening a waypoint list in flight recording mode the active waypoint from either of the lists 1 to 13 is shown with a small rectangle next to it. In previous software versions, to change the active waypoint one had to exit the current one in a rather cumbersome manner.

In the new version all you need to do is browse through the lists using KEY1 and KEY2, select a list with KEY3, then browse up and down on lists using KEY1 and KEY2 again. Use KEY3 to activate the desired waypoint. The previously active waypoint is automatically exited when the new one is activated.

25. Windvektor in TNC format every 30 seconds

The XC Trainer now records the wind vector every 30 seconds in TNC format. Previously this gave only the value 'null'. If viewing a flight in the XCT logbook in TNC format you will see a wind vector (direction and strength) for every 30 seconds. Note that after 4 minutes of straight gliding the wind direction and strength are not measured and the value is saved as 'null'.

Universal changes

26. Expanded SETTINGS menu

SETTINGS menu:

EXIT		
VARIO	##	Vario menu
XC SET	##	XC-Set menu
RTE-SET	##	Rout menu
GENERAL	##	General set
PICTURES	##	pictures select

EASY SET Y/N		basic flying
BASIC-SET		factory settings
DEMOFLIGHT		load demo flight
DEL ALL FLI		deled all flights

XC-SET menu:

EXIT	
MAP TRACK Y/N	track ON/OFF
AUTOCENT Y/N	auto centering

AVG/DIST Y/N	average and distance display
GLDEPATH Y/N	glide path calculator
L/D FIX/VAR 7.5	glide rate

WIND T-UP Y/N	wind curve in track-UP
CENT T-UP Y/N	thermal centering in track-UP

RTE-SET menu:

EXIT	
START TIME	
FIRST 12:00	first start time
DELTA :15	time to next start time
MULTIPLE 5	multiple time
LAST 13:15	last start time auto calculate

ROUTE 0-9	**)
STCYL OFF/TP1-3	witch for turn point must be start point select from 1-3
10.00 km	start cylinder diameter
STCYL IN/OUT	flight in or out from the start cylinder
CYLR 0.40 km	normal cylinder diameter
CYL T-UP Y/N	flight to cylinder in track-UP

**) The RTE-SET settings are global and influence the currently active route. When a route 0-9 is activated, the display will show a '+' for the start line or an 's' for the start cylinder around either turn point 1, 2 or 3 in the active route.

27. Wind distribution curve may be set to NORTH-UP or TRACK-UP

SETTINGS > XC-SET > WIND T-UP Y/N

If the WIND T-UP is set to Y the wind distribution curve in flight or replay mode will be displayed as follows: The vertical SOG/COG bar will remain centred (=flying direction) and only the height of the bar changes according to the SOG. When the COG changes the curve shifts left or right together with the compass line.

General changes

28. Control zone display (CTR) in MAP mode

AIRSPACE menu:

- LOAD CTR Load airspace information using AIRSPACE.exe
-DEL ALL CTR Deletes all airspace information (some parts are indelible)

-COM: IRDA Select port (cable or infrared)
-RECEIVE CTR Receive details from other XCT (both set to IRDA or cable)
-SEND CTR Send complete airspace info to other XCT

USED xxx Memory spaces already in use
FREE yyy Free memory spaces (data blocks correspond to 1 waypoint)

It is only possible to transfer the ENTIRE airspace from the PC or another XCT. Any previously recorded airspace info will be overwritten.

Currently only polygons can be drawn. We are working on circles and curves.

-The loaded airspace is only visible in MAP mode. It cannot be removed. No audio alarms will be heard.

- AIRSPACE.exe:

New Aircotec PC freeware that reads and encodes in OPEN AIR format and converts to a file that can be uploaded to the XC-Trainer. It is not possible to enter airspace info directly into the instrument

Airspace files can be downloaded from www.winpilot.com/OpenAir. To install AIRSPACE.exe first download from www.aircotec.ch, save to disk and install using the included LOAD file. All CTR's will be visible, select the ones you wish to upload to XCT and send.

29. Miscellaneous

In Thermal Help display:

The averager number has been moved to under the VARIO in the upper right hand corner (before the Bearing cursor could find itself concealed beneath the averager number when on a westerly bearing).

NEW:

To begin a new flight recording manually press Key1 (as before). The NEW footer text has been replaced with the "airplane lifting off" symbol.

NMEA183

57600bps, $GPRMC.. and $GPGGA (altitudes) are transferred each second in Flight mode.

Vario changes

30. Changes to the displayed vario volume

MENU > SETTINGS > VARIO > VOLUME 0 – 3

The volume settings have changed from 0, 3, 6, 9 to 0, 1, 2, 3

31. Great improvements to the vario sound

- **The sink tone has been optimized, now with continuous frequency modulation**
- **SINKTONE Y/N: the sink tone may be switched off**
- **INVERS N: Our recommended setting. Here, the sink tone pitch increases as the sink grows stronger**
- **INVERS N: Pitch decreases with increasing sink rates**
- **SINK MOD N: Continuous sinktone when flying in sink**
- **SINK MOD Y: In this setting the sinktone alternates between 0.2 seconds of normal sink tone, and 0.8 seconds of the tone corresponding to the actual sink rate. As the sink rate increases the difference between the two tones becomes greater.**
- **Above –5m/s there is always a sink alarm, frequency 3Hz**
- **The sink tone time constant is 2 seconds**

32. Individual vario tone settings

Pitch (climbing tone)	**Set between 100 (low) and 200 (high)**	**Factory setting is 154**
Period (climbing tone frequency)	**Set between 1420 (low) and 490 (high)**	**Factory setting is 810ms**
VAR AV (Vario averager) The VARIO screen displays the set averager interval as 'AVG10s, AVG20s or AVG30s'	**Set to 10s, 20s or 30s**	**Factory setting is 20s**

33. Vario maximum values now +/- 99 m/s

Climb or sink rates up to 99m/s may now be measured and recorded. From 20m/s the DUAL sensor can no longer keep up so the altitude difference is used instead. From then on the values are calculated every 2 seconds and can only be shown in whole metre increments.

Competition Changes

34. Optional NORTH-UP or TRACK-UP displaying in the MAP and CENT screens

SETTINGS > XC-SET:
XC-SET > CENT T-UP Y/N(only for centring mode)
SETTINGS > RTE-SET > CYL T-UP Y/N (only for MAP mode with resolution 2.5km and start/turnpoint cylinders)

Recognising N-UP and T-UP in MAP and CENT mode:
NORTH-UP: A pointer around the pilot indicates the current COG
TRACK-UP: In MAP mode an arrow points towards the top of the screen, in full length when the SOG is > 0, otherwise empty. In CENT mode the arrow runs through the pilot position and is punctuated.

In MAP mode the turnpoint cylinder (usually 400m) is only visible in the 2.5km screen resolution and only when the turnpoint is within 1.2km of the pilot position. The cylinder itself is an uninterrupted circle in N-UP mode, and a punctuated circle in T-UP mode.

The cylinder itself has a little line pointing to the next turnpoint, and the track from the last 60 seconds is drawn in. This helps the pilot optimise the turnpoint approach for the shortest possible distance between turnpoints.
The turnpoint name is replaced by a '+' in the centre of the cylinder to avoid the name obstructing the flight track.
Other turnpoint names and CTR lines remain visible by N-UP in the high MAP resolution as there are not likely to be any more turnpoints visible when using 2.5km screen resolution.
The normal 4-8min. track and any other screen icons are suppressed to minimise screen clutter during the important turnpoint rounding phase.

When CYL is set to T-UP or when the GPS signal is bad (GPS BAD) the cylinder and the track is suppressed due to the lack of necessary information. The name of the turnpoint remains visible until the GPS signal is once again normal.

The last turnpoint of the route (goal) has an extra cylinder with an 185m radius around it. No line pointing to next turnpoint is visible.

Important notice: The screen resolution is not high enough to allow using only the track and the cylinder to ensure the correct rounding of turnpoints. For this purpose you should always rely on the distance bar at the bottom of the screen.

The start cylinder is shown as a \---/ symbol in MAP mode, in resolutions from 2.5 to 15km. The T-UP (when set in RTE-SET > CYL T-UP > Y) only appears in 2.5km screen resolution, all other resolutions have N-UP. The T-UP start cylinder symbol only appears within a 1100m range.

The start cylinder symbol is shown larger than life when within a 500m range, independently of the chosen screen resolution (between 2.5 and 15km).
The start cylinder symbol is also shown in CENT mode when within the 500m range so that even when thermal ling the pilot may maintain the overview.

When the GPS signal is insufficient the start cylinder symbol is suppressed.

If the RTE-SET > CYL T-UP is set to Y the screen will show the track from the last 60 seconds to help the pilot visualize the start anyway. The normal track in N-UP mode is suppressed.

Control zone lines are always visible in N-UP mode.

35. L/D adjustable or variable for final glide calculation

The L/D is adjustable from 5.0 to 60 just as it has always been. When flying through sinking air the GPATH calculation is effected by multiplying the set L/D with up to 0.5, when flying in buoyant air the set L/D may be multiplied by up to 1.25. This means that the final glide arrival altitude fluctuates greatly especially in lively air.

To counter this we have made a new option where the L/D may be set to FIX in SETTINGS > XC-SET > L/D FIX. When this setting is chosen the GPATH calculation remains based on the set L/D and does not fluctuate with moving air. The factory setting is FIX 7.5

Competition Changes

36. Multiple start times

There's a new option to set multiple start times (for speed runs) in SETTINGS > RTE-SET.
START TIME

FIRST HH:MM	The first start time, may be set between 00:00 and 23:55 in 5 minutes increments
DELTA :mm	mm may be set from 05 to 55 minutes in increments of 5
MULTIPLE N	N=number of available start times. Up to 9 equally spaced start times may be set
LAST HH:MM	Calculated by the instrument based on the above settings

In order to make sure that you get the correct start-time countdown, all START settings must be done with the utmost care. Here's a step-by-step instruction:

- First compose the route and activate it
- Then go to RTE-SET and enter all parameters carefully
- Go to XC-SET to verify that GPATH is set to Y – if you fail to do so there will be no GPATH indications for approaching turnpoints although the GPATH to start cylinder will still be displayed

In recording/flight mode the start time will be displayed as follows:
The remaining time till S1 is shown as a countdown 'S1 mm:ss' until the first start time is reached. After that 'S2 mm:ss' is displayed, then S3 etc. The last possible start time is LAST = FIRST + (N-1)*DELTA.
When counting down to the last start time 'SN' flashes next to the 'mm:ss'
Once the last start time has come and gone 'GATE X' (closed) is displayed.
Each start time is marked with an acoustic signal.
If there is only one start time (race to goal) 'S1' flashes as it is the only start time.

If there is more than 90 minutes remaining until S1 the display shows 'SN+90', where N is the number of starts set above.

37. Easy toggling of routpoints in recording/flight mode

The older software version required the pilot to hold down KEY3 until the route was displayed, then the cursor could be toggled up and down in the route in order to activate another routepoint. THIS METHOD STILL WORKS, however we have added an easier way to achieve the same thing:

While in MAP or CENT mode, hold down KEY1 until 'NEXT TPT' is displayed -> the instrument switches to the next turnpoint in the route. Hold down KEY1 longer still and 'PREV TPT' is displayed -> the instrument activates the previous turnpoint in the route.

38. Clearing the speed and distance averager

Only in BARO mode:
Hold down KEY1 until the display shows 'CLR LEG' – a new leg is initiated
Hold down KEY1 even longer and 'CLR SUM' is displayed – the sum of all the previous legs is also set to null.

39. Particulars regarding the „Multiple start times"- manual onwards toggling of route point

With the addition of the Speedrun "Multiple start times" option in the RTE-SET it has become impractical to have automatic toggling to the next route point in a route after the start. If the instrument toggles to the next route point right when the pilot has chosen to wait for the next start time the graphic display of the start cylinder will disappear, something that can be crucial for the correct timing of the start.
The pilot may ad an "/" to the turnpoint name in the turnpoint list to tell the instrument that this route point must be toggled manually, however this is a cumbersome process so we have opted to permanently set the onward toggling of the start point to Manual. Once the pilot has the chosen start in the bag he simply clicks KEY1 once (in MAP or CENT mode) to switch to the next turnpoint in the route. There should be plenty of time for this right after the start.

Universal changes

40. Optimised Final glide calculator

E-SET has been replaced with L/D (the preset glide angle of the wing, f.ex. 7.5)

In MAP mode the glide angle E is calculated based on the horizontal distance travelled/height loss in the past minute.

In strong sink the preset L/D is adjusted with a factor 0.5. If you have set your L/D to 7 the instrument will adjust to 3.5.

In buoyant air the preset L/D is adjusted with a factor 1.2

This keeps the displayed values within reasonable limits.

41. Start turnpoint with a start cylinder around it:

41.1 Entering the start cylinder:
The TP which will be used as the centre of the start cylinder is set in XC-SET with the STCYL TP x function. If 'OFF' is selected all turnpoints will have the default TP radius, normally 400m. By setting x to 1,2 or 3 the start may be set around the 1st, 2nd or the 3rd turnpoint in the route. In the 'ROUTE' list the turnpoint selected will be marked with an *'s'*.

41.2 Marking of the Start TP:
The name of the TP in the glide angle display has an IN/OUT symbol depending on whether it was set as a cylinder that must be entered or exited. The 3-character TP abbreviation will be underlined.

41.3 Glide angle optimisation for entering/leaving start cylinders:
When the 'GLDPATH Y' is set in XC-SET the MAP mode will help optimising the start cylinder timing. The glide angle display shows the following:

Display with normal TP:			Display with start cylinder TP:		
Liezen	1735 m		Liezen)<	1735 m	
-2880m	E 8.0		-2880	28 km/h	
ETE 08:25		d 6.4	STA 03:27		1.62 km

The distance to the start cylinder is shown with a black rectangular label '#' when the pilot is flying on the 'wrong' side of the start cylinder radius: When the start cylinder radius around TP "Liezen)<" is e.g. 10km and the pilot is 11.62 km from the TP, the display shows 1.62 km. If he is 9.98 km from the TP - and thus already inside the start cylinder - the display will show "STA 01:58 # 0.02 km". The exact opposite goes on when STCYL OUT has been set in XC-SET.

The time difference 'STA mm:ss' counts down. If the start time is set to 14:30 and the local time is 14:26:33, "STA 03:27" will display. At 14:30 an acoustic signal will sound for 5 seconds. After the start time "START" will display instead STA min:sec. (Maximum countdown time is min:sec 99:59.)
The ground speed necessary to reach the start cylinder from the current position exactly at the start time when gliding in a straight line towards the start cylinder is also displayed (28 km/h). This information is ONLY displayed until the start time is reached.

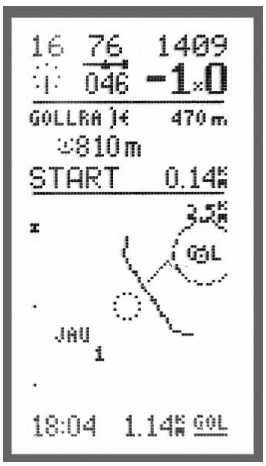
Universal changes

41.4 Graphic displaying of the Start Cylinder in MAP mode:
The start cylinder is only shown as a SYMBOL "[" in the 2.5 km, 7.5 km and 15 km MAP resolutions. It will display between the pilot position (always in the middle of the map) and the start turnpoint to indicate the start circle section.

Start point east of the pilot. Pilot is inside the cylinder and flying south.

Start point east of the pilot. Pilot is outside the cylinder and flying south.

41.5
Once closer than 500 m to the start cylinder the start cylinder symbol "[" will display in double size. It is also shown in scale 1.2 km regardless of the MAP scale. Once again, the start cylinder symbol will appear in resolution 1.2 km when within 500 m away from it. All other turnpoints and CTR points will display in the screen resolution set, of course.



In the CENTRING mode the cylinder symbol "[" is also shown in 1.2 km resolution whenever closer than 500 m – even when the overall screen resolution is set to 2.5 km.

Therefore, when closer than 500 m the pilot thus always has the enlarged start cylinder in view. (magnifiying glass function)

The horizontal +/- 250m distance bar at the bottom of the MAP display, shown when approaching/leaving normal turnpoints, is not displayed for the start cylinder due to the enlarged startcylinder symbol within 500 m.

When the STCYL is set to IN in XC-SET the automatic switch to the next TP happens 250m inside the start cylinder. When STCYL is set to OUT it happens 250m outside the start cylinder. This ensures that the important start procedure is clearly visible at all times.

The automatic switching to the next TP may be overruled by adding a "/" at the end of the TP name, eg. "LIEZEN /".

41.6 If the centre of the start cylinder is also a normal TP (most common scenario), it must be added to the ROUTE as a normal TP right after the start cylinder TP. It will be given the default TP radius, normally 400m.
Once again, the same TP must be added to the route twice.

Setting of the position of a start cylinder TP in a route is done in SETTINGS/XC-SET/ STCYL TPx, (x = OFF, 1…3).

Universal changes

42. Finish, goal:

The last TP in the ROUTE is always automatically set as the goal and marked with two concentric circles with radius 500 and 250m. This indicates a goal line of app. 1km – 500m length.
The two circles are only shown in MAP mode in the 2.5 km and 7.5 km resolutions. They help the pilot in discerning the exact overflying of the virtual goal line. Due to limitations caused by the actual screen resolution the exact radii are 480 and 220m – this translates into greater positive error margin for the pilot.

43. Final glide calculator to the goal via TP before goal:

This functionality only works for goal via last turnpoint. The goal must be set as the LAST TP in a route.
All info displayed is relative to the least reachable of the two, either the goal line or the last TP before goal and is calculated based on comparing the distance/altitude ratios.

The L/D of the wing must be entered in XC-SET (eg. L/D = 8.0). In any case, the last TP will always be used when the necessary glide to reach the last TP or the goal is greater than 1.4*L/D; see the example 'C' below: |_\ to last TP=12 is greater than 11.2 (1.4 * L/D 8.0).
This checks void the possible conflict where the last TP is easilier reached than the goal (and the instrument would thus point to goal without taking into considerance the last TP), but both are beyond realistic gliding ratio, for example; |_\ TP = 60, |_\ goal = 70. The glide ratio needed to get to goal is greater than to the last TP, but L/D 60 is still unrealistic for the last TP and the instrument thus points to the last TP until a realistic value is reached according to the formula '|_\' < 1.4 * L/D.

Examples:

a) TPT ' ◣' 8.4 and goal via last TP '◣' 6.5 -> the instrument will indicate TP '◣' 8.4
b) TPT '◣' 5.2 and goal via last TP '◣' 6.5 -> the instrument will indicate GOAL ' ⊙ ' 6.5
c) TPT '◣'12.0 and goal via last TP '◣'14.8-> the instrument will indicate TP '◣'12.0

The pilot may overrule the automatic function when gliding towards the last TP before goal by clicking once on Key1 in the MAP mode. This causes the instrument to toggle between pointing towards the goal or towards the last TP before the goal.

Once the goal becomes reachable in mode "fixed to last TP" (see above) an auxiliary flashing symbol '⊙' will appear next to the ◣ sympol:

'ETE 0:08 ⊙ ◣ 7.6'.

One click on Key1 then restores the 'Automatic' mode and the display then shows

'ETE 0:08 ◣ ⊙ 5.4'

which is the glide ratio to the goal via the last TP.

NOTE: Since the primary function of Key1 is setting marks, these marks will also be set. The closest possible time span between two marks in MAP and CENTRING modes is 3 seconds, in BARO mode it must be 10 seconds to be able reseting the AVG display sum distances by a longer keypress of Key1 (see XCT manual).

Glider

44. Miscellaneous

In MAP mode the start point is surrounded by a start cylinder with the diameter set in the RTE-SET menu. The standard 400m radius around the turnpoint is not displayed unless the turnpoint is entered twice in the route.

If a route point is blocked against automatic onwards switching (this may be done by adding a '/' to the waypoint name) the GPATH indicator in MAP mode will only appear if it is not also set as a start point (start points now ONLY toggle manually, see above).

A route point that is also set as a start point is marked in the route with an "s". Any of the three first route points in a route may be selected as start point (before this "s" was only visible when the turnpoint was highlighted with the cursor)

If we have selected "STARTLINE" in RTE-SET then the start line is always a line going through the first route point perpendicular to the course line to the next route point. In the route this line is marked with a "+" after the route point name.

45. Start line for sailplane use

Glider pilots may opt to set a start line in RTE-SET with manually adjustable length through the first route point, instead of the start cylinder. The start line is always displayed N-UP. At the same time the normal cylinder as set in CYLR will be displayed.