# PRG2008E.DOC

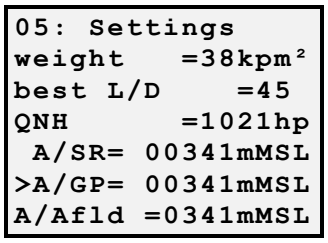
Supplement to manual SR940 for program versions 2005 and 2008

The important changes to manual edition 01/01 and PDF file Man940e9.pdf are listed here.

## A. Changes up to and including program version 2005:

Text page 05 / Settings:

Two altimeters are shown.: A/SR is the altimeter of SR940, A/GP is the altitude transmitted by flight recorder GP940/GP941. At A/GP a number is shown only if the GP940 is turned on (GP940 must have version 1.25). The altitudes shown must be adjusted before takeoff to field elevation (A/Afld). The altitude adjusted last is marked by an angle. This altitude is used within the SR940 program for all altitude displays except for glide path. If GP altitude is selected, the GP altitude is used only as long as GP940 is turned on. If GP940 is turned off, the SR altitude is used instead (as shown by the angle). If GP940 is tuned on again, the angle goes back to A/GP and GP altitude is used again.

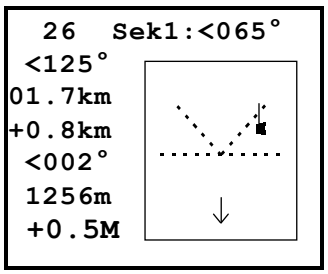



In short words: before takeoff turn on the flight recorder, then adjust SR altitude first, then adjust GP altitude. After adjustment both instruments may be turned off again.

Note: adjustment of A/GP has no influence on the altitude recorded within GP940.

Text page 26 / photo sector graphics:

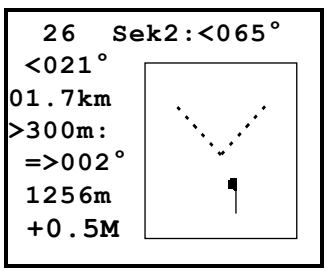
Two screens with different text are available, one for departure, the other for turnpoints and finish point. Both are shown in three different scales: 30km, 3km and 1km. The scale switches automatically with distance. The numbers shown are:




Departure (start gate):

sector type 1 and photo angle (see manual)
heading error in direction to departure point
distance to departure point
rectangular distance to start line or extension of it
heading error in direction to first turnpoint (rectangular to start line)
altimeter MSL
average climb / average netto

with scale 30km a 20km start line is shown




Turnpoints, finish point:

sector type 2 or 3 with photo angle (see manual)
heading error in direction to turnpoint
distance to turnpoint
adjustable offset for a reference point abeam the turnpoint
heading error in direction to the reference point (to go around turnpoints)
altimeter MSL
average climb / average netto

a finish line is shown when a finish point is selected

Text page 21 / FD recorder, submenue 7 / write name to FDR:

Up to three names can be entered (#1...#3), which will be stored even when power is turned off. The selected name can be transfered to GP941 (version 2.04 or later). This name will be shown in all following flight data records as pilot name.

All three names are part of the settings of SR940. If settings are transfered to GP941, then after reloading these settings from GP941 to SR940, the names are set too. So if several pilots share one glider, so every pilot should put in his name as name #1 and save the settings to one of the six sets available in GP941. After reloading his personal set of settings, his name will show up at name #1 and so the pilot can check that he took the correct set of settings from GP941.

Settings are transfered using text page 21. The sets 4...6 can only be read by SR940; writing to these sets is only possible with the PC program for GP941. To do this, the sets 1...3 are saved to PC and then written to 4...6.

With GP940 it is not possible to change from SR940 the name within the recored flight data. But for settings the names are handled as with GP941. So the names can only be used to mark the different sets of settings stored within GP940.

Text page 02 / Configure, submenue 23 /NMEA output:

A NMEA signal can be turned on and off. NMEA data are transmitted via the 15 pin rear connector of SR940 to be used by a palm PC or similar.

The NMEA signal consists of a standard $GPRMC sentence and a special sentence for pressure altitude and SR940 serial number output:

$PZAN1,01256,123456*cc CR LF
(pressure altitude in meter, positive only, with leading zeros, 6 digit serial number)

The NMEA signal is available at pin 4 of the 15 pin socket. For ground / return use the minus of the 12 Volt avionic battery.

If NMEA output is turned on, connection to IBM compatible PC can only be established by turning SR940 off and on while the PC is searching for SR940 (if new airspace data or other files are to be loaded into SR940 by PC).

New info line (added to the end of the list): ‘ True Rdl. 076.3° ‘

For „Area Assigned Tasks (AAT)“ the border lines of the assigned areas are normally defined as distances and radials from a reference point. A radial can be calculated easily using the displayed direction to a turnpoint shown by SR940. But there are some problems:

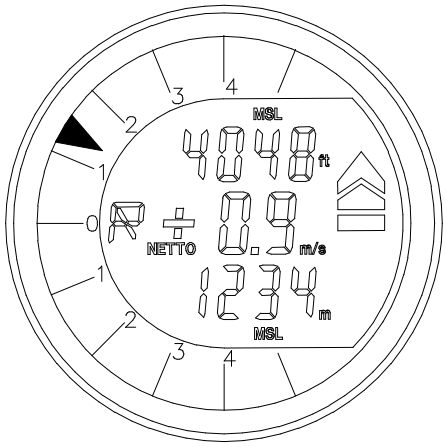
1. Magnetic directions are standard in aviation and so SR940 shows the direction to the next turnpoint as magnetic bearing. The local variation is calculated within the GPS receiver by approximation; it is not measured. So different GPS receivers may use slightly different variations at the same point. So in glider competitions the AAT radials must be true radials not using the variation.

2. With larger distance the resolution of one degree for direction information is not sufficient, as at a distance of 100km one degree will produce 2km offset to the side.

So the result is: assigned areas must de determined by „True Radials“. The new info line shows „True Radial“ and has a resolution of 0.1°. So this is sufficient to find out if the present position of the glider is inside or outside of the assigned area. If a separate graphic display is used, this information can be used to check the graphic display.

## B. Changes for program version 2008

Program version 2008 is prepared for the new analog unit ZS1R.




The pointer shows always variometer during circling mode and the same signal which is selected for indicator #1 during cruise mode. Next to zero there is an identifier which shows the signal source for the pointer:

V = Variometer
N = Netto Variometer
R = Relative Variometer
S = Speed Command Error

On the right there is a speed command column.
The average climb shown in the center is the same as shown on the screen of the SR940.
Various informations can be shown on both upper and lower lines

The function of the time constants (response times) set under 02 / Configure / 10=time constants has been changed:

time constant variometer is valid for all variometer signals like variometer, netto and relative (independent of circling or cruise mode).

time constand speed command is valid for speed command error (pointer and audio) and speed command column (independent of circling or cruise mode).

text page 02 / Configure, submenue 24 / LCD#2:

```
....=0            signal identifier not shown
.SRN=1            signal identifier shown, but not for variometer
VSRN=2            all signal identifiers shown

top:         altimeter mMSL, mGND, ftMSL, ftGND, ftFL, clock,
             GPS track, GPS heading error

bottom:      altimeter mMSL, mGND, ftMSL, ftGND, ftFL, clock,
             GPS track, GPS heading error

SFI:         SC column:  off / in SC mode only / always on
contrast:    0...5...9
```

text page 22 / special functions, submenue 05
switch from speed command signal to relative signal at relative = 0 ?  NO/YES

At 02 / Configure there is an option to get the signal source for indicator #1 and the audio switched from speed command to relative variometer if climb is found. Normally the switching occurs when the climb is larger than the value set for MacCready. With this special function the switching occurs at zero (independent of MacCready setting).