# RALLYE PACK 2 – « The 4 in 1 »

# For regularity rally    V5.0
**Last revision : 15 / 02 / 2021**

## TRIPMASTER - TIMER – GAP VIEWER - CLOCK

TRIPMASTER : the part that count the REALS kilometers.

TIMER or CADENCER : The part that count the THEORICALS kilometers.
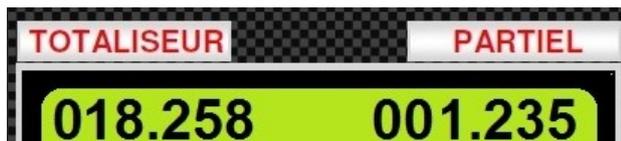
GAP VIEWER : The part that show the difference between the REALS kilometers and THEORICALS kilometers.

CLOCK : The current time.

In France, STAGE = ZR (Régularity Zone)

Details of the different parts of the display:

**First line :**

On the left: kilometers from the begining of the stage (ZR). On the right: partial kilometers.
Green button : VALID / RAZ (RESET).
Short press on VALID / RAZ button puts the PARTIAL kilometers to 000,000.
Long press (4 second) on VALID / RAZ button puts also TOTALISING to 000,000.

**Second Line :**

On the left are the theoretical kilometers calculated by the timer.
On the right, the current time set to 50ms near the clock "organizer".

**3th line :**

On the left is the value typed on the keyboard, which will be used to set the TOTALISING at the next junction, panel, etc. ...

The strength of Rally Pack 2 is that you can set the TOTALIZER to the nearest METER by updating, that is, by forcing it to display the distance you want.

On the right, this is the time that will start the stage. When the current time is equal to the time stage, the timer will start up.

**4th line :**



R: 005   43.58   −06
AV / RET      MOYENNE      ECART

On the left is an indication of early or late (A: forward, R: Delay). The number of meters is shown from 000 to 999 m. In the example the delay is 5 meters.

In the center, this is the current average. Each time the average changes, this value updates automatically. This allows the co-pilot to inform the pilot that there is a change of pace. At the start of the ZR, it is of course the 1st average to keep which is displayed.

On the right, it is about the gap there was at the last registration. Here - 06 means that the TOTALIZER was 6 meters missing which means (among other things) that the turns have been cut slightly. There may be other reasons: bad calibration, improperly inflated tires, imprecise roadbook, ...

## THE MENU



1.MOY      5.CONFIG
2.DIST      6.RAZ ZR
3.H ZR     7.OnLINE
4.UP ZR   8.CAPTUR

Here MENU accessed by pressing key "M" on the keyboard :

There are 4 "hidden" functions :

Menu / 0        Menu / 9
Menu / C        Menu / ▶

These functions will be detailed throughout this manual.

Sub menu accessed by pressing key 5 (CONFIG).



1.PR MOY   5.ETALO
2.PR DIS    6.RAZ M
3.SONDE    7.Mod ET
4.HEURE   8.AUTRES

Sub menu accessed by pressing key 8 (AUTRES).



1.Second   5.Decal
2.ZRlong   6.Recup
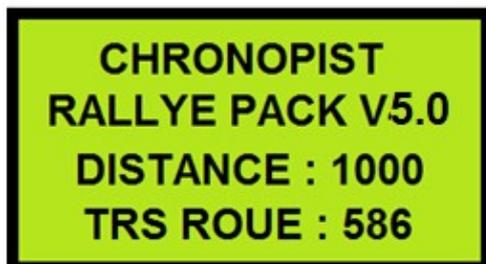3.Bip        7. AF me
4.Multi moyennes

Here is what is displayed on the screen when the timer is stopped:

This is the main page.

If no choice is made within 5 seconds, the screen will return to the main page.



000.000      000.000
CAD OFF   14:25:36
                    14:28:00
_ _ _ . _ _ _
0      45.00      00

---

## INFORMATION DISPLAYED ON START-UP

**CHRONOPIST RALLYE PACK V5.0**
**DISTANCE : 1000**
**TRS ROUE : 586**

When the Rallye Pack 2 is started, the software version and the calibration data are displayed for 4 seconds.

Then the display of distances, cadencer, time, …, appears.

## THE TRIPMASTER

### THE CALIBRATION

**How to make a perfect calibration !**

1 – Put the bumper flush with the starting line of the calibration area.
2 – Switch on the rallye pack 2.
3 – Press Menu / 5.CONFIG / 5.ETALO / SONDE : C
4 – Drive slowly until "TRS wheel: 0000" appears and stop abruptly.
5 – Look where is the starting line (wheel? Mirror? Door? ... It becomes your mark departure).
6 – Roll. The numbers scroll .... These are laps of wheel !
7 – Stop the car at the finish line at the start mark.
8 – Move very slowly until the number becomes the next and suddenly stop the car. Example 00588 => 0589.
9 – Confirm with the button VALID / RESET.
10 – Add the distance between the finish line and your marker (rounded meter) to the calibration distance (eg 1000m + 1 = 1001 m).
11 – Write the value using the keyboard and confirm with VALID / RESET.
12 – The Rallye Pack 2 restarts on its own. The calibration values are displayed for 4 seconds.

If the procedure seems complicated you, you can do a simple procedure but it will be less accurate ... it's a shame !

**How to make a simple calibration :**

1 – Put the bumper flush with the starting line of the calibration area.
2 – Switch on the rallye pack 2.
3 – Press Menu / 5.CONFIG/ 5.ETALO / SONDE : C
4 – Roll. The numbers scroll .... These are laps of wheel !
5 – Stop the car at the finish line at the start mark.
6 – Confirm with the button VALID / RESET.
7 – Write the value using the keyboard and confirm with VALID / RESET.
8 – The Rallye Pack 2 restarts on its own. The calibration values are displayed for 4 seconds.

Of course, I recommend the 1st method ... which takes into account the 1st and last revolution of the wheel, which may not be negligible in a short calibration zone.

Whatever method you use :

**⚠️ ALWAYS CHECK THE DATA ARE LOGICAL:
Distance / Number of laps = circumference of the wheel ! ⚠️**

Example: Distance = 3001 meters Number of laps = 1765

3001/1765 = 1.70 m, which corresponds to an average wheel.

If one of the calibration values is zero (0000 turns of the wheel for example) the TRIP will not be able to measure distances !!!

SONDE INDUCTIVE

If the Distance and / or number of wheel revolutions data are incorrect, when starting the RALLYE PACK 2, instead of having this message :

> CHRONOPIST
> RALLYE PACK V4.3
> DISTANCE : 1000
> TRS ROUE : 586

You will have this one  :

> CHRONOPIST
> ERREUR ETALONNAG
> DISTANCE : 0000
> TRS ROUE : 586

Here the distance is 0000 so the TRIP cannot measure a distance.

Remember to ALWAYS write down your calibration data !!

**⚠️ REMINDER: only one metal target per turn of the wheel is required.**

The Rallye Pack 2 can however work with 2, 4 or 5 targets.
In Menu / 5.CONFIG / 3.SONDE you will be sure to choose the number of targets.

> DIVISION SONDE
> Par : 1 2 4 5
> CHOIX : 2

You choose with keys 1 2 4 or 5,
And you validate.

Just because you have more targets doesn't mean you're more precise!

The accuracy is also good with a single target.

The pulse counter for calibration is limited to 9999. The circumference of a wheel averages 1.8 meters. We can therefore cover a calibration zone of 1.8 x 9999 = 17998 meters. Such a distance covers all regularity rallies because no calibration zone is so long. This is true if there is only one impulse per revolution of the wheel!

If you have 5 pulses (the 5 studs of the wheel for example), this reduces the distance to 17998/5 = 3600 meters ! This can be annoying if you have a 10 km calibration zone !

So don't forget to adapt your pulse division according to the number of target on your wheel !

**How to calibrate without rolling :**

This procedure is useful when you change the set of tires during a rally, for example at MCH where you fit studded tires when you were off with snow tires.

1 – Switch on the rallye pack 2.
2 – Press Menu / 5.CONFIG / 5.ETALO / MANU : R
3 – Write the value with keyboard (Exemple : 0578).
4 – Confirm with the button VALID / RESET.
5 – Write the value (distance in meters) using the keyboard and confirm with VALID / RESET.
6 – The Rallye Pack 2 restarts on its own. The calibration values are displayed for 4 seconds.

REMINDER: You must of course know the calibration data for each set of tires! (To be done before the rally).

## SETTING THE TOTALIZER :

With the keyboard, you can prepare in advance (before 500 m) the value you want to give the totalizer.

If the next junction, panel, etc. ... indicated in the road book is, for example : 020,250 kms, you type directly "0" "2" "0" "2" "5" "0" on the keyboard.

This value will register on line "RECAL".

C key (CLEAR) clears when you make a mistake.

Check that the value you return is correct! It is better not set the totalizer rather than return a false value! 202,500 instead of 020,250 and your trip will be completely FALSE !

You expect to arrive at the intersection, panel, etc. ... and when you are there (exactly), you press the VALID / RESET button. Thus TRIPMASTER will take the new value and partial resets to 000,000.
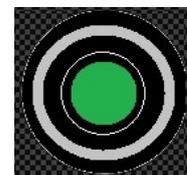
In this way you make an ultra precise ALIGNMENT of your TRIP which must have shifted because of slightly cut turns.

Of course, if you have passed the intersection, sign, etc ... ESPECIALLY do not validate !!! You will introduce an error if you fail to correct it ! The partial will not be reset to 000,000 but that's not a big deal ... You guide yourself with the TOTALIZER. You have to be more focused at the next crossroads ...

**ADVANTAGES of setting totalizer :** On the one hand, you reset the TRIP to the nearest meter but at the same time you set the PARTIAL to 000,000. On the other

hand, you can keep your eyes on the road to guide the pilot. You just have to keep your finger on the VALID / RESET button and press it in the right place.

When you readjust the TRIP, the difference between what it measured and the resetting distance is displayed at the bottom right (Deviation).
For example your TRIP measured 020.244 Kms at the intersection, sign, etc… and the distance should be 020.250 kms. 6 meters are therefore missing.
This value is displayed (- 06 : 6 meters missing to reach the correct value) and gives you a very valuable indication because you know whether you have managed to keep a good trajectory or not.

Depending on this value you may or may not modify your calibration to be better on the rest of the ZR. (See: Calibration modification while driving).

**IMPORTANT :** After each adjustment, check the value of the GAP. If this is between -20 and + 20, that's quite logical. If "> 99" appears, your TOTALIZER was over 99 meters away !
99 meters is a lot! Either you made a mistake when entering the reset value, or you did not reset in the right place, or (and it sometimes happens) there is a distance error in the Road Book! In this case it may be necessary to CANCEL the registration! It's up to you to make the right decision and quickly ...

On the other hand, there is a particular resetting where you will have "> 99", this is when you took the wrong road, traveled 1 km before turning around and you stalled at the crossroads where you took the wrong direction. Obviously, your excessively high 2kms trip (round trip) will lose 2kms when resetting. So a gap "> 99" will of course appear.

You should therefore know how to interpret this DISTANCE display according to the way in which you have driven between 2 boxes of the Road Book, the distance traveled, etc. A gap of 50m over a partial of 12 km and over a partial of 400 m obviously does not have the same meaning ...

## CANCELLATION OF THE LAST RESET

Sometimes you do not pay attention to what is written on the RECAL line. If by mistake you press key 4 on the keyboard, in RECAL it is written 4_ _._ _ _! When you press VALID / RESET to set the PARTIAL to 000,000 at the next crossroads, the TOTALIZER will go to 400,000 kms !!! And yes, if in RECAL it is different from _ _ _._ _ _ the entered value will automatically overwrite that of the TOTALIZER. The "_" are equivalent to "0".
This can be unfortunate since the TOTALIZER is completely wrong.

Thanks to the "C" key, which must be kept pressed for 4 seconds, this adjustment can be canceled! Thus we reset the mileage of the TOTALIZER to the value it should have had if we had not readjusted.
It takes into account of course the xx meters covered since the readjustment and the decision to cancel it!

This can therefore be used in the event of improper handling (completely absurd adjustment following the involuntary pressing of a key) but it can also be used in case of doubt.

**Example:** on the road book, the next junction is at 012.350. You decide to fail. You type in the value and wait to arrive at the crossroads. Once there, you validate but you realize that the crossroads are very large and you are not at all sure that you have failed in the right place! Rather than making the TOTALIZER more wrong than it was, we can undo this adjustment and reset to the next box in the road book if this makes more sense.

## THE +2 / -2 FUNCTION

Always in order to measure the kms as best as possible, on the keyboard you have 2 buttons: +2 and -2 which allow you to add or subtract 2 meters at any time.
If you see that the pilot has cut a turn, you can add 2 meters, 4 meters, 6, 8… on the fly so as not to shift too much. This is the experience that makes the difference.

On a regularity rally, all the difficulty lies in the correct measurement of the distance. Sticking with the distance indicated by the "be green" timer is good, but if you misjudge your actual distance on the road, you will necessarily be out of step even if you have managed to keep the green LED on.

In a well cut left pin we can gain 8 to 10 meters! You will then have to press the +2 key 4 or 5 times.

## THE REVERSE TURN FUNCTION

On the keypad you have the R key. When you drive normally forward the TRIP "increases". It counts the meters you walk.
If you keep the "R" key pressed the TRIP will "decrease".

When to use it ?

You went straight into a farmyard. No room to maneuver to turn around, only possibility: Reverse!
As soon as the car is reversing, you keep the "R" key pressed. As soon as the car comes to a stop, you release and set off again. Thus you will have removed the few tens of meters in excess.

If at a crossroads you are completely wrong and you have made 1 km in the wrong direction, instead of keeping the "R" key pressed throughout the return to the crossroads, you can prepare (in RECAL) the indicated distance on the roadbook and validate it when you get there. It's easier !
All you have to do is put gas to catch up with the delay because the cadencer will be much further ahead than you!

## CHANGING THE CALIBRATION WHILE RIDING

Remember, when you readjust your TRIP, at the bottom right of the screen, the difference between what you measured and the value at which the TRIP should have been, is displayed! To be analyzed with caution…. But it may be a sign that you have not calibrated well (unlikely) or just that the road is so twisty with high averages that it is impossible to keep the lines. Suddenly, you cut the turns to try to keep up the pace and inevitably you measure less meters than you should!

In this case it would be wise to increase your standard slightly in order to make the TRIP believe that your wheel diameter is larger. This is possible even when driving on the ZR.

For this : Menu / 5.CONFIG / 7.MOD ET. (MODification ETalonnage)

With the keys +2 (adds 1m to the calibration distance) or -2 (takes away 1m from the calibration distance), you can change your calibration.

If the road becomes less winding and you are able to hold the trajectories better, remove the extra meter (s) you added to go back to your original calibration.

⚠️ When switching the Rallye Pack 2 off and on again, the calibration changes are retained.

Obviously this part is reserved for a "INFORMED PUBLIC!" ". Before going to change the calibration in ZR according to the profile of the road, it is better to have understood all the intricacies of the regulation and master the device perfectly.


# THE PROGRAMMABLE CADENCER


## PROGRAMMING OF AVERAGE  (before each ZR)

In order to obtain perfect theoretical mileage, the cadencer will change its average on its own at the "right time". For this, it will use the distances and averages that you have programmed before the ZR.

You can program up to **48 distances and averages** and this number can be infinitely increased if you enter the data during the ZR. The main thing is to have programmed the averages and distances before they change of course.

If you don't have time to program the timer before the ZR, that's okay. **It suffices that at least the first average and distance are programmed**. They can be programmed in 5 seconds! The other averages and distances can be programmed even if you have already left on the ZR.

To programm averages : Menu / 1.MOY.

On screen we can read :

MOY [ 01 ]    45.00
➡ : SUIV
M : PREC       000.000
C: CLR      VAL : FIN

01 = first average    : 45.00 = 45.00 kms/h
► : To go to the next average.
M : Go back to the previous average.
C : C key to delete.

VAL: Validate (VALID / RAZ) when all the data is entered to return to the main display.

000,000: The TOTAL tripmaster mileage is displayed so that you can have an eye on the distance if you are programming in liaison so as not to get lost!

You enter the average on the keyboard (example: 41.30): you type: "4" "1" "3" "0".
The numbers "overlap" those that were displayed.
If you made a mistake: C key = Clear and _ _. _ _ is displayed.
To validate the average and move on to the next [02], press the ► arrow.
When the last average is entered, validate with VALID / RAZ.

Tip: After entering the last average, go back with the "M" key to check all your data.

Note: a "_" is automatically replaced by a "0". If you need to program 45.00, you can type only "4" and "5" when you have:
_ _. _ _. So you save a lot of time! 45. _ _ will become 45. 00

You can exit programming mode at any time by pressing VALID / RAZ.
After 48 averages [48] we come back to the first [1].
The cadencer can therefore manage 48 averages without having to touch it.

**To know :**

- For a ZR comprising more than 48 means (for example 52), the first 48 are programmed and during the ZR, when the first 4 have been carried out, we modify the values of the means [1] to [4] without forgetting to ALSO program the distances from [1] to [4]. So when the cadencer has finished with the average [48], it will continue with [1], then [2], etc ... In this way, the number of programmable averages is infinite. It's up to you to enter them at the right time and to know where you are.

- You have programmed only 3 averages and therefore 3 distances: example:

Averages: 45.20; 46.30; 47.50; 00.00; 00.00; … ..
Distances: 012,000; 018,520; 025,350; 000,000; 000,000; … ..

The cadencer will automatically stop at 025,350 kms which corresponds to the average 47.50 km / h. Having no further data after the 47.50 km / h, he stopped!

- The averages can be viewed (without modifying them) just by using the "►" arrow and / or the "M" key (previous) in the 1.MOY menu. This makes it possible to check that there were no errors during programming.
To stop viewing the averages: VALID / RAZ.

## PROGRAMMING DISTANCES (before each ZR)

For programming distances, same principle: Menu / 2.DIS.
On the screen we can read:
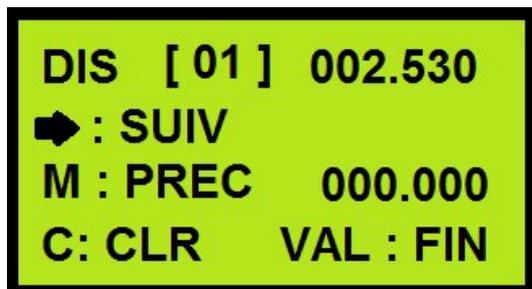


01 : 1st distance 002.530 = 2.530 kms
► : To go to the next distance.
M : Go back to the previous distance.
C : C key to delete.
VAL : Validate (VALID / RAZ) when all the data is entered to return to the main display.
000,000: TOTAL kms of the TRIP.

We enter the distances to the nearest meter. Example: for a distance of 2,354 km, you type: "0" "0" "2" "3" "5" "4". Do not forget the "0" at the beginning of "002.350" otherwise you will write 235.400 kms!

To validate and go to the next one: ►                To go back: **M**

When all the distances are entered, we validate with: VALID / RAZ.

- You need as many averages as distances !!! The last distance we enter is the END of the ZR!

- The distances **MUST BE INCREASING** !!!

**Example of ZR:**

You must drive from 000,000 to 2,350 kms at 48.00 km / h, then from 2,350 to 6,250 kms at 50.00 km / h, then from 6,250 kms at the end (10,400 kms) to 42.00 km / h.

MOY :    48.00          50.00          42.00

000.000        2.350          6.250          10.400 kms

**NO SUBTRATIONS TO MAKE!** We enter the mean change distances without asking any questions. The data to be programmed are:
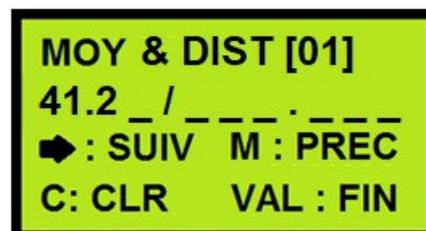
**MOY :**          **DIS :**
[1] : 48.00          [1] : 002.350
[2] : 50.00          [2] : 006.250
[3] : 42.00          [3] : 010.400  (End of ZR). The cadencer will stop at 010,400

## PROGRAMMING AVERAGES & DISTANCES (together)

From version 5.0 it is possible to program at the same time the "Average & DISTANCE" TORQUES in the main memory



To do this: MENU / ►
And we write the mean and the distance.

You can even COPY the ZR programmed in the MAIN memory into the AUXILIARY memory by giving it a ZR number.

To do this: MENU / C
And we write the number of ZR, then we validate.

```
COPIER ZR en AUX
Num ZR : _ _
C: CLR    VAL : FIN
M:ECHAP
```

This method is suitable for those who prefer to program by "couple", that is to say the average and the distance at the same time.

## MEMORIZATION OF ALL RALLY ZR

From version 4.0, the Rallye Pack 2 can memorize **60 ZR** of 48 average & distances each!
This function is very practical because all the data is entered and you just have to "call" the ZR that you want to do just before taking the start of it. It takes 2 seconds. So when you have a very short link in 2 consecutive ZRs and a large number of average & distances to program, don't panic, they are there in auxiliary memory! In 2 seconds the cadencer will be ready!

Before programming a rally, **remember to clear the auxiliary memory** of any data it might contain (from the previous rally). This will prevent you from making typing errors. The boxes will be "empty": _ _. _ _ for averages and _ _ _. _ _ _ for distances.

**STORING RALLY AVERAGE in AUXILIARY MEMORY**

The easiest way is to program all the averages of all the ZRs first and then to do the distances second.

Menu / 5.CONFIG / 1.PR MOY

```
MEMORISER MOY.
Num ZR  :  _ _
C : CLR    VAL : FIN
M : ECHAP
```

We enter the number of the ZR we want to program and VALIDATE.

Example: 01 for ZR1, 02 for ZR2, etc.

Then we find a display quite similar to the programming of averages in main memory, except that the distance from the TOTALIZER is replaced by the number of ZR that we program.
Enter the average on the keyboard and move on to the next using the arrow.
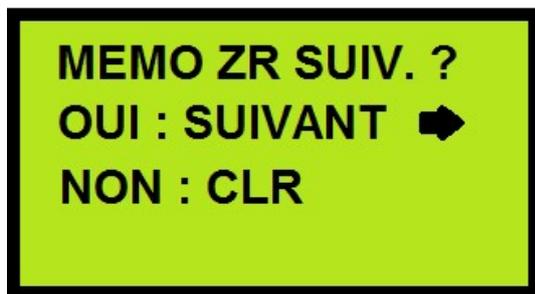
```
MOY [ 01 ] _ _ . _ _
➡ : SUIV
M : PREC    ZR : 01
C: CLR    VAL : FIN
```

When the x averages of ZR 01 have been entered, you can go back with the "M" key to check them.

When it's all good, we validate with VALID.

After validation, we arrive on the following menu which asks us if we want to memorize another ZR:



As long as we have not entered the xx ZRs of the rally we will continue to program the averages by pressing the arrow.

And we do the same with the ZR 02, 03, 04 ...

When all the averages of all the ZRs are stored, the menu is exited with CLR.

**STORING RALLY DISTANCES in AUXILIARY MEMORY**

We must now program all the distances of all the ZRs. This is the same principle as for the averages.

Menu / 5.CONFIG / 2.PR DIS

You enter the ZR number you want to program and so on, as with averages.

Note that the averages and distances thus memorized in auxiliary memory cannot be used by the cadencer. They must be loaded into main memory before each ZR. See next chapter.

## LOAD a ZR IN MAIN MEMORY

If all of the rally's ZRs have been stored in auxiliary memory, the data must be "loaded" into the main memory before each ZR.
To do this: Menu / 4.UP ZR

This page appears :



On the keypad, you indicate the number of the ZR you are going to perform: example 01.
And we VALIDATE.

Data is loaded in 2 seconds.

Message: OK, in progress.

The data loaded in this way can be accessed (and modified) with M / 1 or M / 2 and M / ► (from version 5.0).
And of course the cadencer will be able to calculate the theoretical kilometers with the right data.

## TRIGGERING THE CADENCER

There are 2 ways to trigger the timer: Automatic and manual (Start on Line).
Obviously, the "automatic" method should be favored because it is the most precise.

**AUTOMATIC MODE :**

**It is therefore necessary to program the triggering time before departure.**

To program the departure time: Menu / 3 .H ZR

HEURE DEPART ZR
H ZR : _ _ : _ _ : _ _
M : ECHAP 11:35:21
C : CLR    VAL : FIN

=> Departure time from ZR: HH: MM: SS
=> C key to delete
=> M key: to exit this menu if you entered it by mistake.

For a departure at 3:30 p.m. and 00 seconds, you will enter: "1" "5" "3" "0" "0" "0".
Then we validate with VALID / RAZ.
If you are wrong, key C to erase.

**It is ABSOLUTELY necessary to have programmed the departure time !!!!!** If it's 3:29:59 PM and you have to leave at 3:30:00 PM and your ZR time is set for 2:00 PM, then it's screwed up! No time to program the time ... The timer will remain at 000,000!

The cadencer is triggered ONLY: WHEN THE CURRENT HOUR **IS EQUAL** TO ZR HOUR.
If it's 3:30:05 PM and you schedule 3:30:00 PM, that won't work either.

**To remember, when you calculate your departure time in ZR on your roadmap, PROGRAM the departure time immediately!**

As there will always be people dizzy ... a little trick can save your life! There are two other possibilities to start your cadencer:

1st: Menu / 0. By pressing "0", the current time is rounded up to the next minute and serves as the start time.

**Example:** it is 18:20:46 and you press Menu / 0, the cadencer is programmed to start at 18: 21: 00 in a flash. With this method, you don't need to type the numbers one by one. It is enough to do it **in the minute preceding the departure**.
If you realize 3 seconds before departure that you have not programmed the departure time from ZR, this solution can still save you. It only takes a second to tap Menu and 0.

2nd: Menu / 9. Retroactive timer! What is a retroactive timer?

It is a timer that can be asked to recalculate EVERYTHING from the ZR departure time at any time.

This is particularly valuable if:
- we forgot to schedule the departure time.
- we realize that we made a mistake in programming an average or a distance.
- we have more or less captured an unknown distance (Menu / 8).

## Case of forgetting to program the departure time from ZR:

You are on the start line, you have programmed all your averages and distances but you forgot to program the start time from ZR! When the departure time arrives, you tell the pilot: Go! Only here is the cadencer displays: CAD OFF !!! The leds remain off !!! No early or late !!! Only the TOTAL and PARTIAL kilometers advance !!! One glance at the ZR departure time and you quickly see that you forgot to set the time ... Do not panic !
The error can be made up. For that :
- Program the time you were supposed to leave with Menu / 3.H ZR and VALID at the end.
- Then Menu / 9 and your timer starts up as if it had triggered normally on time.
You just have to accelerate or brake to get green.

## Case of the programming error of the timer:

We regulate on an average of 48.00 and we will go to 35.00 (according to the roadbook). At the change the average goes to 45.00 instead of 35.00 because we made a mistake during the programming. Do not panic ! We go to the averages programming menu, change the false average and validate. Then just press Menu / 9 and the RALLYE PACK 2 instantly recalculates the theoretical kms since the departure time from ZR.

## Case of too late distance capture:

You have to capture a distance for a change of average at an unknown distance and you arrive there late because blocked by traffic. So you've been regulating on the old average for too long. It does not matter, you capture the distance with Menu / 8 and then you do Menu / 9 to remake everything on the device. You leave with a fair theoretical mileage!

A retroactive cadencer is a cadencer that you can switch off in full ZR and restart at any time! It will give you the correct theoretical mileage based on the programmed data from the ZR departure time.


## MANUAL MODE : **START ON LINE**

This function allows you to start the timer manually. Normally it is started by programming the start time, but there are a few cases where it is useful to start it manually.

For example, when you need to start the timer while crossing a line while rolling. This happens with our Belgian friends where the departure in ZR is done in 2 stages.

It also happens in some rallies that you are made to regulate on a circuit where you are given a warm-up lap and when crossing the start / finish line you have to start regulating over 2 or 3 laps.

To use this function: Menu / 7.OnLine

On the screen we can read :



```
DECLEN. ON LINE

START : VAL
ANNUL : R
```
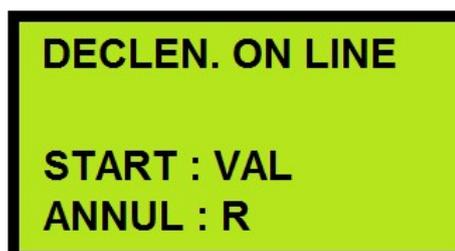
By pressing VALID / RAZ, the cadencer starts counting the theoretical kilometers according to what has been programmed (averages and distances) from 000,000.
At the same time it resets the TOTALIZER to 000,000 (since we are driving it will necessarily be at a non-zero value).
And finally, the time at which you press VALID / RESET is automatically set to HOUR ZR.
So, if for one reason or another you have to use the timer's RECALCULATION function (Menu / 9), it can do so because it will know the start time of regulation.

## MANUAL STOP OF THE CADENCER

Normally the cadencer stops by itself when there are no more averages and distances to calculate the theoretical kms. However, from version 4.9 you can stop the timer by doing: Menu / 7.OnLine

In this case you will have the menu opposite:

This is useful when you are experimenting at home and want to stop the cadencer without having to switch off the RALLYE PACK 2.

Menu / 7 is therefore used to start and stop the timer.

```
ARRET CADENCEUR

OUI : VALID
NON : ECHAP (M)
```

## COUNTDOWN BEFORE DEPARTURE

When the cadencer is stopped, it is displayed CAD OFF.
If you have programmed a departure time, during the minute before the departure time you have a countdown which is displayed (from 60 sec to 0).

```
000.000      000.000
CAD OFF   14:25:36
              14:28:00
_ _ _ . _ _ _
   0     45.00     00
```

Here there is CAD OFF because the departure is in:

14 :28 :00 – 14 :25 :36 = 2 minut 24 second

```
000.000      000.000
GO : 15s   14:27:45
              14:28:00
_ _ _ . _ _ _
   0     45.00     00
```

Here there is GO: 15s because the start is in:
14 :28 :00 – 14 :27 :45 = 15 second

This is useful for announcing the departure to the pilot and not forgetting to program the departure time.

## START OF THE CADENCER ON A NON-ZERO VALUE

On most rallies, the ZRs all start at km: 000,000, but in some events the ZR 01 starts at 3,450 km (example), the ZR 02 starts at 20,360 km, the ZR 03 at 50,850 km, the ZR 04 at 64,250 , etc.

The RALLYE PACK 2 alleviates this by introducing an "offset" in the starting mileage of the cadencer and the TOTALIZER.

**DECAL. CADENCEUR**
**Kms : _ _ _ . _ _ _**
**M : ECHAP**
**C : CLR     VAL : FIN**

Menu / 5.CONFIG / 8.AUTRES / 5.Decal
Just type in the mileage you want it to start at (on the start line) and validate.

The TOTALIZER will be set to this value and the timer will start from this same value.

A "D" will flash at the bottom of the screen to indicate that you are starting with an Offset timer value.
At the end of the ZR, the offset is automatically disabled. It will therefore have to be redone each time a new ZR leaves.

## STOPPING THE CADENCER

At the end of the ZR, the cadencer automatically stops calculating the theoretical kilometers. Theoretical Kms are no longer displayed. Instead it is written:
CAD OFF.
The remote LEDs also stop signaling early or late.

## THE DISPLAY DRIVER

Put on a cap for the sun !!!

One of the many strengths of Rallye Pack 2 is that it allows pilot to regulate himself thanks to his row of LEDs that he just has under the eyes (IN THE AXIS and ABOVE the STEERING WHEEL for OPTIMUM EFFICIENCY !!).

**I repeat: IN THE AXIS and ABOVE the steering wheel !**

- difference between -2 and +2 meters:

- difference between 2 and 5 meters (delay):

- difference between 5 and 10 meters (delay):

- difference between 10 and 15 meters (delay):

- difference between 15 and 25 meters (delay):

- difference of more than 25 meters (delay):
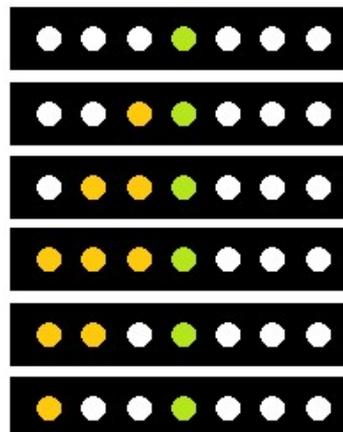
The +2 / -2 range may seem very narrow ... It is! But with a little practice you will find that it is quite easy to stay there. To go to "0" it is mandatory!

On the device, we can see the difference in real time displayed at the bottom left:



A / R: Advance / Delay from 000 to 999 meters.
Example: R: 005          we are 5 meters late.

If at any point you have a big delay (250 meters for example), it is up to the co-pilot to inform the pilot of the distance to catch up.

Since version 3.x is marketed, 2 other displays with LCD screen are available with display of TOTAL, PARTIAL and AVERAGE distance in progress, Advance / Delay from -999 m to + 999 m and a beep to regulate at the ear.

## SETTING THE CLOCK

To adjust it:

Of course, you have to stand in front of the organizer clock and turn on the device, which will be powered independently with its 9V battery. The switch is located on the left side of the device.

Menu / 5. CONFIG / 4. HEURE

The time setting takes place in 2 steps:

- approximate time setting:

Type on the keyboard one hour slightly ahead of the organizer clock. For example, it is 10:20:55 on the clock so you enter 10:21:05 on the keypad.
You wait for the clock to arrive at 10:21:05 and you try to validate with VALID / RAZ so that it is as much synchro as possible. Pretty much because it's impossible to be precise! Once validated, only the seconds appear on the screen. It is time to set them precisely.


- exact time:

Using the +2 (add 50 ms) and / or - 2 (remove 50 ms) keys, you have to adjust the seconds so that they are perfectly synchronized.
When the seconds are synchro, validate with VALID / RAZ.
The clock is on time!


DO NOT FORGET TO TURN OFF YOUR BOX otherwise the 9V battery will discharge very quickly !!

On a rally of several days, check and readjust the time EVERY day !!

# THE CHANGE OF AVERAGE OVER AN UNKNOWN DISTANCE

In some events, the organizers "increase" the difficulty by putting changes in average at unknown distances (012.5xx) thus making (theoretically) impossible the use of programmed timers.
The Rally Pack 2 makes it possible to overcome this "difficulty" by making a CAPTURE of the value of the TRIP at the place of the change in average, as if the distances had been programmed in the cadencer.

Example:
Or a ZR 28,500 km long with 3 changes in average per km: 4,250, 18.4xx (at the STOP sign), 22,150.
The 4 averages of the ZR are: 45.00, 48.00, 42.50 and 49.90.

Here there is a missing piece of data: 18.4xx which prevents programming the timer. The change will take place between 18.400 and 18.499 but we do not know where!?!?!

It doesn't matter if there is any missing data! We will program as follows:
Remember: 4 averages => 4 distances (always increasing).

| MOY :        | DIS :                                            |
|--------------|--------------------------------------------------|
| [1] : 45.00  | [1] : 004.250                                    |
| [2] : 48.00  | [2] : 018.499   The xx are replaced by 99… the maximum! |
| [3] : 42.50  | [3] : 022.150                                    |
| [4] : 49.90  | [4] : 028.500 END of ZR                          |
| *[5] : 00.00* | *[5] : 000.000*                                 |

Shortly before the famous STOP where we have to change the average and for which we do not know the exact distance we press: Menu / 8.CAPTU.
On the display, the kms of the TOTALIZER scroll. The future average is also displayed.

When you reach STOP, you press VALID / RAZ and the distance thus captured (for example 018.452) immediately replaces 018.499 and the cadencer changes its average.

To be as precise as possible, you must try to reach the STOP slightly in advance (+10 m) because the timer must not have already reached 018.452 kms otherwise you will have clocked on the previous average a bit too much of time.
Here is a possible difficulty bypassed ...

Of course, the fact of not having a precise distance because it is the one YOU measured, will give you theoretical kms that are a little less accurate. The organizer may have measured 018.460 and you 018.452 ... But everyone will have the same problem. It's up to you to readjust the TRIP at the previous crossroads and follow beautiful paths.

If the averages are also unknown (discovered at the last moment displayed on a panel) this function also allows to enter the average before making the capture.
In the table of averages you will have to enter any average (44.44 km / h for example, especially not 00.00). You will change it when you capture the distance.

## ZR OVER 100 kms

There may be RZs over 100kms. You will have noticed that the displayed distances go up to 999,999. So you can perfectly measure distances greater than 100 kms.

## RESET DATA in MAIN MEMORY

Reminder: the MAIN MEMORY is the memory with which the cadencer works, that is to say with which it calculates the theoretical kms.

To erase all averages and distances in main memory:

Menu / 6.RAZ ZR.

This has the effect of putting the first average [1] at 45.00 km / h and the first distance [1] at 050,000 km. Everything else is at _ _._ _ (avg) and _ _ _._ _ _ (kms). Confirmation of deletion is requested. Erasing the 48 averages & distances is done in 2 SECONDS.

## RESET DATA in AUXILIARY MEMORY

Reminder: the AUXILIARY MEMORY is the memory in which all the ZRs of the rally are stored. The cadencer cannot calculate theoretical kms from these data. They must be "sent" to main memory before each ZR.

To erase all averages and distances in the auxiliary memory :

Menu / 5.CONFIG / 6.RAZ M.

This has the effect of putting the 60 ZR at: _ _._ _ (avg) and _ _ _._ _ _ (kms). Confirmation of deletion is requested. The erasure of the 60 ZR of 48 average & distance is done in 2 MINUTES.

## THE MULTI-AVERAGE MODE

Instead of giving averages and distances at which these averages must be changed, some organizers give a few minutes before the start a table with times of passage every 250 meters for example. The RALLYE PACK 2 allows you to manage these regularity zones by entering the lap times instead of the distances.

| ZR4 | Distance | Time (min : sec) | Distance | Time (min : sec) |
|-----|----------|------------------|----------|------------------|
|     | 250      | 00 : 21          | 5000     | 06 : 00          |
|     | 500      | 00 : 43          | 5250     | 06 : 22          |
|     | 750      | 01 : 01          | 5500     | 06 : 46          |
|     | 1000     | 01 : 24          | 5750     | 07 : 02          |
|     | 1250     | 01 : 47          | 6000     | 07 : 25          |
|     | …        | …                | …        |                  |

To do this, you have to access the "MULTI-AVERAGE" menu.

Press : Menu / 5.CONFIG / 8.AUTRES / 4.Multi moyennes
On the screen we can read :

**MULTI_MOYENNES**
**ON / OFF ( C ) : OFF**

C: C key to activate / deactivate multi-average

Press the C key to activate the multi-average mode.

On the screen we can read 2 additional lines:

**MULTI_MOYENNES**
**ON / OFF ( C ) : ON**
**PAS FI / VA ( R ) : FI**
**PAS : 0250 m**

R: R key allows to choose between a fixed or a variable STEP ("PAS" in french).

The organizer generally gives a fixed PAS (example: every 250 meters), but he can also give times of passage with variable distances (250 m, 550 m, 800m, 1200m, ...) which makes the speed a bit difficult.

**1st case: Identical interval (fixed step)**

Using the keyboard, we choose the STEP from 0000 to 9999 m (example: 0250) and we validate with VALID / RAZ.
The default screen is displayed with a flashing "M" at the bottom, signifying that we are in MULTI-AVERAGE mode.

Now that we are in MULTI-AVERAGE (M flashing), when you press M: Menu, it is a little different:

**M. MULTIM. CONFIG**
**1. DIST / TEMPS**
**2. RAZ**
**3. H ZR ( ou M / 0 )**

This is the Menu which allows programming the ZR.

M. MULTIM. CONFIG : Used to exit Multi-Average mode.

DIST / TEMPS : By pressing the "1" key, the times are programmed (00:21 then, 00:43, etc.). Instead of entering averages in km / h, we enter the times. There are no distances to enter because we are in FIXED STEP. The RALLY PACK 2 will transform these times and distances on its own into km / h and the lead / lag will be managed as if we had programmed averages.

2. RAZ : Allows you to erase all times.

3. H ZR (ou M / 0) : Allows you to program the departure time in ZR. This should be done first (before programming the times). Why ?

Usually we are given the sheet with the times a few minutes before departure. You may not have time to plan everything before you go!
It does not matter. You can start programming what you can before you go and the rest while driving.
Thus, if you have programmed your departure time in ZR before, the timer will go off by itself at the scheduled time while you quietly continue your programming.

**2nd case: Not identical interval (not fixed step)**

To choose the "NOT FIXED STEP" mode, return to the Menu: M (twice) and choose "VARIABLE" with the R key, then validate.

Then it's the same thing, we program the time and enter the pairs (TIME / DISTANCES) with Menu / 1.
And yes, here you also have to enter the distances since the STEP is not constant.

Note: If you have not finished programming the times / distances before the start in ZR, you will continue to program at the start of ZR. In order to be able to guide the driver because it is still necessary to follow the roadbook, the display of the total distance is displayed on the time / distance programming screen.

To return to "normal" operation of the RALLYE PACK 2, namely: programming of averages in km / h and distances, Menu / Menu / C / VALID.
Thus the flashing "M" disappears.
By pressing M: Menu, we find our classic menu.

## BLOCKING OF CERTAIN MENUS in ZR

When you are in ZR you can use the Menu to perform various actions such as:

- Program averages M / 1 (if you have not had time to program them all before departure, correct a false average, etc.).

- Program distances M / 2 (for the same reasons as above).

- Modify the Menu / 5.CONFIG / 7.MOD ET calibration to refine its measurement of distances.

- Capture a distance and / or an unknown mean with M / 8.

- Restart the cadencer and have it recalculate EVERYTHING from the ZR departure time with M / 9.

On the other hand, the following functions must in no case be called when one is in ZR:

- M / 0: Quick programming of ZR time
- M / CONFIG / 4: Setting the internal time of the RALLYE PACK 2
- M / CONFIG / 5: Calibration
- M / 6: memory reset

To avoid panic during ZR with an accidental call to one of the 5 functions above, they are deactivated when the timer is on!

**IMPOSSIBLE !**
**ZR EN COURS !**

If these functions are called during ZR (timer running), the message opposite is displayed.

Then the normal display returns after 4 seconds. Thus we avoid doing big silly things.

- M / 3: Setting the departure time in ZR. This function remains accessible although we are not supposed to come to it in ZR. But in the event of an error in the ZR start time, it must be possible to come and modify it even if the timer is started.

## MULTI- AVERAGE MODE START WARNING

When switched on, the RALLYE PACK starts up in the mode in which it was used for the last time.
There are 2 operating modes:

- **"NORMAL" mode :** where averages and distances are programmed. Usually this mode is used on most rallies.

- **Mode known as "MULTI-AVERAGE" :** where one program times of passage every 250 meters for example. These times are given shortly before the ZR on a sheet of paper.
Reminder: an "M" flashes at the bottom of the screen when you are in this mode.

When the RALLYE PACK is switched on, a warning message tells you if you are in "MULTI-AVERAGE" mode.

Message :

**ATTENTION**
**MULTI MOY**
**ACTIF**
**M CLIGNOTANT**

To get out : Menu / Menu / C / VALID.

However the menus are quite different in "NORMAL" and "MULTI-AVERAGE" mode so you should quickly find that you are not in the right mode!

## DISPLAY OF METERS

You can choose to display or not the meters of TOTAL kms, PARTIAL kms and CADENCEOR kms. By default the meters are displayed but as they generally move very quickly, they can "disturb" in some people the correct reading of the distance.
DISPLAY OF METERS or NOT

To configure the meter display : Menu / 5.CONFIG / 8.AUTRES / 7.AF me.

This menu appears :

AFFICHAGE METRES
OUI : 1   NON : 2
CHOIX : 1

Make your choise : 1 ou 2 and validate.

Although the meters are no longer displayed, the distance measurement remains to the meter and resetting to the nearest meter is still possible.

## ZR LONG OVER 48 AVERAGES    From V4.6 (28/02/2018)

Some organizers have very long ZRs (over 100 kms) and there can be a lot of average changes in the same ZR.

Unfortunately, the cadencer (main memory) can store "only" 48 averages.
The Rallye Pack 2 has been modified in order to be able to manage 5 ZR of 3 x 48 = 144 averages each.

The cadencer will work directly with the data stored in the auxiliary memory. No need to load them into main memory (where they won't fit anyway if there are more than 48).
Thus we have 5 "LONG" ZRs which are stored in pieces.

ZR 1 « long » stored in ZR 01 + ZR 02 + ZR 03
ZR 2 « long » stored in ZR 04 + ZR 05 + ZR 06
ZR 3 « long » stored in ZR 07 + ZR 08 + ZR 09
ZR 4 « long » stored in ZR 10 + ZR 11 + ZR 12
ZR 5 « long » stored in ZR 13 + ZR 14 + ZR 15

Exemple :

We have a ZR 1 which has 102 averages (and as many distances).
The first 48 averages and distances are programmed in ZR01 in auxiliary memory, then the next 48 in ZR02, then the 102 - 96 = 6 remaining in ZR03.

Instead of doing M / 4. UP ZR to "load" the ZR you want to do, you simply do :
Menu / 5.CONFIG / 8.AUTRES / 2.ZRlong.

The following menu appears. It allows you to choose the ZR 1, 2, 3, 4 or 5 you want to do.

0: allows you to stay in "normal" mode, ie the timer works with the main memory.
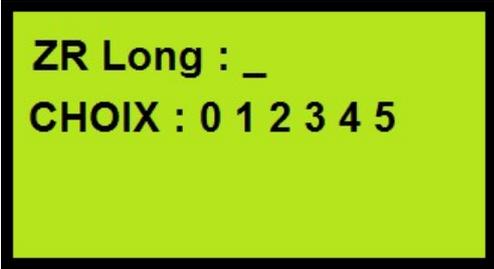
```
ZR Long : _
CHOIX : 0 1 2 3 4 5
```

You choose the ZR and validate. The ZR number flashes at the bottom of the screen and the first average appears.

You just have to program the departure time from ZR with M / 3 or M / 0.

IMPORTANT NOTE: It is **not possible to use the M / 9 feedback** function in this operating mode.

## QUICK SECONDES ADJUSTMENT

If you find that the time needs a little tweaking in the seconds, you can adjust it to within 50ms directly, without having to enter the time.

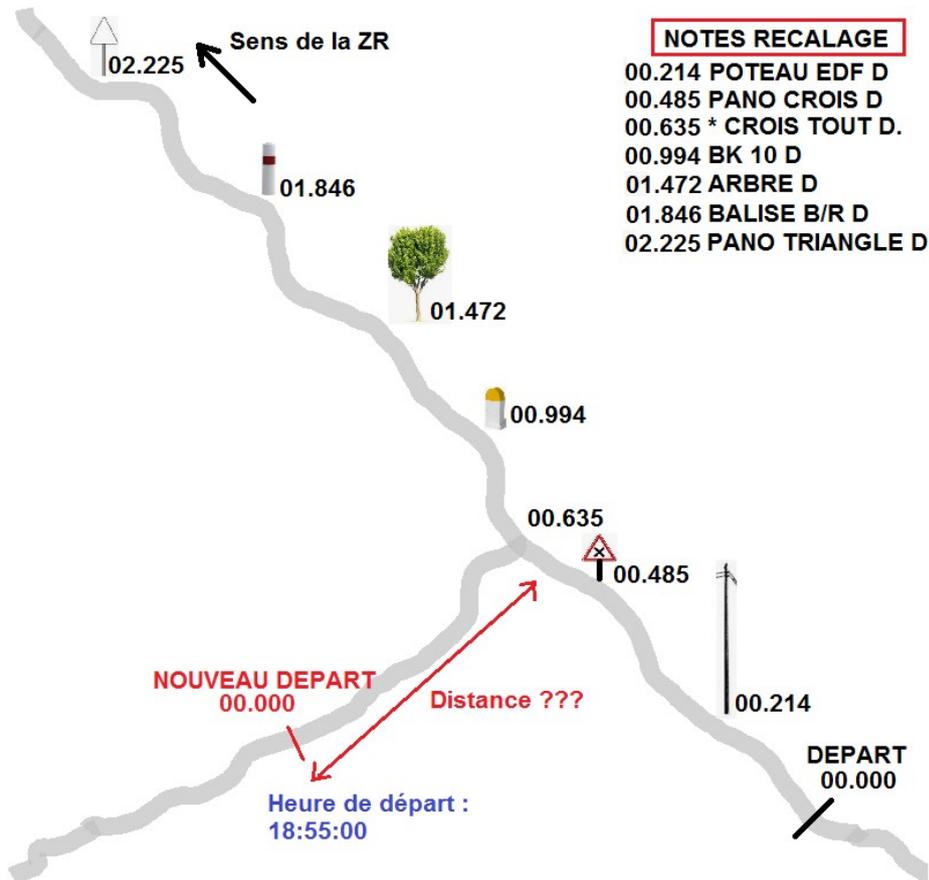To set the seconds : Menu / 5.CONFIG / 8.AUTRES / 1.Second.

The time is displayed! Adjust the seconds using the +2 or -2 keys so that there is no offset with the reference clock.

## RECUPERATION ROUTE   From 4.9 (4/01/2021)

Sometimes, on rallies such as VHRS or RMCH (Rallye Monté Carlo Historique), it happens that the start of a ZR is not on the route initially planned because of works, impassable road, etc ...

So you start the ZR on another road and you get back to the "normal" road a few hundred meters later.

In theory, you can no longer use your km RECALITING notes because the new start is not necessarily at the same distance as the old start from the crossroads which brings you back on the right road, as shown in the drawing below below:

**Sens de la ZR**

02.225

01.846

01.472

00.994

00.635

00.485

00.214

NOUVEAU DEPART
00.000

Distance ???

Heure de départ :
18:55:00

DEPART
00.000

**NOTES RECALAGE**
00.214 POTEAU EDF D
00.485 PANO CROIS D
00.635 * CROIS TOUT D.
00.994 BK 10 D
01.472 ARBRE D
01.846 BALISE B/R D
02.225 PANO TRIANGLE D

So in order to be able to use your registration notes as soon as you are back on the "right" road, you must "transpose" your measured kilometers and kilometers calculated by the cadencer from one of the benchmarks after the crossroads.

Method :

- You start your ZR on the new starting point with the imposed average and the imposed starting time. If your ZR was supposed to do 10kms, add 1 to 2kms to make sure the timer doesn't stop before the end. It is not known if the ZR has been lengthened or shortened, so it is best to plan in case it is a bit longer.

- You regulate **WELL TO THE RIGHT** !!! This is __essential__ to be in the right place and not to be out of step.

- You pass the crossroads which brings you back to the right road.

- You regulate green normally.

- Shortly before the next registration mark, you do:
Menu / 5.CONFIG / 8.AUTRES / 6.Recup

The following menu is displayed:



**RECUP. ROUTE**
Kms : _ _ _ . _ _ _
M : ECHAP
C : CLR     VAL : FIN

You enter the mileage of the landmark you have chosen (for example the kilometer post of the previous drawing: 000.994)

And when you are at the terminal (nose of the car), you validate.

From this point your TOTALIZER and the CADENCER KMS both pass to the value you have validated. And you can now use the adjustment points (manual or with remote control) and continue to regulate as if nothing had happened.

CAUTION: You must be **GREEN** when you validate your point. If you cannot be green because of turns that are delaying you for example, you erase (CLR) and you enter the next point.

That's okay as you continue to regulate on the correct average anyway. But that does require you to drive well to the right for a little while longer.

## RECOGNITION WITHOUT KNOWLEDGE DEPARTURE & ARRIVAL

**From 4.9 (4/01/2021)**

It may happen that the organizer does not give the start and finish point of the ZR in order to prevent you from taking recalibration notes in reconnaissance.

You can very well start the cue shots long before where you suppose the ZR is going to start and end them farther than where it is supposed to end.

Then you have 2 methods to be able to use your notes:

### Method 1 :

On the day of the rally you start the ZR "normally" at the place indicated by the organizer and as soon as you want, you can readjust on one of the points that you recognized by using the method explained just before in "RECOVERY ROUTE ".

### Method 2 :

You can also use the "CADENCER OFFSET" function which allows you to start the calculation of the theoretical Kms on a non-zero value. For this it will take the day of the rally:

- Stop at the point where you started the reconnaissance.
- Set the totalizer to 000,000.
- Proceed keeping to the right until the starting line.
- Once on the start line, you have 1 minute to do:
Menu / 5.CONFIG / 8.AUTRES / 5.Decal
- Enter the distance you have just measured (it is displayed on the screen in the 3rd line) and validate it.
- Do not forget M / 0 to start the cadencer on time.

## BIP AND LED 200 METERS SETTING THE TOTALIZER

**From 5.0 (10/02/2021)**

For co-drivers who have trouble staying focused on the roadbook and who panic when the driver arrives at a crossroads and doesn't know where to go, here is the solution!

As soon as you have passed a box in the roadbook, you enter the distance to the next crossroads on the "RECALAGE" line (as for SETTING the totalizer) and when you are 200 meters from this distance, the LED on the front of the Rallye Pack 2 will flash and the integrated buzzer will start ringing.

Thus the co-pilot can quickly dive back into the road book and tell the pilot at the right time where he needs to go.

So no more panic on board, no more gardening, no more bad atmosphere in the car!

Of course you can (and must) readjust the tripmaster at the crossroads, village entrance, etc ...

If you do not want to be "woken up" by the LED and the BUZZER, you can deactivate the function in: Menu / 5.CONFIG / 8.OTHER / 3. Beep

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Notes :