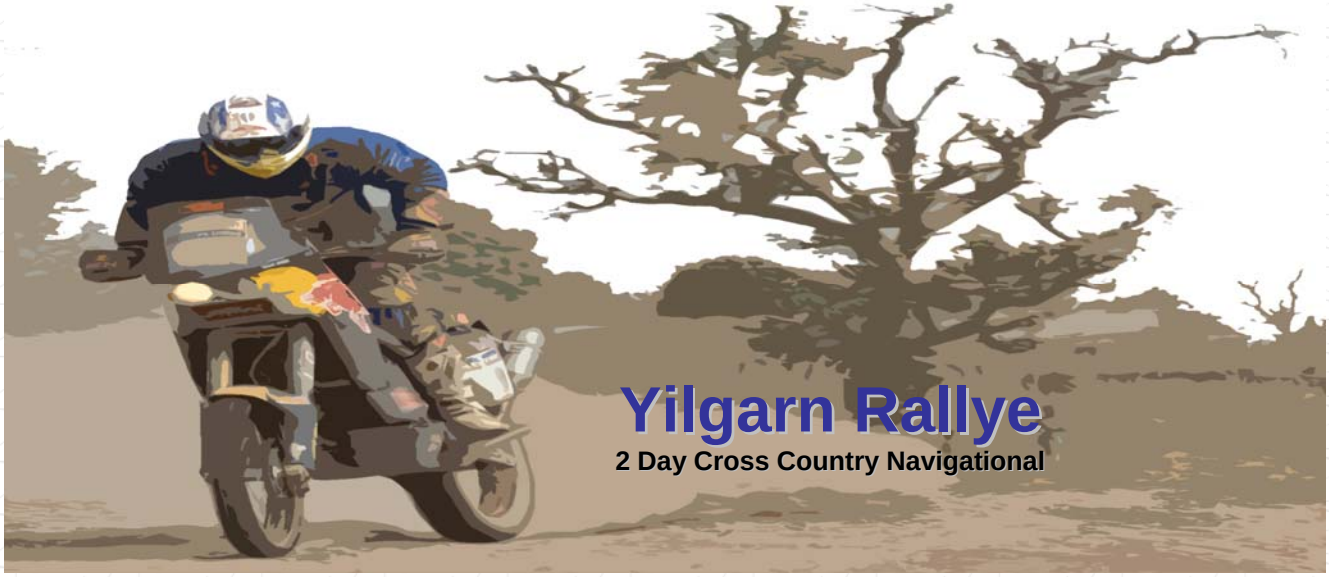


ROADBOOK NAVIGATION 101

The "Rallye Virgin's" Pocket Guidebook Version
by **Troy "Safari" Carpenter**

To do a basic roadbook navigation rally like the Yilgarn Rallye, you need FOUR things as far as navigating is concerned….

1. A roadbook holder.
2. A trip meter.
3. A logical and easy to view SET-UP or layout for the navigation equipment "cockpit".
4. A SYSTEM or ROUTINE of navigation procedure that you use to navigate the roadbook. This depends largely on WHAT type of navigation equipment set up you have and the functions that the equipment offers… as well as the type of terrain you are traversing.

ROADBOOK HOLDERS

There are any number of roadbook holders out there; Commercially available units like the electrically driven MD Roadrunner and Touratech units, manual versions like the well proven Acerbis model, or any number of "home made" Tuppaware variations…

For the navigation rallye first timer it is not necessary to invest in an expensive electric roadbook & tripmeter set-up merely to "have a go".

For the most part a manual roadbook roller is the simplest to build, either the fabled "Tuppaware" plastic lunch box version, or any number of "fabricated" variations, depending on your budget and engineering skills.

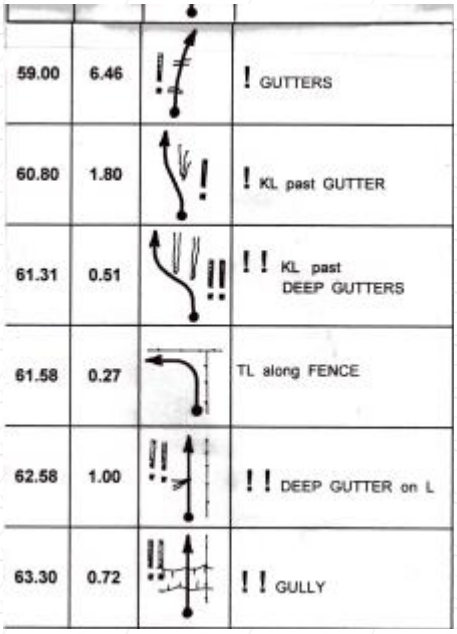
The $10.00 Roadbook

Basic navigation setup: homemade roadbook holder & original speedo

There have been blokes that have placed in the top ten at the Condo750 rallye using these most basic of set-ups… the most important thing is that they have a good and consistent navigation routine (we'll get to that later).

There's a few basic functions / features that a Road Book holder should have;

1. Roadbook sheets will be provided to you printed on **150mm Wide paper rolls**. **Your ROADBOOK holder should have a MINIMUM internal width of 165 – 175mm (thereabouts).** If the box is TOO wide, the roll can have a tendency to "wander"… and that can lead to tearing of the roll if it binds up too tight!



Typical navigation rallye roadbook scroll

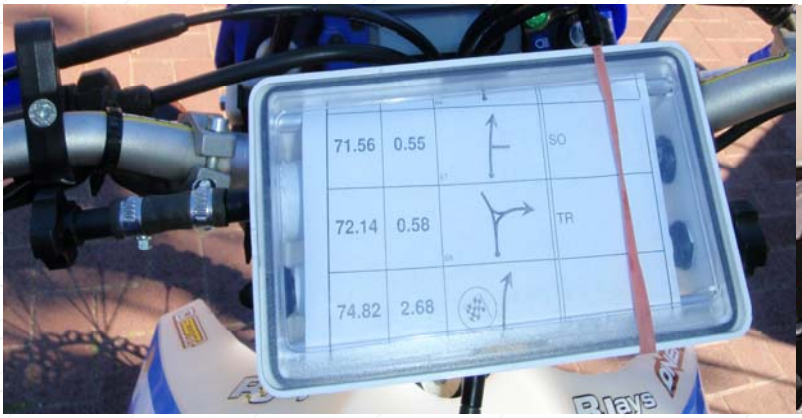
2. Roadbook holder should be able to wound FORWARD easily (either from a thumb/trigger switch - if an electric type or a large knob - if it's a manual roller) and accessable from the left handgrip.

MD roadbook switch

Acerbis manual roller knob

3. The roadbook holder should also have a reverse function… If you're using a manual roller, it is quite okay for this knob to be a smaller unit on the side of the roadbook box
4. If using a manual roadbook holder (either two spool "roll to roll" model or a four spool version, it's always a good idea to put a rubber band around the two spool rods (on

the outside of the box) to prevent the roadbook roll from vibrating forward while riding…



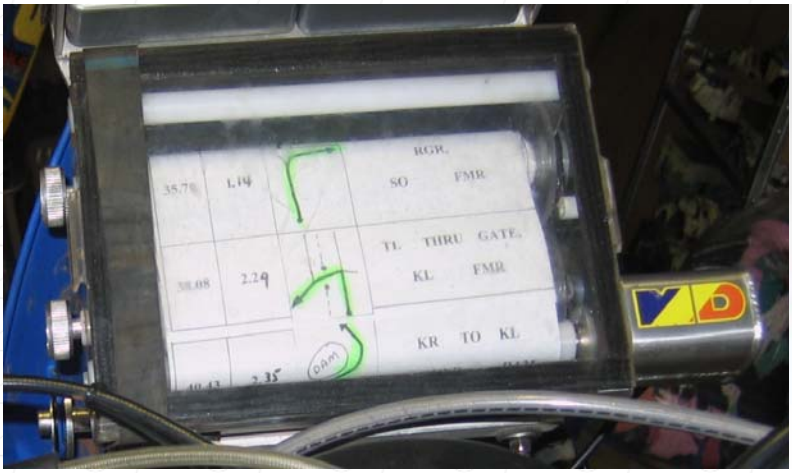
Acerbis Road book Holder

A good manual roadbook holder is the Acerbis one, well proven, cheap, and the one used in the Safari up to the mid ‘90’s by everyone including “Hedge”

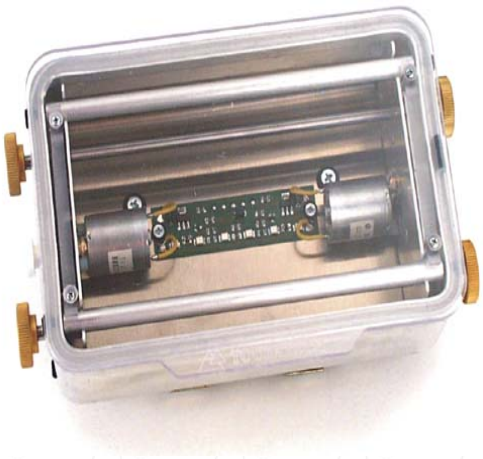
You can get it from Ballards www.ballards.cc (02) 4731 1210 or other Acerbis gear suppliers.

There are two common electronic roadbook holders available in Australia.

The MD Road Runner roadbook is made in Italy and is the roadbook holder of choice by Dakar competitors due to is durability and reliability. The Australian distributor of the MD is Vince Strang Motorcycles www.vincestrangmotorcycles.com.au (02) 6721 0610.



Another electric roadbook holder is the Touratech



TRIPMETERS

Like roadbook holders these come in a variety of different configurations…

There are the commercially available purpose built rallye computer / tripmeters like the ICO, IMO and Vapor units (only a few examples) with any amount of intermediate trip, total trip, forward, reverse and calibration functions, with or without remote thumb switches etc.

The ICO unit is distributed in Australia by Vince Strang, while the IMO is imported by Touratech. The Trailtech Vapour units can be purchased from anumber of suppliers including Ballards.

Warning: If purchasing an ICO unit from the USA via the web make sure it reads kilometers and not miles as this setting is programmed at the factory.

ICO Tripmeter Thumb Switch

There are the original equipment trip meters that come standard on most enduro / off road bikes today… either digital or mechanical.

If you're lucky enough to own a late model KTM EXC, LC4 or Adventure model of some sort, you have a tripmeter that can reset and zero the trip meter easily. In most cases there is even an aftermarket remote thumb switch available from KTM to operate it from the left handgrip.

Many other bikes (Yamaha, Suzuki, Honda etc.) also have trip meters that have similar trip, reset and calibration functions, but in most cases this will require you to use the buttons on the unit itself. This requires a little thought as to the positioning of the unit in relation to the roadbook holder and the handlebars. (we'll get to that in SET-UP).

An OEM Honda speedo / trip meter

Thirdly there are any number of bicycle computers out there. These are often relatively inexpensive, have a number of great trip / reset / calibration features and are relatively easy to install and position on the handlebar or to the actual roadbook holder itself (the closer the ODO to the roadbook tulips / distance instruction notes – always the better.)

The main drawback is the fragility / vulnerability of the magnet / pickup sensor on the front wheel / brake disc etc. and the fact that in general bicycle computers are not designed and capable of withstanding the vibrations and punishment (bulldust) that they are subjected to in a rallye application. If you spend a bit of time and thought in prep' they can be a good alternative for the "once off" attempt at a rallye though (certainly cheaper than a full-on ICO), BUT they're not a long term solution.

Regardless of what sort of tripmeter you have and its different features the PRIMARY function that it must have is that it measures distance accurately – according to the roadbook.

Tripmeter / ODO features:

CALIBRATION: If your tripmeter /odo is able to be re-calibrated (usually the electronic ones are) then good, you will be able to measure off your tripmeter against a measured kilometer in the route notes (there will be a designated 1 km stretch not far from the scrutineering location) and calibrate your meter EXACTLY to the route instructions.

If you cannot re-calibrate your tripmeter / odo, then during the course of the "Selective" or "Road" stage an amount of accumulated inaccuracy in relation to the CUMULATIVE (otherwise known as TOTAL) distance travelled will occur.

ADVANCE / RETARD DIST FUNCTION: On most rallye computers and some of the OE tripmeters available out there (eg. KTM LC4 and EXC), there is a function which allows you to advance or retard the total (cumulative) distance (usually via the thumb switch). This is the optimal set-up, because this allows you to navigate accurately using the TOTAL distance shown for each instruction… If you become lost, take some "wide lines" or experience excess wheelspin etc. along the way, which means the tripmeter no longer correlates accurately to the total distance given on a particular roadbook note, you can "bump" the distance (usually backwards) a few numbers to keep it "on par" with the roadbook.

SPLIT / TRIP FUNCTION / DUAL TRIPMETERS: Some keen Dakar fans will notice that most rallye bikes have TWO tripmeters (or ICO's as commonly referred to). The reasons for this are varied… It has to do with the type of event and terrain… Mostly you use the one above the RB holder to navigate using the "total distances" and correct the readings using the advance retard function. The second trip is used (sometimes) for the intervals, sometimes to keep a track on the refuels, sometimes as an intermediate to "find the way back" using a reverse function - if in fact you've got completely lost/taken the wrong road.

And of course it's also useful as a back up for the first one, if in the event it fails or is wiped out. (ie: it is the more vulnerable, in that it sits up high just behind the top of the fairing).

Tripmeters with two trip functions can be used in much the same manner as above, the difficulty is, that it is easy to become confused (especially when stressed or fatigued) as to which reading is which etc. when navigating. But a second trip function can be good to keep an eye on the refuel distances.

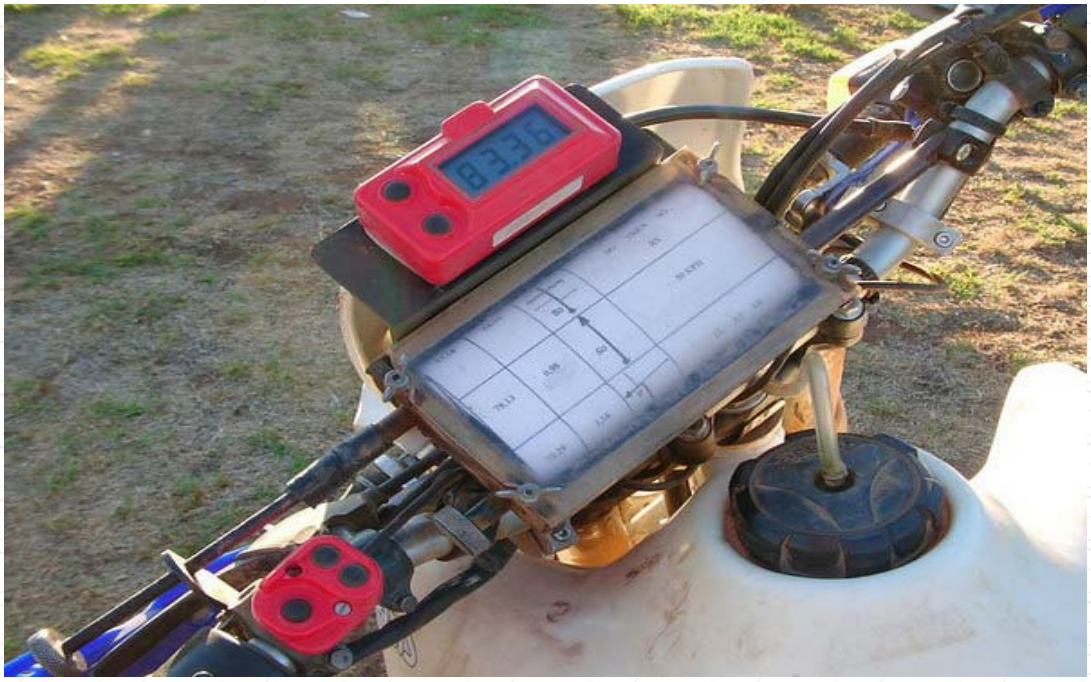
COCKPIT "SET-UP"

There are five primary considerations to the set-up of your navigation equipment.

1. The road book should be easily viewed.
2. The tripmeter / odo should (where possible) be placed close to the Roadbook holder and if possible inline with the distances displayed on the Roadbook sheet.
3. Both the Roadbook roller and tripmeter / odo should be positioned / mounted to facilitate as much as possible the ease of operation while riding ie. A trip meter that is tucked down behind the headlamp plastic cowling (as many are as standard) - is potentially hazardous if you are going to be riding under extreme road conditions (eg: 100 km/h on rocky sandy, bulldust ridden farm tracks).
4. Both the Roadbook holder and tripmeter should be mounted (within practical reason) as high up as possible. This prevents the situation where the rider has to look down too often and take ones eye off the road. It also has the effect of minimizing the amount of "refocusing" the eyes have to do, when raising and lowering ones head to view the instrumentation… It may sound funny, but you would be surprised just how fatiguing this can be on the neck. As you have all seen on pictures of different Dakar and Safari bikes, most guys have the RB roller and trip ICO mounted as far up as possible.
5. The navigation equipment should be mounted in a way that it is protected as much as possible in the event of a crash.

Okay so a lot of the above five factors are going to be effected by a number of things, some of which are mutually exclusive of one another… ie: How do I mount the roadbook holder as high as possible and still keep it "crash proof".

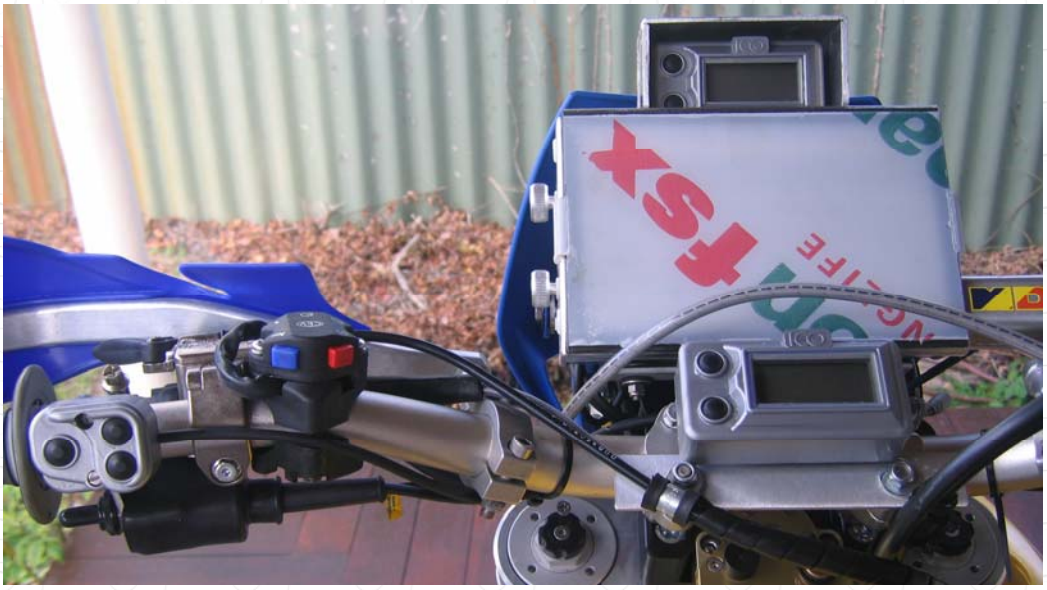
While the simplest and often safest way to mount the RB holder is directly to the cross brace on the bars, it is – other than mounting it on the tank – about as low down as you can get. It will mean that you have to slow down and sink your field of vision considerably at each instruction… But it's simple and foolproof.



If you make some kind of bracket to mount the roadbook and tripmeter a little higher up, make sure that the roadbook holder box does not foul or get caught on the front brake line under heavy braking. There have been plenty of guys bolt up their "lunch boxes" on the handle bar cross brace, jump on the brakes at the first big corner, "lasso" the roadbook holder with the front brake line and either; rip the lot off the bars (embarrasing) or do a big "endo" (very embarrasing!). The second alternative also involves five to ten minutes wrestling with the bike and compressing the front fork in an attempt to free the brake line from around the "lunchbox"…

Also you can NEVER spend enough time protecting the wheel sensor. Make sure the sensor is well protected with some form of guard, loctite / safety wire / Araldite the sensor magnet in place, preferably in an as inconspicuous place as possible.

Once you've got everything positioned where you're happy with it, it's never a bad idea to do some form of little screen to tuck it all behind, It'll protect it from roost, small branches and bushes etc.



Homemade roadbook & Trailtech speedo