How to use TSD Lite
version 1.04

Step 1: Erase Database.

Choose "Erase Database" from the Commands menu. This clears out the odometer adjustments as well as all the route instructions. For best results, erase the database shortly before each rally.

Step 2: Synchronize Clock.
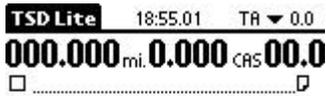
Choose "Adjust Timer" from the Commands menu. Use the "+" and "-" buttons to adjust the time until it matches the official rally clock. The left and right arrow buttons may also be used for fine clock adjustment.

Although this adjusts TSD Lite's clock it does not adjust the PalmOS clock. If you are running Rally Timer it does not adjust that clock either.

Steps 2 and 3 may be done in either order, so long as the clock is adjusted by the time you begin the rally.

Step 3: Enter Data.

Enter NRIs in the order they appear in the course instructions. You may skip the instructions (or just skip entering the transit zone information) for the tire warm-up and odometer check if you so desire. Instructions with more than one action point should be split into multiple instructions to allow checking off the separate action points as they occur. The "New" button creates a blank instruction at the end of the instruction list (or after the current instruction if one is selected) and numbers the instruction sequentially if the new instruction is at the end and the previous instruction had a number. Numbering the first instruction before choosing "New" will cause numbering to begin. You can erase the number for the second half of a long instruction or an instruction with multiple action points. Subsequent new instructions will not be auto-numbered. After the multi-part instruction is complete, simply start an instruction with a number and auto-numbering will resume.

Although NRIs need not fit on one line, only the last line of an instruction will be displayed, which is probably not what you want. Use the "Cut" and "Paste" commands to split your multi-line NRIs into multiple parts so this does not occur.

CAS, pause, gain, and transit zone information may be entered directly in the text field or by selecting the note icon at the end of the field. If you split an instruction into multiple lines, be sure the CAS and pause information that goes together in an action point in the instructions is together on the same line in TSD Lite. Be sure to use "cas" (capitalization is ignored) rather than "cast", "pause" rather than "wait", and "gain" rather than "warp".

Instructions need not be entered all at once; additional instructions can be entered during a break or even on the road, so long as the instruction is entered before you reach it. Instructions need not contain the entire text of the instruction; all that is really needed are the CAS, pause, gain, and transit zone information. Additional text is merely for your convenience in route following and keeping straight which instructions have been completed. For NRIs which affect course following only, an empty instruction will suffice. Numbering the instructions is recommended in any event.

Instructions without CAS, pause, gain, or transit zone information may be skipped. However, if you skip such an instruction and subsequently get lost, you may have to backtrack further in order to get back on time after a

time allowance. Also, skipping a course-following NRI will cause the delta mileage display to read incorrectly until the next NRI is reached.

If the rally contains LRIs which affect timing, you can leave blank instructions between each NRI to be filled in as the LRIs are encountered. Alternatively, selecting an instruction and then selecting the "New" button will cause an empty instruction to be inserted, into which you may fill in the LRI. If the LRIs only affect course following this is not necessary. Multiple executions of a "pause" LRI may be done with a single blank instruction, but CAS change LRIs need separate blank instructions.

If you have time before the rally begins, you should check over the CAS, pause, and other timing information to ensure that it is correct before beginning the rally.

Finally, scroll to the top of the instruction list, so that you can begin marking instructions.

Step 4: Schedule Out Time.

Out times are entered using the "Checkpoint" button. They can be scheduled by entering the time in the "Time Out" fields in the dialog box, or by leaving the fields blank and choosing "Done" at the exact time of the out time, or simply marking the first instruction at the exact out time. Scheduling out times using the "Time Out" fields is easier and more accurate and the other methods are not recommended.

Most rallies begin with a transit zone. If you have entered the instructions for the tire warm up or odometer check, first check off the instruction for the end of the transit zone. Add the length of the transit zone to your scheduled start time. Choose "Checkpoint" and enter this time into the "Time Out" fields. Choose "Done" and TSD Lite will begin counting down to the time you have entered. You may perform this step when you reach the end of the transit zone if you would like to follow the instructions to the end of the odometer check.

If you started entering instructions with the end of the odometer check, add the length of the transit zone to your scheduled start time. Choose "Checkpoint" and enter this time into the "Time Out" fields. Choose "Done" and TSD Lite will begin counting down to the time you have entered.

If the first instruction includes a pause and you schedule an out time, be sure to add the pause into the out time.

If you are late to the end of the odometer check, you may wish to take a time allowance using the "TA" pull-down at the top of the screen.

Step 5: Check Odometer.

Zero your odometer at the beginning of the odometer check. Follow the instructions to the end of the odometer check. From time to time as you reach instructions, write down the reading from your odometer, in case you get lost. When you reach the end of the odometer check, choose "Adjust Odometer" from the Commands menu. Enter the mileage from your odometer in the "My Odometer" field. Enter the official rally mileage in the "Rally Odometer" field. If you get lost on the odometer check, enter your mileage and the rally mileage at the last instruction before you got lost, or re-zero your odometer at an instruction after you regain the course and calculate official mileage from there.

You may enter the mileage in miles, tenths, hundredths, thousandths, or however you like so long as you use the same method for both your odometer and the rally odometer.

When you reach the end of the odometer check, be sure to zero your odometer again.

Step 6: Follow Course.

Once the countdown timer reaches your out time, the mileage and delta displays will begin counting up according to the specified CAS. If you have system sounds turned on in your Palm device's preferences and in the application preferences, it will beep every 0.1 mile. At each mile, it will beep on a higher tone. Compare your mileage display to your odometer. If your odometer reads higher than the mileage display, or if it reaches the tenth before the beep, you are early. If it reads lower than the mileage display, or reaches the tenth after the beep, you are late. You may want to periodically read out mileage readings to your driver. Mileage readings, perhaps even to the hundredth of a mile, are particularly useful near checkpoints, starts, turns, or CAS changes, or if you are running late or early.

As you reach NRIs, check them off in the list by selecting the checkbox next to the instruction in the list. The closer the displayed mileage is to the actual mileage – the closer you are to "on time" you are – when you mark the checkbox, the more accurate the displayed mileage will be afterwards. You may wish to use provided delta mileage or examine the odometer in choosing exactly when to mark the instruction. You may wish to have your driver drive a little "hot" so that when you slow down for the instruction you will be exactly on time. Or you may wish to mark turn or stop instructions a little early. When exactly to mark instructions will depend on your driver's driving style.

It is not necessary to check off every instruction. Skipping instructions will have no effect on your computed time unless they are pause or CAS change instructions. Even skipping instructions with pauses in them is OK as long as there is no checkpoint between the skipped instruction and the next time you check off an instruction (for instance, during a free zone). However, if you get lost, you will not be able to restart from an instruction you skipped.

If you check off an instruction and later decide that you checked it off too soon, you can uncheck it and check it again. If you have checked off subsequent instructions, you'll have to uncheck them too, in reverse order.

Checking instructions at the wrong time affects the delta display, causes errors if you later return to that instruction after getting lost, and causes errors in the main mileage display if the instruction includes a CAS change. If you check a CAS instruction late, edit the instruction using the note icon at the end of the line and change the mileage to match the correct mileage at which you reached the instruction. If you have a time but not a mileage, you will have to calculate the corresponding mileage – but you can check that your calculations were correct by editing the instruction again using the note icon. If you check a CAS instruction early, you can either uncheck it and check it off again at the right time, or edit the instruction as before.

When you reach a transit zone, check off the instruction for the beginning of the transit zone. The main and delta mileage displays will begin to count down time to the end of the transit zone. If you check off instructions during the transit zone, the delta display will read mileage from the most recent NRI as usual, as if you were proceeding at the previous CAS. This may be useful if there are delta mileages specified in the route instructions. When you reach the end of the transit zone and check off the ETZ instruction, the delta display will resume counting down to the end of the transit zone. Reset your odometer at the end of the transit zone and continue as before. If, when you reach the end of the transit zone, the odometer reading is counting up instead of down, you have missed the perfect time for the transit zone. Either make up the time on the road (if you haven't missed it by much) or take a time allowance by using the "TA" pull-down at the top of the screen.

When you reach the execution point of an LRI that has a timing instruction in it, use an empty NRI list entry to enter the timing information for the LRI and check off the LRI. Do not enter the timing information until you are sure the LRI will execute, as skipping an instruction with a pause in it will cause the pause to be executed at the next instruction you check off.

One thing to beware of with LRI's: while a CAS change can be entered after an instruction has been checked off, this does not work with pause instruction. Pause must be entered before the instruction is checked off. If

an LRI with pause executes again before the next NRI, you may uncheck the LRI, change its pause, and recheck it. These operations must be done in that order to work properly. Be aware that if you do this, the delta mileage will read incorrectly, indicating that you have more pause to use up than you actually do. Use the main mileage display instead.

When you reach a key time you may wish to re-zero your odometer and schedule the key time (plus your car number) as an out time using the checkpoint feature. If the key time has extra time in it, you must do this to remain on time. While it is sometimes possible to correct your mileage at the key time using the excursion feature, this is not recommended. Again, if you arrive late at the key time, you may wish to take a time allowance by using the "TA" pull-down at the top of the screen. In some rallies, you may be required to take a time allowance if you had one passing a previous closed (flying) checkpoint.

Although it is not necessary to remain perfectly on time during a free zone, it is still important to check off instructions, and particularly CAS change instructions, at the proper time, unless there is a key time for the end of the free zone. If you check a CAS change at the wrong time it will affect the timing for the leg. Checking other instructions at the wrong time will merely cause errors if you subsequently return to those instructions after getting lost. If you have, or can compute, a key time for the end of the free zone, then you can simply drive to the end of the free zone at whatever speed you like, reset your odometer, and schedule the key time as an out time using the checkpoint feature.

You may use other programs, switch off your PalmOS device, or even change the batteries without affecting the odometer operation. However, be sure to return to TSD Lite in time to mark off your instructions or check when your out time will be.

Step 7: Handle Errors.

If you get off course, TSD Lite has several facilities for getting you back on time. The simplest is an odometer reset. Return to an instruction which you checked off at the correct time. This may be one which you actually checked off correctly, or one which you used the instruction editing function to go back and fix later, but it must be one which has the right mileage in it somehow. If you're not sure if you did an instruction correctly, it may be useful to examine the instruction mileages using the note icon for the instruction and compare them to any official or delta milages given in the instructions.

Uncheck all the subsequent instructions.   Reset your car's odometer and choose "Zero Odometer" from the Commands menu. Choose "OK" and the calculated odometer will begin counting up from some large number. Choose (using the "TA" pull-down) a time allowance large enough that the calculated odometer begins to count down instead of up. Wait for the odometer to reach zero, and continue along the course.

Alternatively, you can enter an excursion without having to return to an instruction. When you notice you are off course, turn around and note (but don't zero) your odometer reading. Drive back along your incorrect route until you regain the course. Turn around again, note your new odometer reading, and subtract the initial odometer reading from it. Choose "Enter Excursion" from the Commands menu and enter the difference in the Distance field. Leave the pull-down set to "One-way" and choose "Done". This will put in a gain to equal the amount of extra mileage in your odometer, and cause the calculated odometer to read higher than your actual odometer. Choose (using the "TA" pull-down) a time allowance large enough that the calculated odometer reads lower than your actual odometer. Wait for the odometers to match, and continue along the course.

If for some reason (one-way streets, for example) it is impractical to follow your incorrect route backwards to the course, or if you noted a mileage at some intermediate point, you may choose to enter the total round trip mileage of your excursion rather than a one way excursion by using the "Round Trip" pull-down option instead of the "One-way" option.

The delta mileage readout may be useful for determining if you are still on course.

Step 8: Handle Checkpoints.

When you reach an open checkpoint, choose the "Checkpoint" button. It is not usually necessary to select this button exactly as you cross the timing line. The dialog box provides the time allowance to give to the checkpoint workers. Zero your odometer at the checkpoint, or at the out-marker if there is one. Enter your new out time in the "Time Out" field. If there is a CAS change in the checkpoint, enter the new CAS in the "CAS Out" field. Choose "Done" and the odometer will begin counting down to zero. When it reaches zero, continue following the course. Alternatively, you may leave the "Time Out" field blank and choose "Done" when the timer reaches the correct out time.

When you reach a closed (flying) control, you may choose the "Checkpoint" button to get your arrival time and time allowance at the control for later comparison to the correct arrival time. Be sure to note your time allowance at the control to give to the rally workers later. Do not choose "Done", however. Instead, choose "Cancel" or don't choose the "Checkpoint" button at all. If there is a key time following the checkpoint, proceed (briskly, if the rally has free zones following checkpoints) to the key time and use the "Checkpoint" feature to ensure you are back on time for the next leg, as described above.

When you reach a DIY instruction, mark off the instruction with the DIY in it. Unlike controls, it is important to do this at the correct time. Use the note icon to edit the instruction you just checked off and write down the time on your scorecard. You may wish to compensate for any time allowance you may have taken, to give the time you would have arrived if you had not taken the time allowance. Add the DIY delay to this time to get a new out time for the leg, and use the "Checkpoint" feature to schedule the new out time. If you're on a TA, the out time will have come and gone, but that's OK; just put the TA back in using the pulldown menu. Scheduling an out time without the TA in it is better than including it in the out time, because if you need to take more TA before the next checkpoint you can add another minute using the pulldown menu. If you have a time allowance when you reach a DIY, you may wish to use some of the DIY delay to undo some or all of the time allowance.