Distance Measuring Wheel

Peter Attfield May 1998

Roll this wheel as you walk, to accurately measure any length of trail. It is precise to 0.01 kilometer (i.e., 10 metres). It also displays your speed.

Uses

- Use the wheel to measure the distance of off-road trail sections that aren't easily measured by map scale, nor by car or bicycle odometers. You can measure the distance between intersections or important landmarks.
- During trail construction you might wish to measure a distance that requires clearing or board-walking.
- It's fun to compare wheel-measured distances with pedometer-measured distances. Help people adjust their pedometers by correcting the stride length they "enter" on a pedometer.
- It's fun to see how fast or slow you're walking.
- Monitor speed on the meter and set a defined pace for a few minutes. Let hikers experience what 3km/hr, 4km/hr, 5km/hr and 6km/hr actually feel like - on level or uneven terrain.

General Notes

- The wheel circumference is set for a deflated tire. Don't pump up the tire.
- There is no on/off switch. The meter is permanently on. *(This protects its "memory" of wheel circumference, odometer distance and clock time.)*
- The letters on the meter display are tiny. Some people may need reading glasses to see them.
- Bring a pencil, and map or paper to record distances.

Instructions

1. Check the meter- to ensure that tiny letters "DST" are displayed on the left side centre. *(This indicates that the meter is in the Trip Distance mode./* If not, press the red MODE button to change modes until the meter *does* display "DST".

Whenever the wheel is left stationary for 2 minutes, the meter reverts to the "Clock" mode to save battery power It will display the time of day [24 hour clock], and a *very* tiny clock symbol in the bottom left corner. To return to Trip Distance mode (DST), push the red MODE button once. If someone has recently pushed the MODE button, the meter could instead display TM *(= elapsed Time);* or MXS AVS *(= maximum Speed and Average Speed),* or ODO *(= ODOmeter distance since battery was lay inserted).* Press the MODE button to move from one mode to the next.

2. Check that the word AUTO is displayed en the right side centre. If not, see Trouble-Shooting.

3. Reset the trip distance to 0 by simultaneously pressing both red buttons. You're ready to go! You'll have to walk several steps before the computer has enough information to show anything. **The large, upper number indicates the speed you're walking in kilometres per hour. The small, lower number indicates the distance traveled in kilometres.**

4. Each time you get to a road, intersection or important landmark write down the distanced traveled on that segment of the trail. *Its up to you whethe*r you wish to reset the meter to 0 at each of these *points. That -would also re-set the meter 's record of elapsed time, maximum speed and average speed*

Optional Details

- You should never have to use the ST/SP (start/stop) button. *(I set the meter to AUTO .mode, automatically measure distance and time when you roll the wlieel, and stop when you stop)*
- If you write down odometer distance at the beginning and end of your hike (small, lower number in the ODO mode), you can check the total distance walked even if you've re-set the trip distance. Odometer shows the kilomtres traveled since the battery was installed, up to 1000km.
- Just for fun, at the end of your hike, press the MODE button to indicate TM. The small, lower number is the Elapsed Time you've actually been rolling the wheel since the last re-set: in hours, minutes and seconds, up to 10 hours. (Rest stops are not counted.) Then press the MODE button again to indicate MXS AVS. The large, upper number is the *maximum* speed you walked since the last re-set. The small, lower number is the *average* speed you walked during that time.
- Whenever the computer is measuring distance, a *very* tiny bicycle symbol in the top left corner will flash on and off.
- The display "lags" a bit. You have to walk two or three steps before the display shows you have started moving, and wait two or three seconds before the display shows you have stopped. (This is because the display gets a signal only about every 1.5 metres of travel - when the magnet on the spokes passes the senior on the forks.)
- If you need to measure more precisely than 10 metres, multiply the revolutions of the wheel by its 1.5 metre circumference. There is a yellow mark on the tire to help you *see* revolutions.
- I have not included instructions on how to re-set the clock or the wheel circumference. They are available on a separate page.

Warnings

- Pressing both red buttons simultaneously will re-set to 0 all of the DST, TM, MXS and AVS values at the same time. Re-set only when you're sure you want to re-set *all* of these.
- Please do not remove the battery as you risk losing a small spring and a small rubber 0-ring seal, and you would have to re-set the clock and the circumference of the wheel.
- Please don't try to re-set the clock time, odometer or wheel circumference without having more detailed instructions at hand.

Trouble-Shooiing

- *If the distance isn't showing:*

  Check that the letters DST appears on the left side. (If lot, press, the MODE button one or more times until DST appears.)

  Walk the wheel for several paces.

  Check that there is no dirt or leaf between the magnet on the spokes and the sensor on the forks. Check that the magnet passes within 2 millimetres of the sensor.

  Check that the word AUTO appears on the right centre of the display. If not, press the MODE button until the, display reads ODO; then press MODE and ST/SP buttons simultaneously (the lower number should now read 148 [;he wheel circumference]); then press ST/SP to set the meter to AUTO. Press MODE a couple of times to return to the DST mode.

- *If you don't believe the distance and speed, and want tc verify the -wheel circumference:*

  Press the MODE button until the display reads ODO Press MODE and ST/SP buttons simultaneously. The lower number should now read 148 - the wheel circumference in centimetres. Press MODE a couple of t:imes to return to the DST mode.

- *If you can't get the measuring wheel to work properly:*

  Call me: Peter Attfield - home (905)773-3935 work (905)832-2289