# Care and feeding of your MJTiming system

# Set-up

Infrared sensors do not like direct sunlight – the sun is world's biggest IR flashlight :) Since this is a wireless system, then you can always place the IR receivers on the side of the gate that receives the least direct sunlight (south side facing north, or east side facing west).

# Battery care

The batteries are sealed lead acid (SLA), and like all lead acid batteries, do not like to be run completely dead, nor do they like to be over charged. The batteries are 5Ah capacity, and the current draw is never over 200 mA, so they should last for years.

**Don't leave them on the charger for more than 24 hours**. The charger is supposed to back down to trickle mode when the batteries are charged, but since it is charging multiple batteries in parallel, it can sometimes get confused and stay on full power when it shouldn't.

It is probably a good idea to have a spare on hand. The batteries used in the timing system are easily replaceable (no need to ship the system back to me for this). It is used in alarm systems and trailer breakaway systems, so it is available almost anywhere. Here is one you can buy online: http://www.amazon.com/dp/B000RMJN1I (you want the .187 terminal size)

As for replacement, just open the box and remove the old battery (it's attached to the top by its wires). Use needle nose pliers to carefully remove the connectors from the old battery and place them on the new one. The battery itself is held in place in the box by a piece of high density foam that sits underneath the power switch -- just replace everything back the way it came out.

If you want a picture of how it is placed, you can find some photos in the "Do it yourself" document on my website: <http://members.shaw.ca/MJ-Timing/mjTiming-DIY.zip>

# Breakage

The system is quite robust, but there are a few things you can do to help keep it happy for years and years.

1. Do not disconnect the cables (if any) going from the MJ receiver to the Race America sensors.  
   It may look messy in the case, but the RJ11 connectors are very delicate things when not plugged into their socket. Leave them plugged in and the lifetime of the cable should be close to that of your old land-line telephone.
2. Do not remove the antenna  
   The RPSMA connectors are fairly small and delicate. Much like the cables, if you leave the antenna connected and just fold it for packing, the lifetime should be increased substantially.
3. If the RPSMA nut comes loose, do NOT just tighten it up.  
   The entire radio and circuit board are hanging off that RPSMA connector, so if you try to re-tighten the nut from the top, you will cause severe damage due to the twisting forces. Open the case and use a pair of pliers or small wrench to hold the back of the connector in place while you tighten the nut.
4. The system is not waterproof  
   It is very water resistant, but it will not stand being submerged in water. That being said, I do place the units under running tap water to clean up dust and mud from rallycross events.

## Radio synchronization

When the control unit starts up, he synchronizes the clocks on the start and finish receivers. If you are using the M&J timing software, there is an indication of radio synchronization. If you are using Axware, this can be determined by breaking the start and finish beams and verifying that a time is recorded.

If you have issues with timing synchronization, unplug the control unit’s USB cable and plug it in again.

# Device drivers

In order to use the control unit with your laptop or netbook, you will need to install the appropriate device drivers for the FTDI USB-serial chip. If you are running Windows 7 or 8, then just plug in the control unit while your computer has access to the internet. Be sure to do this before your first event!

If you are running Windows XP, go to <http://www.ftdichip.com/Drivers/VCP.htm> and download the device drivers for your operating system and install them on your computer. You should then be able to communicate with the MJ control unit.