

Trackballs that I have known and loved: A history in hardware

A recent expedition into my storage room produced a lot of old trackballs. Here are some of the highlights.



By [J.A. Watson](#) for [Jamie's Mostly Linux Stuff](#) | March 16, 2017



My trackball collection.

Image: J.A. Watson

I have had a preference for trackballs over mice as pointing devices for a very long time.

When I recently made an attempt to clean out a storage room in my house, I was confronted with evidence of just how long and how strong that preference has been. I kept pulling more and more old trackballs out, which triggered more and more fond memories of how/when/why I bought and used them.

Don't laugh, you will be old one day, too.

So I decided to write a review of the trackballs I have known and (mostly) loved. While writing this I wanted to test these old trackballs to see if they still worked, and if so, how they felt today.

The oldest of these have PS/2 connections, and my Acer All-In-One desktop system does not have a PS/2 plug. I have a passive PS/2 to USB cable, but it didn't work for any of them - apparently they need an active adapter to perform protocol conversion, and I don't have one of those any more.

But then I remembered that I still have quite a few old (or very old) laptops around here. I got out the Thinkpad T400... hmmm, no PS/2 connector on it, but wait, I also have a docking station for it... Yes! The docking station has a PS/2 connector! Woo-hoo!

Once I had that set up and running, every single one of the trackballs still worked. So in the following descriptions I will include information about what event is sent by each button on them. To save me from repeating the same thing over and over, I will simply say here that the "Left" button on Windows is "mouse button 1" on Linux, the "Right" button is "mouse button 3" and the "Middle" button is "mouse button 2".



Appoint Thumbelina Trackball

Image: J.A. Watson

Appoint Thumbelina - My first interest in trackballs was associated with my early use of laptop/notebook computers (a Toshiba Satellite 1600, if memory serves). I spent a lot of time on airplanes in those days, and the combination of the large size of laptop computers and the small size of airline seat fold-down tables meant that there was no room to use a mouse. I still remember the first time I saw a Thumbelina trackball, in a ComputerLand store in Marietta, Georgia. The design was so good, and so innovative at the time that it was just amazing.

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It has a ball about the size of a pea, which was very easy to roll with your thumb. There are three buttons, two are the normal mouse left and right buttons and the third is a drag-lock button, with a little LED next to it which lights up when drag-lock is engaged. That third button made all the difference in the world to the usability of the Thumbelina, because trying to click-and-drag in any other way, with just the two basic buttons, was nearly impossible.

The Thumbelina has a PS/2 connector and came with a PS/2-Serial adapter. It worked when I connected it to the T400, and was identified by Linux as a "Generic PS/2 mouse". As soon as I started using it I remembered one of the more irritating things about it - when it is correctly

oriented in your hand (so that rolling the ball up moves the cursor up), the cord comes out of the bottom. It would have been so much more convenient if the cord had been on the top.

The cursor movement was jumpy and imprecise, and cursor speed was much too low. The button immediately to the right of the ball is the "left" button, and the one above that in the upper right corner is the "right" button. The button to the left of the ball is drag-lock, and it is quite clever. A normal mouse button click actually produces two events, a button press followed by a button release. The drag-lock button on the Thumbelina only produces one event each time you click it, alternating between button 1 press and button 1 release. This gives you click-and-drag functionality without needing any special software or driver support.

There is one significant disadvantage of this button behavior, though. Because it is sending the same events as the left button (mouse button 1), it is not possible to remap that drag-lock button to make it a middle button. That's a real drag for some people...

I believe that the original Thumbelina also came with a bit of stick-on velcro that you were supposed to use to attach it to your laptop. I never did find a place which I thought was convenient enough and secure enough to do that. I couldn't figure out what to do with the cord if it were attached to the laptop, anyway.



Logitech TrackMan Voyager

Image: J.A. Watson

Logitech TrackMan Voyager - In some ways this was the next generation of the Thumbelina, because you could easily hold it in your hand and roll the ball with your thumb. It has a plastic cover which protects the ball and buttons when traveling.

The voyager has three buttons positioned around the ball. The smallest of the three, centered above the ball, is the left button, the curved button to the right of the ball is the right button, and the one curved around the left of the ball is the middle button.

One of its few flaws was that click-and-drag pretty much required two hands. I tried all sorts of thumb and finger combinations but I never managed to do it consistently and accurately when holding the Voyager in my hand; I had a bit more success when it was sitting on the desk, but it was still awkward.

It has a PS/2 connection and came with a PS/2 - Serial adapter.



Logitech TrackMan Marble

Image: J.A. Watson

Logitech Trackman Marble - This is the original Marble, from about 1995, not to be confused with the later Trackman Marble Wheel, or the much later and very different Trackman Marble that Logitech is still selling today.

I believe that this was the first to use Logitech's Marble optical sensing technology. It uses a specially finished ball and an optical sensor to read the movement, providing much better precision while eliminating all moving parts other than the ball itself.

In my opinion this was the first truly great desktop trackball. The shape is excellent and it has three lovely, normal, side-by-side, equal-sized left/middle/right buttons.

This was before Logitech came up with the rather unfortunate idea of replacing the middle button with a "clickable" scroll wheel, which was introduced on the TrackMan Marble Wheel, and continue with many more after that. I call this an unfortunate idea because a lot of people (including me) find it difficult to click the scroll wheel without actually scrolling at least a little bit, and that can cause you to click in a place other than where you had intended to.

If you started out using Unix on early workstations (Sun-1/Sun-2, VAXstation, Silicon Graphics, etc), you have a deeply embedded need for a three-button mouse, and this trackball satisfies that need beautifully.

By the way, while trying to figure out the PS/2 to USB connectivity situation I came across [Converting a PS/2 TrackMan Marble to USB](#) by Eric S. Raymond, which describes in detail how to convert this trackball from PS/2 to USB connection, using an active keyboard to USB adapter. You can always tell the old hard-core Unix guys, because they will do just about anything for a three-button pointing device.

One other thing that shows the early stage of trackball development on this device. Rather than having a hole in the back to allow you to easily pop the ball out for cleaning, this one actually has a locking ring around the ball which you have to release and remove before you can get the ball out.



Logitech TrackMan Marble FX

Image: J.A. Watson

Logitech TrackMan Marble FX - This was the first of the "big ball" trackballs that I saw. It is a corded trackball, and the wrist rest is a permanent part of the molded body. Not the greatest ergonomic design, for sure.

In addition to the bulk of the ball exposed on the right side of the body, which you moved with your fingers, there was also a hole in the body so that you could move the ball with your thumb, if you were really determined.

It had FOUR buttons - quite radical at that time - including the usual left/right/middle plus a red button which switched the ball to scroll/zoom mode, and was Linux button 8.

This TrackMan was reasonably comfortable to use, but the fixed wrist rest was not really appreciated by everyone. Also, the hole which was supposed to let you move the ball with your thumb was more of a gimmick than a practical alternative. The one thing it was good for was to push the ball out of the case so you could clean out the dust from inside.

This was still a PS/2 connection device.



Logitech Cordless TrackMan FX

Logitech SA

Logitech Cordless TrackMan FX - The first of the cordless trackballs. The second generation of the FX series, the wrist rest was now a removable add-on piece of rather flimsy plastic which could even be rotated a bit to adjust the angle between your arm and the trackball.

Like the original Marble FX, it also has four buttons but they are arranged a bit more conveniently. They have the same functions and send the same events as the original as well.



Image: J.A. Watson

It also has a hole in the body so the ball can be moved with your thumb, although with the new button arrangement it is even more difficult to do that without accidentally hitting a button.

The cordless receiver was a rather large, clunky thing which was common to all Logitech cordless keyboards, mice and trackballs for quite some time. I recall seeing a huge table listing compatibility of devices and receivers once.

The receiver connected via USB, and came with a USB-to-PS/2 adapter.



Logitech Cordless Optical TrackMan

Image: Logitech SA

Logitech Cordless Optical TrackMan - This was my all-time favorite trackball until recently, and in my opinion it is one of the best trackballs ever designed. My partner still uses one, and I have no doubt that if it ever breaks there will be a major crisis in our house, because Logitech doesn't make them any more. That is very unfortunate.

I have owned at least three or four of these over the years, and I'm pretty sure that there was a major change in the manufacturing and materials along the way. The first ones I bought were very sturdy and quite heavy, but sometime later I noticed that the new ones were much lighter and had much more of a plastic feel to them.

Logitech really went overboard with the buttons on this one - it has no less than *eight* of them, plus a scroll wheel! The buttons were left/right/middle (again, the middle button was actually the scroll wheel), forward/back (Linux 8/9), scroll up/down (4/5) and drag lock (10).

But there is something strange about the scroll up/down buttons (I think Logitech called them the "Cruise" buttons or some such marketing blather). When they are clicked, on Linux they actually generate two sets of button events - scroll down generates events for buttons 4 *and* 11, and scroll up generates buttons 5 and 12. I'm not sure, but I think this might be so that you can distinguish the scroll buttons from the scroll wheel, because the wheel itself actually generates events for button 4 and 5 as well.

One other note about the manufacturing of this trackball, and possible differences over time. The one which I still have (but keep in the storage room) seems to be sort of "decaying", the rubber feels kind of tacky and it leaves a bit of residue on the desk. The one my partner still uses, which is newer than mine but is still more than 5 years old, is still in good condition, it doesn't feel funny or shed at all. Strange that they have aged so differently.



Kensington Orbit Wireless Mobile Trackball

Image: Kensington

Kensington Orbit Wireless Mobile Trackball - First, calling this one "mobile" is a bit of a stretch in my opinion, considering the size of it compared to the Thumbelina and Voyager. But at least they didn't call it a Mouse for no reason.

It came with a nano-sized USB receiver, which was undeniably more "mobile" than the clunky receiver which still came with the Logitech TrackMan series at this time, and there is a place to store the receiver inside the battery slot.

Oh, and it also came with a draw-string pouch to carry it in, so maybe it really does qualify as a "Mobile" trackball.



Image: Kensington

The one major new/novel feature of this device was a touch-sensitive scroll ring around the ball. This was a pretty good gimmick at the time that it was first released - even the idea of a scroll ring instead of a wheel was pretty new, and to have it be touch-sensitive rather than mechanical was just very spiffy.

But it turns out to be a mixed blessing, because making very small movements with with the touch-sensitive surface is actually not very easy.

It only has two buttons. The body has flat vertical sides, and the buttons are integrated into those side surfaces.

This was the first symmetrical trackball I owned (could be used either left- or right-handed) I since the Trackman Voyager.

Overall it is a pretty nice trackball, and I still use it from time to time when I need to grab one quickly for something, such as when the Logitech Unifying receiver isn't recognized properly.



Kensington Slimblade Trackball Mouse

Image: Kensington

Kensington Slimblade Trackball Mouse - This one really is what the name implies, a device which can be used as either a trackball or a mouse. That is such a cool concept that it still blows my mind today.

Unfortunately it doesn't turn out to be quite as nice to use as you might expect, particularly as a trackball, so I don't really use it all that often.

The view shown here is of the top. At this point it looks like a pretty normal mouse. It has an optical motion sensor on the bottom and a scroll *ball* on the top. There is one very nice feature when using it as a mouse - the scroll ball actually works for both horizontal and vertical scrolling!

The left and right buttons are quite obvious, and work as expected. However there is a less obvious button, surrounding the ball on top, which works as a drag-lock button.



Optical sensor cover and Bluetooth Pairing Button

Image: J.A. Watson

Then comes the surprise. Double-click the drag-lock button and a mode LED blinks on that button, and it switches from being a mouse to a trackball. The ball on top then works as a trackball, and there is a little cover that you can slide closed over the mouse optical sensor on the bottom.

You can lay this trackball on a desk and roll the ball with your fingers, or you can hold it in your hand and roll the ball with your thumb. The buttons still work exactly as they did in mouse mode.

By the way, the drag-lock button works the same way that the Thumbelina did, sending alternating press/release events for button 1 each time it is pushed.

There is one more interesting feature of this device - it connects via Bluetooth. While that is not such a big deal today, it certainly was when I bought this trackball because Bluetooth connectivity was still not all that common then. Even today it can be an advantage to save a USB port on some systems.

The middle button (drag-lock) is also an on/off button, if you press and hold it for about 5 seconds it turns off (or on).



Logitech M570 Wireless Trackball

Image: Logitech SA

Logitech Wireless Trackball M570 - I originally bought this trackball only because it is compatible with the Logitech Unifying receiver, and I believe it is still the only Unifying trackball.

I put a K350 keyboard and an M570 trackball paired to one Unifying receiver at home, and the same setup plus an M600 Touch Mouse on the desk at my day job.

Physically the M570 trackball is similar to the original TrackMan Marble described above. The overall shape and the size and placement of the ball are very similar.

However, the lovely middle button is gone, replaced by a scroll wheel that is squeezed between the other two buttons and which does double duty as a middle button. There are also Forward and Back (8 and 9) buttons.

Oh, and of course the cord is gone, and the bulky cordless receiver as used by the earlier Logitech models has finally been replaced by a nice little nano-dongle receiver. There is a place to store the receiver in the battery compartment when it is not being used.



Kensington Expert Mouse Wireless Trackball

Image: Kensington

Kensington Expert Mouse Wireless Trackball - My latest acquisition, and perhaps the one which will dethrone the Logitech Cordless Optical TrackMan as my all-time favorite trackball - it's just a bit too soon for me to be sure about that.

I just wrote about this trackball, so refer to [that post](#) for all the details about buttons, scrolling, connectivity and comfort.

So that's the lot of them, from the very oldest to the absolute newest, covering a span of well over 20 years.

I think every one of these trackballs had some interesting or unique new feature - that was generally the reason that I bought them.

The technology has gotten steadily better, making for easier, smoother and more accurate movement.