

# Secure Personal LOCATION Management:



BY JASON JONAS

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**N**ot too long ago my friends and family were trained just right. You see, I could hit the road and lose contact with them for days—even weeks—on end without affecting the relationship. We had an understanding that I was on my motorcycle and that I'd pop back up on the radar screen when I was damn good and ready. In the meantime, no news was good news. Those were the good old, carefree days.

And then one day while talking to my sister about my travel habits she said, "I understand that you're doing something you love, but it would be nice to hear from you once in a while and know where you are traveling and know that you're safe." I knew she was right. In the back of my mind I knew that I needed a way to keep my friends and family involved in my travels. After all, effective communication is the key to a healthy relationship.

While cell phones were so ubiquitous that even I had one, I was never a huge fan of phone calls. Despite my lack of enthusiasm about the idea, family phone call frequency increased a bit. But my lack of enthusiasm started the quest for other forms of effective communication. It would take years before finding a solution I could invest in.

Then I heard about the Star-Traxx system and thought it was intriguing enough to look into further. However, after thoroughly researching it, I never adopted the technology because the devices were bulky and expensive. The application side of the Star-Traxx solution was lacking as well. A number of friends purchased units and liked them, but I knew that wasn't the solution for me.

In 2007, SPOT, Inc. introduced the SPOT Satellite Messenger personal tracker which is similar to the Star-Traxx setup. The main differences are that SPOT's device has a much friendlier form factor and the cost of entry was reasonable. Before taking the plunge, I followed a prudent path and waited for a few early adopters to validate the technology; *i.e.*, beta test it. Based on their positive comments and the research I had done, I decided to purchase one.

Still, I wasn't keen about the supporting applications. SPOT's solution was something called a shared page. At the time, the functionality of the shared page system was lacking, but what I disliked was that SPOT wouldn't store location data for longer than 30 days. I want to store that data forever, create trips and share them with friends and family, document where I've been and mentally reminisce my trips if



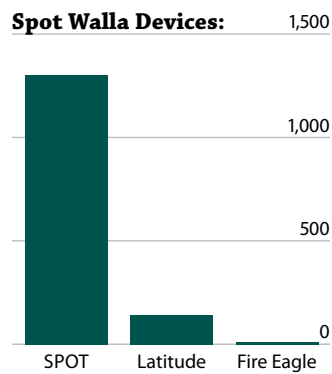
**First generation SPOT Personal Tracker**

I'm fortunate enough to live to old age. It would be a shame to lose the data and I didn't want to let that happen.

What I needed was the right mix of both hardware and software. The SPOT Personal Tracker seemed to be the right hardware, but after some research it was apparent that the right software didn't exist at the time. While researching other solutions I found that in addition to the shared page system, SPOT users can configure their accounts to send email messages when certain message types are sent. At the very least I could take advantage of this capability to acquire and store my locations.

The device I purchased was part of a group buy organized by the good folks at MyLiveTracks.com. We decided that some of us would pick up our devices at an impromptu Ride To Eat (RTE) at the Queen Wilhemina Lodge on the Arkansas side of the Talimena Scenic Drive. Before leaving for the Lodge, I configured my SPOT account to send all locations to a special email account. I wrote a simple program to parse the emails and store that information in a database. I also wrote a simple web application that would display those locations on a map using the Google Maps API. This step was the genesis of SpotWalla. The first SpotWalla trip was the journey to pick up the device—well, at least the return trip.

My Father once told me, "Son, you'll have an appreciation for privacy once you've acquired assets by working off your assets." Securing my personal information has always been a concern. People may not realize or have an appreciation for how personal their location data is until it's plotted on a map. If I have direct control of the application side of the Personal Location Management equation, it means I can adequately address secu-

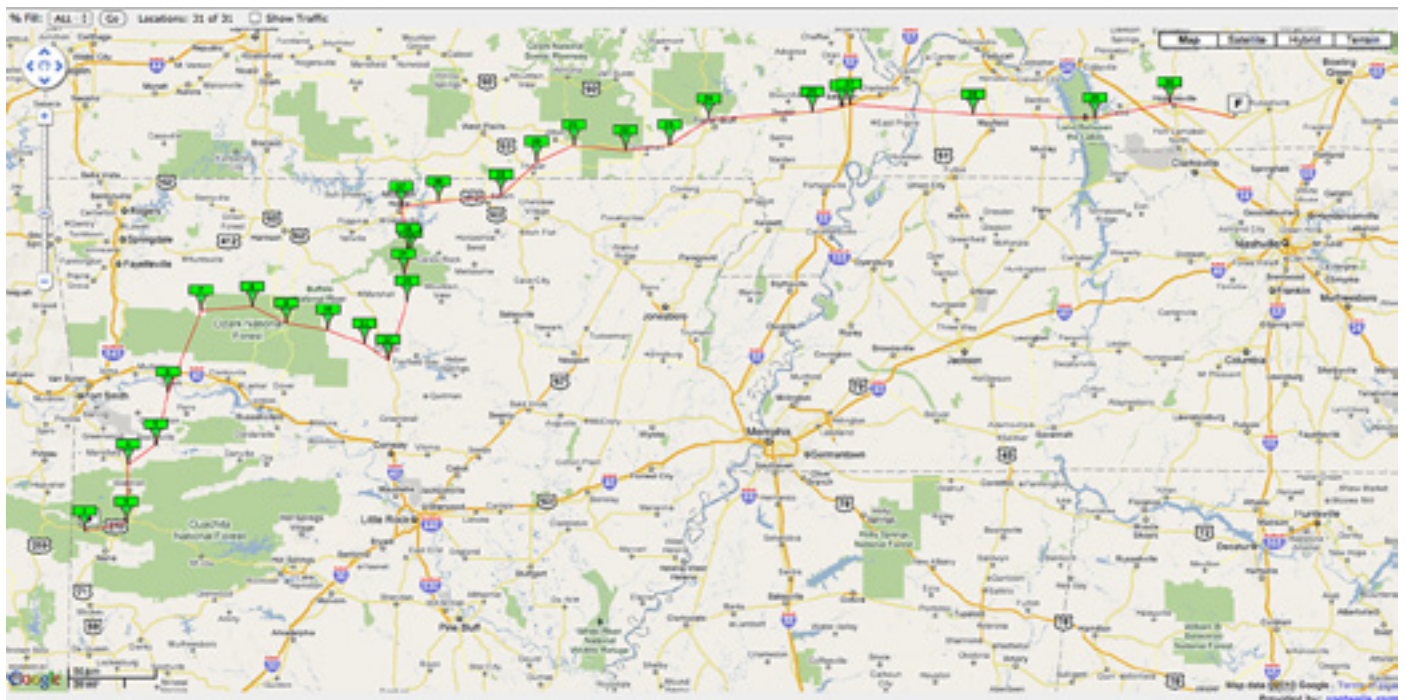


urity concerns. Over the last two and half years SpotWalla has matured into a very capable and secure personal location management system. Multiple devices and interfaces are supported, including both SPOT devices, any smart phone supported by Google Latitude and any device supported by the Yahoo! Fire Eagle interface.

The vast majority of SpotWalla devices (90%) are either SPOT 1 or SPOT 2 devices for good reasons. SPOT employs two satellite-based technologies. The Global Positioning System (GPS) is used to acquire current location information. The Globalstar constellation of satellites and ground-based receivers/transmitters and networks is used to transmit the location data. A distinct advantage of satellite-based transmission technology is that it works where cellular networks don't. However, the Globalstar system does have its holes. These holes exist primarily because after a satellite receives the device's location data it transmits the data back to earth. If a ground-based receiver is not in view of the satellite, the location data is lost in transmission. SPOT has designed its devices with redundancy in mind. Instead of a single transmission, location data is transmitted multiple times over a specific period of time. While this redundancy doesn't eliminate the holes, it does improve the chances of a successful transmission and the overall reliability of the service.

Another advantage of a SPOT device is the five different message types that may be sent. You may send OK, Help, Custom (SPOT 2 Only), Tracking and 911 messages. 911 messages are handled by the GEOS Rescue Coordination Center in order to get local emergency services to your location. SPOT users can also purchase value-added services such as SPOT Assist Roadside or SPOT Assist Maritime, which provide non-emergency help services on the road or at sea respectively. Both of these services, once activated, work whenever you push the help button.

All message types flow into SpotWalla and can be used to communicate with friends and family. For instance, I use track-



**The First SpotWalla Trip**

# Secure Personal LOCATION Management: *spot*™

ing messages to lay down a good route and let my friends and family know I'm moving. I use Custom messages to indicate short stops and I use OK messages for overnight stops. Using messages in this manner allows you to better communicate with those who are following you.

While either a SPOT 1 or SPOT 2 device will suffice for most motorcycle riding, the SPOT 2 device has some key advantages:

- An improved GPS chipset allows the device to acquire current location data quicker and more efficiently.
- A stronger transmit signal increases the likelihood that a satellite will receive the transmission when you're traveling through canopied areas.
- Each transmission attempt includes up to the last three locations.
- It has the ability to send OK, Help and Custom messages while in tracking mode.
- Each message type has its own button. The Help and 911 buttons have protective covers.

The SPOT 2's advantages are clear and real. However, that's not to say the SPOT 1 is inferior in all cases. Depending upon how you intend to use the device, a SPOT 1 may very well be the wisest choice. The SPOT 1 has the following advantages:

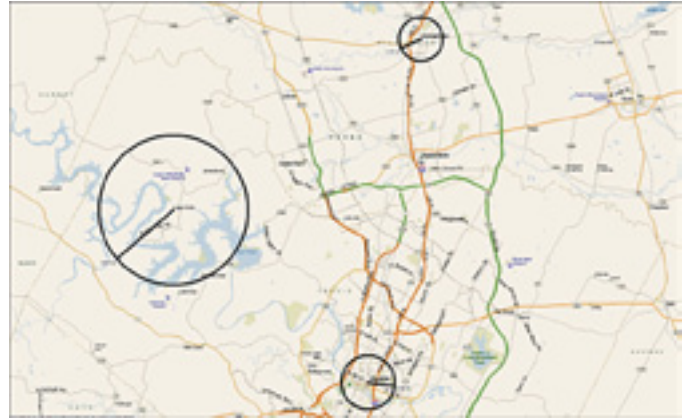
- Lower cost of entry
- Longer battery life
- Reliability
- Bigger, friendlier buttons

I used a SPOT 1 for two riding seasons and never had an issue with the unit. It performed flawlessly. The only thing I didn't like was the interface. To engage tracking you have to press and hold the OK button for 5 seconds or longer. The easiest and most foolproof way to send an OK or Help message while in tracking mode is to turn the unit off/on and then press the appropriate button. The trick is remembering to engage tracking again when the OK/Help message cycle is complete.

SpotWalla acquires location data from SPOT via the same XML Interface that drives the SPOT Shared Page system. Ideally, a near real-time interface would be used, but we have been unsuccessful at discussing this or any other option with SPOT. Currently, the XML Interface is polled every 20 minutes.

Creating a SpotWalla account is simple and effortless. We ask for a working email address, first/last name, a user name and timezone. The only element potentially shared with the world is your user name. If anonymity is important to you, don't use your real name or email address for the user name. Each device you setup may be configured with zero or more secure zones. A secure zone is a circular region of the map in which no locations should be displayed. You may create a secure zone anywhere on the globe. They can be around your home, your place of work,

the weekend cabin, the homes of friends and family or anywhere you travel and would like to maintain some privacy.



Each secure zone is defined by a set of coordinates and a radius between 1 and 99 kilometers. The resulting area of the circle defines the secure zone. The secure zones in the above diagram may cover someone's home in Lago Vista, a workplace in downtown Austin, and Grandma's house in Georgetown.

Using secure zones allows you to share your information without compromising the most important locations in your life.

Once your location data is in SpotWalla, you may share the data with the entire world, with absolutely no one or somewhere in between. SpotWalla users determine the degree of exposure with which they're comfortable, configure SpotWalla to enforce that degree of exposure and share their location data with people in the following ways:

- Trips
- Location Pages
- Last Location Widget

Trips show the route traveled. Trips may be public or private and password-protected. You can also specify the message types that appear on the map and whether or not active secure zones will be honored. Trips are viewed using SpotWalla's trip viewer or the trip may be embedded in a web page.

Users who only want to share their information with close friends and family are encouraged to make their trips private and password-protected. Users who want to share their trips with the world should make their trips public. I always create a private trip for close friends and family. This private trip is configured with no secure zones and to display all message types. When I want to share part of a trip with the world I create a public trip that's configured to honor active secure zones, but to only display Tracking, Custom and Help messages. Since I use OK messages to mark overnight stops, these are messages I'd like to keep private. By preventing OK messages from being displayed on the public trip, I can maintain a bit of privacy while on the road.

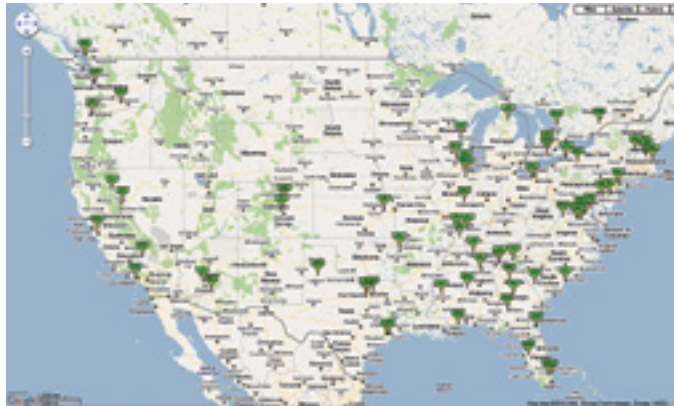
Location Pages show the last known location of multiple users on a single map. They are useful for rides and rallies. Loca-



**SPOT 2 Personal Tracker**

tion Pages can be public or private and password-protected. All Location Pages honor active secure zones and may be configured to show/hide the user's username, show/hide the coordinates and show/hide the time component.

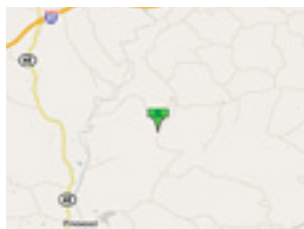
A user's location is personal and private information. SpotWalla will never auto-join a user to a Location Page. When joining a Location Page users may choose the message types that will update their location on the page. This allows users to control when their location is updated. If the page you're joining is private, you may want all message types to update your location. If the page is public, you may want to prevent certain messages from updating your location. For instance, I use the OK message to mark overnight stops. When I join a public location page, I don't want my location updated when I send an OK message.



**SpotWalla Current Location Page**

The image above is from the SpotWalla Current Location page. SpotWalla users from across the globe have joined the page. The image above only shows the users in North America.

The Last Location Widget will display the user's last known location on a map or as text. By default the widget is disabled and the user must explicitly enable it. The widget can be embedded on a web page or queried directly. The widget honors all active secure zones. The behavior of the widget is controlled using parameters that allow you to choose the format of the output, the size of the map displayed and various other characteristics. The images below show what the widget looks like for the same location when displayed as a map or text and when the location is secured and unsecured:



**Map, Unsecured Location**

SpotWalla.com  
Device: Gen II - Orange  
Date : 2010-09-07  
Time : 03:57:35  
America/Chicago

Latitude : 40.66476  
Longitude: -99.08667

**Text, Unsecured Location**

SpotWalla.com  
**I'm Safe and happy... at home.**  
\*\*\* Secure Location \*\*\*\*

**Map, Secured Location**

SpotWalla.com  
Device: Gen II - Orange  
Date : 2010-09-07  
Time : 03:57:35  
America/Chicago

I'm safe and happy... at home.

**Text, Secured Location**

The text message "I'm safe and happy... at home." is a user-controlled custom message that is displayed when the last known location falls within an active secure zone. Each secure zone can have its own custom message.

Once the widget is used on a publicly available web page like a blog or in a forum post, your location is compromised. Everyone who can view the widget has the ability to obtain its URL and save it for later reference. This may be OK while you're on a trip, but what happens when the trip is over? SpotWalla has ways to compensate for this potential over-exposure. First, you can simply disable the widget and render the current URL unavailable, but the next time the widget is enabled, the URL is still valid and potentially compromised. For this reason, SpotWalla allows you to generate a new unique ID for the widget which invalidates the old URL entirely. It's like starting over.

Having the ability to securely share my travels with family and friends has been one of the best decisions I've made in a long time. While I still try to maintain reasonable call-frequency, I know that if they're watching they know where I've been, where I am, and where I'm laying my head for the evening. Having complete control of the application side of the equation has allowed me to address security in a manner that wasn't available two and half years ago.

Whatever the answers are for you, the right mix of hardware and software will allow you to secure your location data and share it a manner that's consistent with the degree of exposure that you decide is right for you and your family. 🚫

**The True Story of the Iron Butt Rally™:  
The World's Toughest Motorcycle Competition**



# HARD MILES™

At the end of August every other year, riders and well-wishers from all over the world congregate days before the start of each Iron Butt Rally™ to meet legendary veterans, reestablish old acquaintances, and to gaze upon long-distance bikes adorned with the latest farkles. It is equal parts tradition, ceremony and circus. As the energy and enthusiasm at any IBR event clearly shows, the men and women participating aren't passionate just about motorcycles, they are passionate about *riding*. It is this passion, and an appetite for competition that separates them from other motorcyclists.

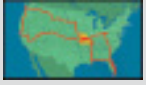
The drama and excitement of the premier long-distance motorcycle competition unfolds in *Hard Miles™*, the DVD documentary of the Iron Butt Rally™. Sanctioned by the IBA, *Hard Miles™* is the definitive information source for all riders wishing to ride a little further down the road and/or those considering a future Iron Butt run.

Video footage from check-points and bonuses



Interviews with riders and rally organizers

Route planning and strategy



How to prep you and your bike for distance

16:9 Widescreen - NTSC video - Length varies, typically 1 hour+ - Stereo, English

For Hard Miles™ orders and more information visit  
**[www.apgvideo.com/ironbuttrally](http://www.apgvideo.com/ironbuttrally)**

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